October 2024 | Final Environmental Impact Report
State Clearinghouse No. 2023020290

# IRWINDALE GATEWAY SPECIFIC PLAN FINAL EIR

for City of Irwindale

*Prepared for:*

**City of Irwindale**
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*Prepared by:*

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PLACEWORKS

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# 1. Introduction

## 1.1 INTRODUCTION

This Final Environmental Impact Report (Final EIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) as amended (Public Resources Code §§ 21000 et seq.) and CEQA Guidelines (California Code of Regulations §§ 15000 et seq.).

According to the CEQA Guidelines, Section 15132, the Final EIR shall consist of:

(a) The Draft Environmental Impact Report (DEIR) or a revision of the Draft;

(b) Comments and recommendations received on the DEIR either verbatim or in summary;

(c) A list of persons, organizations, and public agencies comments on the DEIR;

(d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process; and

(e) Any other information added by the Lead Agency.

This document contains responses to comments received on the DEIR for the Irwindale Gateway Specific Plan during the public review period, which began May 13, 2024, and closed June 27, 2024. This document has been prepared in accordance with CEQA and the CEQA Guidelines and represents the independent judgment of the Lead Agency. This document and the circulated DEIR comprise the Final EIR, in accordance with CEQA Guidelines, Section 15132.

## 1.2 FORMAT OF THE FINAL EIR

This document is organized as follows:

***Section 1, Introduction.*** This section describes CEQA requirements and content of this Final EIR.

***Section 2, Response to Comments.*** This section provides a list of agencies and interested persons commenting on the DEIR; copies of comment letters received during the public review period, and individual responses to written comments. To facilitate review of the responses, each comment letter has been reproduced and assigned a number (A-1 through A-6 for letters received from agencies and organizations, and O-1 through O-2A for letters received from organizations). Individual comments have been numbered for each letter and the letter is followed by responses with references to the corresponding comment number.

***Section 3. Revisions to the Draft EIR.*** This section contains revisions to the DEIR text and figures as a result of the comments received by agencies and interested persons as described in Section 2, and/or errors and omissions discovered subsequent to release of the DEIR for public review.

The responses to comments contain material and revisions that will be added to the text of the Final EIR. City of Irwindale staff have reviewed this material and determined that none of this material constitutes the type of significant new information that requires recirculation of the DEIR for further public comment under CEQA Guidelines Section 15088.5. None of this new material indicates that the project will result in a significant new environmental impact not previously disclosed in the DEIR. Additionally, none of this material indicates that there would be a substantial increase in the severity of a previously identified environmental impact that will not be mitigated, or that there would be any of the other circumstances requiring recirculation described in Section 15088.5.

## 1.3 CEQA REQUIREMENTS REGARDING COMMENTS AND RESPONSES

CEQA Guidelines Section 15204 (a) outlines parameters for submitting comments, and reminds persons and public agencies that the focus of review and comment of DEIRs should be "on the sufficiency of the document in identifying and analyzing possible impacts on the environment and ways in which significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. At the same time, reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible. …CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR."

CEQA Guidelines Section 15204 (c) further advises, "Reviewers should explain the basis for their comments, and should submit data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to Section 15064, an effect shall not be considered significant in the absence of substantial evidence." Section 15204 (d) also states, "Each responsible agency and trustee agency shall focus its comments on environmental information germane to that agency's statutory responsibility." Section 15204 (e) states, "This section shall not be used to restrict the ability of reviewers to comment on the general adequacy of a document or of the lead agency to reject comments not focused as recommended by this section."

In accordance with CEQA, Public Resources Code Section 21092.5, copies of the written responses to public agencies will be forwarded to those agencies at least 10 days prior to certifying the environmental impact report. The responses will be forwarded with copies of this Final EIR, as permitted by CEQA, and will conform to the legal standards established for response to comments on DEIRs.

# 2. Response to Comments

Section 15088 of the CEQA Guidelines requires the Lead Agency (City of Irwindale) to evaluate comments on environmental issues received from public agencies and interested parties who reviewed the DEIR and prepare written responses.

This section provides all written responses received on the DEIR and the City of Irwindale's responses to each comment.

Comment letters and specific comments are given letters and numbers for reference purposes. Where sections of the DEIR are excerpted in this document, the sections are shown indented. Changes to the DEIR text are shown in underlined text for additions and ~~strikeout~~ for deletions.

The following is a list of agencies and persons that submitted comments on the DEIR during the public review period.


| Number Reference | Commenting Person/Agency | Date of Comment | Page No. |
|---|---|---|---|
| Agencies | | | |
| A1 | Los Angeles County Sanitation District | 6/12/24 | 2-3 |
| A2 | Los Angeles County – Office of the Sheriff | 6/17/24 | 2-7 |
| A3 | Department of Transportation – State of California | 6/20/24 | 2-15 |
| A4 | Cal Recycle | 6/26/24 | 2-23 |
| A5 | City of Baldwin Park | 6/27/24 | 2-29 |
| A6 | South Coast Air Quality Management District | 6/27/24 | 2-33 |
| A7 | California Air Resources Board | 7/2/24 | 2-47 |
| Organizations | | | |
| O1 | Advocates for the Environment | 6/24/24 | 2-61 |
| O2 | Blum, Collins & Ho, LLP | 6/24/24 | 2-77 |
| O2A | SWAPE (attachment to letter O2) | 6/20/24 | 2-107 |
| O2B | Golden State Environmental Justice Alliance | 8/7/24 | 2-143 |

# 2. Response to Comments

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LETTER A1 – Los Angeles County Sanitation Districts (2 pages)

LOS ANGELES COUNTY SANITATION DISTRICTS
*Converting Waste Into Resources*

**Robert C. Ferrante**
Chief Engineer and General Manager
1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
(562) 699-7411 • www.lacsd.org

June 12, 2024

Ref. DOC 7224238

**VIA EMAIL** BJones@IrwindaleCA.gov

Ms. Brandi Jones, Senior Planner
City of Irwindale, Community Development Department
Planning Division
5050 North Irwindale Avenue
Irwindale, CA 91706

Dear Ms. Jones:

**Second Response to Irwindale Gateway Specific Plan**

The Los Angeles County Sanitation Districts (Districts) received a Notice of Availability of a Draft Environmental Impact Report (DEIR) for the subject project on May 13, 2024. The proposed project is located within the jurisdictional boundaries of District No. 22. Previous comments submitted by the Districts in correspondence dated March 6, 2023 (copy enclosed) to your agency still apply to the subject project with the following updated information:

1. **Section 5.15.1 Wastewater Treatment and Collection**, Wastewater Conveyance and Wastewater Treatment subsections, *page 5.15-3*: these sections mentioned that the LACSD's 18-inch trunk line located in Romana Parkway. Please replace Romana Parkway to Ramona Parkway, as indicated in the correspondence dated March 6, 2023. A1-1

2. The wastewater generated by the proposed project will be treated at the San Jose Creek Water Reclamation Plant (WRP) located adjacent to the City of Industry, which has a capacity of 100 million gallons per day (mgd) and currently processes an average recycled flow of 60.0 mgd. All biosolids and wastewater flows that exceed the capacity of the San Jose Creek WRP are diverted to and treated at the A.K. Warren Water Resource Facility (formerly known as the Joint Water Pollution Control Plant) in the City of Carson. A1-2

3. The expected average wastewater flow from the project, described in the Draft EIR as 954,796 square feet of warehouse uses and 43,000 square feet of office uses, is 32,470 gallons per day. A copy of the District's average wastewater generation factors is available at Table 1, Loadings for Each Class of Land Use. A1-3

4. All other information concerning Districts' facilities and sewerage service contained in the document is current. A1-4

DOC 7246402.D22

# 2. Response to Comments



If you have any questions, please contact the undersigned at (562) 908-4288, extension 2742, or phorsley@lacsd.org.

Very truly yours,

*Patricia Horsley*

Patricia Horsley
Environmental Planner
Facilities Planning Department

PLH:plh

Enclosure

cc: A. Schmidt
A. Howard

DOC 7246402.D22

**A1. Response to Comments from Los Angeles County Sanitation Districts, dated June 12, 2024.**

A1-1 LACSD requests that the spelling of Romana Parkway be changed to Ramona Parkway. This change has been made as shown in Chapter 3.2 of this Final EIR.

A1-2 LACSD notes that the San Jose Creek Water Reclamation Plant has an average recycled flow of 60 million gallons per day (mgd). LACSD's letter from March 6, 2023, noted that the flow was 62 mgd. Since baseline conditions for the Draft EIR need to reflect conditions at the time of the NOP was released, no changes have been made to the DEIR.

A1-3 LACSD calculated a total sewer generation of 32,470 gallons per day (gpd) for Option 1 of the proposed project based on sewer generation factors adopted by the district. The total sewer generation for Option 1 in the DEIR was calculated using highly conservative sewer generation factors from the Los Angeles Public Works Department and amounted to 310,232 gpd. The analysis is based on the Sewer Area Study conducted for the proposed project which is primarily concerned with the capacity of the existing sewer pipelines in the project vicinity and the need for any offsite upgrades to the system. Sewer generation factors associated with pipeline capacities are typically much more conservative than sewer generation factors related to actual sewer generation since they relate to worse case scenarios. Since the value in the DEIR is more conservative, no changes have been made however text has been added (as shown in Chapter 3.2 of this Final EIR) to clarify this point.

A1-4 LACSD states that all other information concerning the districts' facilities and sewerage service contained in the DEIR is current. No response is required.

# 2. Response to Comments

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LETTER A2 – Robert Luna, Sheriff, Los Angeles County Office of the Sheriff (3 pages)

OFFICE OF THE SHERIFF

COUNTY OF LOS ANGELES

HALL OF JUSTICE

ROBERT G. LUNA, SHERIFF

June 17, 2024

Mr. Brandi Jones, Senior Planner
City of Irwindale
5050 North Irwindale Avenue
Irwindale, California 91706

Dear Mr. Jones:

**IRWINDALE GATEWAY SPECIFIC PLAN**
**NOTICE OF AVAILABILITY DRAFT ENVIRONMENTAL IMPACT REPORT**
**REVIEW COMMENTS**

Thank you for inviting the Los Angeles County Sheriff's Department (Department) to review and comment on the May 2024, Notice of Availability of Draft Environmental Impact Report (NOA DEIR) for the Irwindale Gateway Specific Plan Project (Project). The approximate 67-acre Specific Plan site is located at 13620 Live Oak Lane in the central portion of the City of Irwindale in Los Angeles County. The Irwindale Gateway Specific Plan proposes two development options of mixed-use industrial, storage, and manufacturing and associated amenities. A2-1

Although the Project location is patrolled by the Irwindale Police, our Department provides patrol services to various parks in the area including the Santa Fe Dam Recreational Area adjacent to the Project.

We would recommend that the EIR identify and provide specific requirements to address the following: A2-2

- Implementation of CPTED, Crime Prevention through Environmental Design.
- Define hours of operations of the facility.
- Provide a responsible signage program.

211 WEST TEMPLE STREET, LOS ANGELES, CALIFORNIA 90012

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*Since 1850*

# 2. Response to Comments



- Provide lighting plans to consider security measures and access locations.
- Provide a traffic study for the widening of Live Oak Lane and the inclusion of the stated traffic signal at Live Oak Avenue, to evaluate access and circulation for vehicles/trucks, pedestrians and emergency vehicles to have clear and unobstructed access at all times. Evaluate the ability to provide continuous access while queuing of potential truck traffic on Live Oak Lane, if street parking is permitted.

A2-2 cont'd

The Department has no other comments at this time, but we reserve the right to do so should additional and/or new information become available for the proposed Project.

For future reference, the Department provides the following updated address and contact information for all requests for reviews comments, law documents, and other related correspondence:

A2-3

Tracey Jue, Director
Facilities Planning Bureau
Los Angeles County Sheriff's Department
211 West Temple Street
Los Angeles, California 90012

Attention: Planning Section

Should you have any questions regarding this matter, please contact me at (323) 526-5657, or your staff may contact Ms. Bee Bee Pee, of my staff, at (323) 526-5697.

Sincerely,

ROBERT G. LUNA, SHERIFF

Tracey Jue, Director
Facilities Planning Bureau

Mr. Jones - 3 - June 17, 2024

TJ:BB:ic/rtl

c: Jorge A. Meza, Captain, Temple Sheriff's Station (TEM)
Michael R. Moen, Lieutenant, TEM
Brian E. Anderson, Sergeant, TEM
Louis M. Vigil, Lieutenant, Park Bureau (PB)
Ambar Weber, Sergeant, PB
Jennifer Fang, Assistant Director, Facilities Planning Bureau (FPB)
Meghan Wang, Principal Facilities Project Manager, FPB
Bee Bee Pee, Departmental Facilities Planner I, FPB
Chrono
(EIR- Irwindale Gateway Specific Plan (NOA DEIR))

# 2. Response to Comments

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**A2. Response to Comments from Robert Luna, Sheriff, Los Angeles County Office of the Sheriff, dated June 17, 2024.**

A2-1 The City acknowledges that the Los Angeles County Sheriff's Department provides patrol services proximate to the project site, though as acknowledged by the commenter, the project site is within the jurisdiction of the Irwindale Police Department which would provide police protection services to the proposed project.

A2-2 Since the Irwindale Police Department (IPD) would provide police services to the proposed project, the impacts to police services identified in the Draft EIR are based on input received from the IPD. These impacts are further discussed within Section 5.12.2, *Police Protection*, of the Draft EIR. Prior to the release of the Draft EIR, IPD reviewed the NOP for the proposed project, provided comments on the project, and identified potential impacts to the Department's performance standards in an email correspondence received on April 20, 2023. A copy of this correspondence can be found in Appendix K, *Service Provider Responses*, to the Draft EIR. IPD stated that the proposed project would have a negligible impact on the Department's ability to provide services to the project area. IPD also identified several project design recommendations that are incorporated within the proposed Specific Plan. Many of these reflect the recommendations made by the Los Angeles County Sheriff's Department in this Comment.

For example, the proposed Specific Plan implements several features that align with the principles of Crime Prevention through Environmental Design (CPTED). While CPTED concerns a broad range of design strategies, its core concepts, as defined in the Los Angeles CPTED Guidelines, can be reduced to natural surveillance, natural access control, and territorial reinforcement.[1] With respect to surveillance features, Section 7.7 of the Specific Plan provides comprehensive lighting standards, including the requirement for exterior lighting at parking lots, loading dock areas, pedestrian walkways, building entrances, and public sidewalks at a minimum of one foot-candle. Aisles and passageways within the building complex would also be lit to a maximum of one foot-candle. The proposed design of the buildings also provides ample natural surveillance through the use of large windows (see Section 7.4 of the Specific Plan). The proposed Specific Plan would also require the implementation of various forms of access control including fencing and walls, as discussed in Section 7.6. This includes tubular steel fencing within individual building sites around loading and dock areas, truck yards, and surface detention basins, and/or solid screening walls up to 14 feet in height. In addition, the development is anticipated to have security gates and guardhouses for trucks and service vehicles. Territorial reinforcement design strategies focus on the perception of ownership within a space. The proposed project includes several features that clearly distinguish private and public spaces including entry treatments at the entrances/exits of the project site (see

[1] Los Angeles, City of. 1997. City of Los Angeles Crime Prevention Through Environmental Design Guidelines. https://fldoca.com/wp-content/uploads/2015/10/Los-Angeles-Design-Out-Crime-Guidelines.pdf

Figures 7-9 and 7-10 of the Specific Plan) in addition to comprehensive landscaping treatments throughout the site (see Figures 7-6 and 7-7 of the Specific Plan). The proposed gating and walls, as previously discussed, would also help to define boundaries of ownership within the site. The maintenance of spaces also assists in reinforcing CPTED principles within the long-term. The proposed Specific Plan includes a dedicated section discussing the maintenance plan and responsibilities for all facilities within the proposed development (see Section 9.10 of the Specific Plan).

The operating hours of individual businesses within the proposed development is anticipated to vary based on the needs of individual tenants. The BESS component proposed under Option 2 is expected to be operated remotely up to 24 hours per day and seven days per week. Section 7 of the Specific Plan details the proposed project's plans with respect to signage. Prior to issuance of building permits, a Comprehensive Sign Program shall be approved by the City as conditioned. , . Table 9-2, Maintenance Responsibilities, within Section 9 of the Specific Plan also references the maintenance plan for the onsite and off-site signage.

As discussed above, the proposed Specific Plan provides comprehensive lighting standards that focus on a nonintrusive lighting design that maximizes security needs within the site. Specific security measures would also be implemented for the BESS under Option 2, which may include additional signage, lighting, and cameras. Additionally, as noted on pages 5.12-7 and 5.12-8 of the Draft EIR, the proposed security measures and future lighting plan would be reviewed during the building permit plan check process, including by an IPD captain or lieutenant before the City issues a building permit. This process would determine the need for additional crime prevention measures.

The proposed site access is discussed in detail within Section 5, *Transportation and Circulation*, of the Specific Plan. Figures 5-1 and 5-2 display the roadways and access points to the site under Option 1 and Option 2, respectively. Cross sections are also provided to show the proposed alleys and driveways at the surrounding streets (see Figures 5-3 and 5-4 of the Specific Plan). As discussed in Section 5.13, Transportation, under Impact 5,13-4 of the Draft EIR, the proposed improvements that address emergency and fire access needs would be designed and constructed in accordance with all applicable City and Los Angeles County Fire Department (LACFD) design standards for emergency access (e.g., minimum street width and turning radius). For example, the proposed fire lanes would be designed to meet the minimum width requirements of LACFD to allow for the adequate circulation of emergency vehicles. Fire lanes would be 26 feet wide for buildings up to 35 feet tall, and 28 feet wide for buildings taller than 35 feet.

With respect to the proposed off-site circulation improvements, the project's Traffic Impact Analysis (TIA) (see Appendix L2 to the Draft EIR) analyzed the traffic impacts for the 2040 project horizon year with implementation of signalization at the intersection of Live Oak Lane and Live Oak Avenue. The project scenarios analyzed in the TIA take

into account the proposed roadway improvements to Live Oak Lane which include improvement of the roadway to 60 feet in width with two vehicle travel lanes and two parking lanes on each side of the street.

A2-3 This Comment provides the Los Angeles County Sheriff's Department Facilities Planning Bureau' contact information and concludes the comments provided by the Sheriff's Department. No further response is necessary.

# 2. Response to Comments

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LETTER A3 – Anthony Higgins, Acting LDR Branch Chief, on behalf of the California Department of Transportation (4 pages)

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, Governor

**DEPARTMENT OF TRANSPORTATION**
DISTRICT 7
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 269-1124
FAX (213) 897-1337
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*Making Conservation a California Way of Life*

June 20, 2024

Bandi Jones, Senior Planner
City of Irwindale
5050 Irwindale Avenue
Irwindale, CA 91706

RE: Irwindale Gateway Specific Plan
SCH # 2023020290
Vic. LA-605, PM 23.57 to PM 23.97
GTS # LA-2023-04536-DEIR

Dear Bandi Jones:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced environmental document. The Irwindale Gateway Specific Plan proposes the development of an industrial logistics and distribution center and associated parking and loading docks. The proposed project would redevelop the project site with one of two options.

Option 1 proposes a 52.6-acre general light industrial, manufacturing, warehouse/distribution, e-commerce fulfillment center encompassing 954,796 square feet of warehouse space and 43,000 square feet of office space. A3-1

Option 2 proposes a 36.71-acre general light industrial/warehouse/distribution, e-commerce fulfillment center encompassing 668,070 square feet of warehouse space and 36,000 square feet office space, and 15.94 acres of battery energy storage system (BESS) (electric energy storage, transmission and AC/DC and voltage conversion). The preliminary design for the BESS has 353,000 square feet of battery arrays, within which battery enclosures, inverter enclosures, and medium voltage transformers would be arranged. The BESS would be served by an overhead electric tie-line consisting of three 220-kilovolt conductor cables below an optical ground wire that serves dual purposes of grounding and fiber optic communications.

**Existing Multimodal Infrastructure and Service Conditions**
The VMT (Vehicle Miles Traveled) assessment evaluates existing multimodal infrastructure and service conditions that support non-SOV (Single Occupancy Vehicle) trips, essential for reducing VMT in the project area. Projects exceeding the City's VMT A3-2

"Provide a safe and reliable transportation network that serves all people and respects the environment"

# 2. Response to Comments



significance threshold can mitigate impacts by investing in non-SOV trip infrastructure and services.

**Bicycle and Pedestrian Conditions**

- **San Gabriel River Trail**: This trail runs north/south to the east of the project site between Live Oak Lane and Rivergrade Road, passing under Live Oak Avenue and crossing at an at-grade signalized intersection at Arrow Highway.
- **Sidewalks**: Sidewalks are discontinuous along Arrow Highway and Live Oak Avenue. On Arrow Highway, the sidewalk on the south side ends approximately 170 feet east of Live Oak Lane. On Live Oak Avenue, sidewalks are on the north side from the San Gabriel River Trail to Live Oak Lane and on the south side from the Trail to Graham Road. There is a crosswalk at the Live Oak Avenue/Graham Road intersection. Live Oak Lane lacks sidewalks.
- **Active Transportation Plan**: The City of Irwindale's plan designates Live Oak Avenue and Arrow Highway as Major Roads, recommending a Class IV Bikeway along Live Oak Avenue connecting to the San Gabriel River Trail. The plan also includes actions such as:
    - Encouraging secure bicycle parking at employment centers, commercial areas, recreational, and civic amenities.
    - Promoting pedestrian-oriented improvements in new developments.
    - Requiring new developments to provide sidewalks in Pedestrian Priority Areas.

A3-2 cont'd

**Transit Conditions**

- **Foothill Transit Line 492**: This line (Montclair – Arcadia – El Monte via Arrow Hwy) stops at Live Oak Avenue and Stewart Avenue and runs along the southern border of the project site with service every half hour from 5:30 AM to 11:00 PM.
- **Foothill Transit Line 272**: This line (Duarte – Baldwin Park – West Covina) stops at Live Oak Avenue/Stewart Avenue and Rivergrade Road/Arrow Highway, running along the northern border of the project site with hourly service from 5:30 AM to 9:00 PM.

**Project-Level VMT Analysis**

The SGVCOG web-based VMT Evaluation Tool was used for the project-level analysis under CEQA. The Baseline (Year 2023) plus Project assessment suggests that the project's VMT impact will be modest, comparable to cumulative VMT levels. The following VMT reduction elements were included in the Project-level analysis:

1. Constructing 750 feet of a five-foot-wide meandering public sidewalk and a 20-foot-wide landscaped parkway on the north side of Live Oak Avenue adjacent to the project site.
2. Dedicating 1,900 feet of Live Oak Lane (300 feet and 1,600 feet along the northern and southern portions, respectively) to meet the City's 60-foot street standard.
3. Constructing five-foot-wide sidewalks on both sides of Live Oak Lane and ten-foot-wide landscaped setbacks along the portion abutting the project site.

A3-3

4. Installing a new traffic signal at the Live Oak Lane and Live Oak Avenue intersection.
5. Installing five new public streetlights along the north side and eight along the east side of Live Oak Lane abutting the project site.
6. Constructing a meandering sidewalk and parkway on the south side of Arrow Highway.
7. Providing carpool/vanpool infrastructure.
8. Providing 23 bicycle parking spaces.

Despite these improvements, the project alone would not reduce the VMT impact to less-than-significant levels, necessitating further mitigation measures:

- **New Bus Stop**: Installing a bus stop for Foothill Transit Line 492 on Live Oak Avenue at Live Oak Lane, reducing the distance from the nearest transit stop from 2,750 feet to 150 feet. This would require coordination with Foothill Transit and the City of Irwindale.
- **Class IV Trail**: Modifying the sidewalk and landscaping along Live Oak Avenue to include a Class IV trail, in line with the City of Irwindale's Active Transportation Plan, connecting to the San Gabriel River Trail.

A3-3 cont'd

**VMT Conclusion**
Without VMT reduction measures, the project would result in 20.8 daily VMT per employee, exceeding the City's threshold of 18.5. However, with the proposed multimodal improvements and mitigation measures, the daily VMT per employee would be reduced to 18.4, meeting the City's threshold and resulting in a less-than-significant impact on the transportation system.

**Others**
We noted that the truck VMT is 40 VMT/Emp with or without mitigation measures, as disclosed on page 7-14 of the DEIR. Please provide a discussion or clarification on whether the City intends to mitigate this impact, given that the City's threshold is 18.5 VMT/Emp.

A3-4

We recommend the Lead Agency to consider the following measures for this project as an additional TDM:

1. We encourage the Lead Agency to evaluate the potential of Transportation Demand Management (TDM) strategies and Intelligent Transportation System (ITS) applications in order to better manage the transportation network, as well as transit service and bicycle or pedestrian connectivity improvements. For additional TDM options, please refer to the Federal Highway Administration's *Integrating Demand Management into the Transportation Planning Process: A Desk Reference* (Chapter 8). This reference is available online at:

A3-5

# 2. Response to Comments



http://ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf

2. For this development, a post-development VMT analysis to validate and justify Project VMT and future VMT threshold setting should be prepared. Additional mitigation measures should be implemented when the post-development VMT analysis discloses any traffic significant impact. This analysis, which may include interviews with and surveys of project occupants, will provide new traffic data to help validate the City's VMT traffic model results.

   The collected data can include, among other things, where the trips are coming from, when the trips are taking place, what transportation mode is used, and why those transportation modes were selected. This survey data would be useful for:
   a) validating existing VMT thresholds,
   b) assisting in setting future VMT thresholds, and
   c) identifying suitable TDM to apply as minimization or mitigation measures for the future projects. These measures could be implemented in the event the post-development VMT analysis discloses any significant transportation impacts.

A3-5 cont'd

Please be reminded that any work performed within the State Right-of-way will require an Encroachment Permit from Caltrans. Any modifications to State facilities must meet all mandatory design standard and specifications.

As a reminder, the transportation of heavy construction equipment and materials requiring oversized transport vehicles on State highways will necessitate a Caltrans transportation permit. We recommend scheduling large truck trips during off-peak commute periods and utilizing alternative routes when possible. Additionally, truck drivers should cover construction loads with tarpaulins to prevent debris spillage onto the State Highway. If construction trips are anticipated to impact traffic flow near State facilities, a construction management plan may be required.

A3-6

If you have any questions, please feel free to contact Mr. Alan Lin the project coordinator at (213) 269-1124 and refer to GTS # LA-2023-04536-DEIR.

Sincerely,

Anthony Higgins

Anthony Higgins
Acting LDR Branch Chief

email: State Clearinghouse

*"Provide a safe and reliable transportation network that serves all people and respects the environment"*

**A3. Response to Comments from the California Department of Transportation (Caltrans), dated June 20, 2024.**

A3-1 This Comment summarizes the specifications of the two options under the proposed project and serves as the introduction to Caltrans' letter. As this Comment does not address the adequacy of the Draft EIR, no further response is necessary.

A3-2 As discussed in Section 5.13, Transportation, in Impact 5.13-2, the proposed project would exceed the City's VMT threshold of 18.5 daily VMT per employee and incorporated mitigation measures T-1 and T-2 that reduced VMT levels to below the City's threshold. These mitigation measures align with the list of non-SOV trip infrastructure and service improvements provided in this Comment. Mitigation Measure T-1 directs the applicant to coordinate with Foothill Transit and the City of Irwindale to install a bus stop at Live Oak Avenue and Live Oak Lane for the Foothill Transit Line 492, as provided in the Comment's list of transit conditions. Mitigation Measure T-2 directs the project to accommodate a Class IV trail that connects to the San Gabriel River Trail, consistent with the first and third bullets in the Comment's bicycle and pedestrian conditions list.

A3-3 See response to Comment A3-2. This Comment summarizes the findings of the VMT analysis for the proposed project and the mitigation measures that were incorporated to reduce VMT impacts. As this Comment does not raise any issues with the content of the DEIR, no further response is necessary.

A3-4 VMT is defined as the number of miles traveled by motor vehicles on roadways in a given area over a given time period. VMT may be subdivided for reporting and analysis purposes into single occupant passenger vehicles (SOVs), high occupancy vehicles (HOVs), buses, trains, light duty trucks, and heavy-duty trucks. For example, an air quality analysis may require daily VMT by vehicle class and average speed or vehicle operating mode (idle, acceleration, cruise, deceleration, etc.). For a CEQA compliant transportation impact analysis, automobile VMT (cars and light trucks) is evaluated. California Code of Regulations Title 14 § 15064.3 (a) Purpose. states "…For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project…" This explicitly does not include heavy vehicles in the CEQA transportation analysis, however CEQA analysis of air quality, GHG and noise includes VMT from heavy vehicles.

A3-5 The commenter recommends that the City consider additional Transportation Demand Management (TDM) measures for the proposed project and provides a link to the following report: *Federal Highway Administration: Integrating Demand Management into the Transportation Project, A Desk Reference.* Specifically, the commenter references Chapter 8 of this report which provides TDM suggestions at the local planning level. In Table 8.1 *Local Planning,* for the site development process, this table includes the following recommendation: "Codify the role of TDM in the site plan review process via trip

reduction ordinance or a more information negotiated process." As detailed in the proposed project's VMT Memorandum (see DEIR Appendix L1a) the City has adopted an ordinance to implement TDM measures: The City of Irwindale Municipal Code *17.66.030 – Transportation Demand and Trip Reduction Measures* delineates requirements for non-residential development related to non-automobile supportive programs and infrastructure.

Each of the following three ordinance sections related to non-residential development by progressive square footage would apply to the Irwindale Gateway project:

**17.66.030 – Transportation demand and trip reduction measures**

B. Development Standards

1. Nonresidential development of twenty-five thousand square feet or more shall provide the following to the satisfaction of the city:

    a. A bulletin board, display case or kiosk displaying transportation information located where the greatest number of employees are likely to see it. Information in the area shall include, but is not limited to, the following:

        i. Current maps, routes and schedules for public transit routes serving the site;
        ii. Telephone numbers for referrals on transportation information including numbers for the regional ridesharing agency and local transit operators;
        iii. Ridesharing promotional material supplied by commuter-oriented organizations;
        iv. Bicycle route and facility information, including regional/local bicycle maps and bicycle safety information;
        v. A listing of facilities available at the site for carpoolers, vanpoolers, bicyclists, transit riders and pedestrians.

2. Nonresidential development of fifty thousand square feet or more shall comply with subsection (B)(1) of this section, and shall provide all of the following measures to the satisfaction of the city:

    a. Not less than ten percent of employee parking area(s) shall be located as close as is practical to the employee entrance(s) and shall be reserved for use by potential carpool/vanpool vehicles, without displacing handicapped and customer parking needs. This preferential carpool/vanpool parking area shall be identified on the site plan upon application for a building permit, to the satisfaction of the city. A statement that preferential carpool/vanpool spaces for employees are available and a description of the method for obtaining access to such spaces must be included on the required transportation information board. Spaces will be signed/striped as demand warrants; provided that at all times at least one space for projects fifty thousand square feet to one hundred thousand square feet and

two spaces for projects over one hundred thousand square feet will be signed/striped for carpool/vanpool vehicles.

b. Preferential parking spaces reserved for vanpools must be accessible to vanpool vehicles. When located within a parking structure, a minimum vertical interior clearance of seven feet two inches shall be provided for such spaces and accessways to be used by such vehicles. Adequate turning radii and parking space dimensions shall also be included in vanpool parking areas.

c. Bicycle racks or other secure bicycle parking shall be provided to accommodate four bicycles per the first fifty thousand square feet of nonresidential development and one bicycle per each additional fifty thousand square feet of nonresidential development. Calculations which result in a fraction of 0.5 or higher shall be rounded up to the nearest whole number.

3. Nonresidential development of one hundred thousand square feet or more shall comply with subsections (B)(1) and (2) of this section, and shall provide all of the following measures to the satisfaction of the city:

a. A safe and convenient zone in which vanpool and carpool vehicles may delivery or board their passengers;

b. Sidewalks or other designated pathways following direct and safe routes from the external pedestrian circulation system to each building in the development;

c. If determined necessary by the city to mitigate the project impact, bus stop improvements must be provided. The city will consult with the local bus service providers in determining appropriate improvements. When locating bus stops and/or planning building entrances, entrances must be designed to provide safe and efficient access to nearby transit stations/stops;

d. Safe and convenient access from the external circulation system to bicycle parking facilities on-site.

The VMT analysis prepared by Iteris incorporates the VMT reduction measures listed above as required by the TDM ordinance. Moreover, the ordinance requires that the project applicant demonstrate compliance with each measure and requires the City to ensure that compliance.

Section 17.66.040 – *Monitoring* (Ord. 465 § 6(part), 1993) how the City will ensure the compliance with the required measures through a monitoring program:

The city shall ensure compliance with the measures required by this chapter during project implementation. The project applicant shall demonstrate compliance with each measure in a written report submitted to the city prior to the issuance of a building permit and show compliance prior to the issuance of certificate of occupancy. As applicable,

applicants may be required to provide periodic reports regarding compliance with such measures.

A3-6 This comment is a reminder that the project applicant will require a Caltrans transportation permit if the project requires transportation of heavy construction equipment and materials on State highways. It also notes that a construction management plan may be required if construction trips are anticipated to impact traffic flow near State facilities. The project applicant will comply with these requirements and contact the Caltrans project coordinator, Alan Lin, with any questions.

LETTER A4 – CalRecycle, Nai Teurn, Environmental Scientist, (3 page[s])

California Environmental Protection Agency

CalRecycle
Department of
Resources Recycling and Recovery

Gavin Newsom
*California Governor*
Yana Garcia
*Secretary for Environmental Protection*
Zoe Heller
*CalRecycle Director*

June 26, 2024

Brandi Jones, Senior Planner
City of Irwindale, Planning Division
5050 North Irwindale Avenue
Irwindale, CA 91706

**Subject: SCH No. 2023020290** – Draft Environmental Impact Report for Irwindale Gateway Specific Plan – Los Angeles County

Dear Ms. Jones:

Thank you for allowing the Department of Resources Recycling and Recovery (CalRecycle) staff to provide comments on the proposed project and for your agency's consideration of these comments as part of the California Environmental Quality Act (CEQA) process.

**Project Description**

The City of Irwindale, acting as Lead Agency, has prepared and circulated a Draft Environmental Impact Report (EIR) in order to comply with CEQA and to provide information to, and solicit consultation with, Responsible Agencies in the approval of the proposed project.

The Irwindale Gateway Specific Plan (proposed project) is located at 13620 Live Oak Lane, Irwindale, CA 91706 within the central portion of Irwindale. The site is in the City of Irwindale in eastern Los Angeles County, bounded by Interstate 605 (I-605) to the west, Live Oak Lane to the north and east, and Live Oak Avenue to the south. The project site is approximately 66.64 acres and consists of Assessor Parcel Numbers (APNs) 8532-002-046 and 8532-002-047.

A4-1

The surrounding land uses directly adjacent to the project site include commercial and industrial businesses to the north and east along Live Oak Lane, a Southern California Edison Rio Hondo Substation and staging area to the south across Live Oak Avenue, the Industrial Speedway motorsports facility to the southwest across I-605, and an industrial business park (under construction) for the Park at Live Oak Specific Plan to the west across I-605.

The proposed project outlines two options for the development of the project site. Option 1 designates a 52.65-acre parcel on the project site as Industrial/Business Park. The conceptual plan under Option 1 includes an industrial logistics and distribution

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www.CalRecycle.ca.gov | (916) 322-4027

# 2. Response to Comments



center with three buildings and associated parking and loading docks. The three buildings would allow a maximum of 997,796 square feet of building space - 954,796 square feet of warehouse space and 43,000 square feet of office space. Trailer, truck, and/or car parking would be included throughout the project site.

Option 2, the land use plan would include a 36.71-acre Industrial/Business Park parcel and a 15.94-acre parcel for the Battery Energy Storage System (BESS). Option 2 would consist of two industrial buildings and a 400-megawatt BESS. The two buildings would allow a maximum of 704,070 square feet – 668,070 square feet of warehouse space and 36,000 square feet of office space. A4-1 (cont.)

**Comments**

Currently, within the proposed project location, there is an existing active Inert Debris Engineered Fill Operation (IDEFO), named Nu-Way Live Oak Reclamation, Inc. (Solid Waste Information System (SWIS) Number: 19-AA-0849). Prior to any construction of the proposed project, closure of the IDEFO must be completed.

Per Title 14 of the California Code of Regulation (14 CCR), Section 17388.3(g), upon final placement of the waste at the site, the IDEFO must be covered with at least 3 feet of compacted soil above the fill area or as determined by the Los Angeles County Department of Public Health, acting as the local enforcement agency (LEA). Also, per 14 CCR 17388.3(f), all IDEFOs, upon completion or cessation of fill activities for more than one year and upon any transfer of any part of the land subject to the operation prior to completion of fill activities, shall comply with Title 27 CCR 21170. This section of 27 CCR states that the owner or operator, upon completion of the closure of the site, shall file a detailed description of the closed site, including a map, with the County Recorder and the LEA. Requirements for the detailed description can also be found in this section. A4-2

The Draft EIR, Section 3. Project Description, PDF page 66, third paragraph states that the Operations Plan will include excavation of existing fill in workable areas down to predetermined depths and inspection of noncompliant materials such as hazardous wastes, organics, and asbestos. Noncompliant materials will be segregated and removed. Concurrently, excavated material will be processed as necessary to create fill-specification-compliant material. Compaction monitoring and testing will be conducted with settlement monitors placed at selected locations; areas that do not pass the compactions standards will be excavated and replaced. All reclamation operations will be overseen by a California Professional Geotechnical Engineer or equivalent, as determined by the Director of Engineering. The LEA is responsible for regulatory requirements for excavation, processing of excavated material and closure of the IDEFO. Please work with the LEA regarding any requirements for the excavation, processing and removal of material.

For additional information and resources regarding closure of IDEFOs under 14 and 27 CCR, please visit CalRecycle's webpage at: https://calrecycle.ca.gov/laws/.

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Draft EIR for Irwindale Gateway Specific Plan
June 26, 2024
Page 3 of 3

Solid Waste Regulatory Oversight
The Los Angeles County Department of Public Health is the LEA for Los Angeles County and responsible for providing regulatory oversight of solid waste handling activities, including inspections. Please contact Dorcas (Dee) Hanson-Lugo at 626.430.5540 or dlugo@ph.lacounty.gov to discuss the regulatory requirements for the excavation, processing of material, and closure of the IDEFO. A4-3

**Conclusion**
CalRecycle staff thanks the Lead Agency for the opportunity to review and comment on the environmental document and hopes that this comment letter will be useful to the Lead Agency preparing the Final EIR and in carrying out their responsibilities in the CEQA process.

CalRecycle staff requests copies of any subsequent environmental documents, copies of public notices and any Notices of Determination for this proposed project.

If the environmental document is adopted during a public hearing, CalRecycle staff requests 10 days advance notice of this hearing. If the document is adopted without a public hearing, CalRecycle staff requests 10 days advance notification of the date of the adoption and proposed project approval by the decision-making body. A4-4

If you have any questions regarding these comments, please contact me at 916.323.1799 or by e-mail at nai.teurn@calrecycle.ca.gov.

Sincerely,

*Nai Teurn*

Nai Teurn, Environmental Scientist
Permitting & Assistance Branch – South Unit
Waste Permitting, Compliance & Mitigation Division
CalRecycle

cc: Benjamin Escotto, CalRecycle
Dorcas Hanson-Lugo, LEA

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# 2. Response to Comments

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**A4. Response to Comments from CalRecyle, Department of resources Recycling and Recovery dated June 26, 2024.**

A4-1 This comment summarizes the project description as included in the Draft EIR for both Option 1 (without Battery Energy Storage System (BESS)) and Option 2 (with BESS). No response is necessary.

A4-2 This commenter correctly states that, as local enforcement agency (LEA), the Los Angeles County Department of Public Health has regulatory authority and oversight over the reclamation of the former Nu-Way Landfill. As noted in the comment, construction of the proposed Irwindale Gateway project cannot commence until the Inert Debris Engineered Fill Operation (IDEFO) is completed. The LEA's approval letter for the IDEFO is included as Appendix A to this Final EIR. The commenter references the specific California Code of Regulations (CCR) Title14 and Title 27 with which the owner/operator must comply.

This information is consistent with the Draft EIR and the Chapter 3 Project Description which is referenced in this comment. As noted in the comment, the IDEFO is currently active. Closure of the landfill has not been completed and the remaining closure activities will be completed under the LEA's authority. As disclosed throughout the Draft EIR, the IDEFO, referred to as the Operations Plan, has been approved by the Regional Water Quality Control Board (see letter dated September 14, 2022 and the rough grading plan was approved by the County of Los Angeles Department of Public Works (9/16/22), These documents are included in DEIR Appendix C. As the Operations Plan has been approved, and is therefore, is no longer a discretionary project, is it not subject to CEQA review. As described in DEIR Chapter 3, Project Description, the rough graded site per the Operations Plan serve as baseline conditions for implementation of the Specific Plan. The previously-approved Operations Plan is therefore not a part of the proposed project and is therefore correctly not analyzed in the Draft EIR..

A4-3 The City appreciates the LEA contact information provided for the IDEFO. As noted in response A4-2, the IDEFO is not part of the Draft EIR proposed project.

A4-4 As requested, future public notices regarding the proposed Irwindale Gateway Specific Plan project will be forwarded to the CalRecyle contact provided in this comment. A copy of the Final EIR or response to this comment letter, will be provided at least 10 days prior to the decision-making body's consideration of this project.

# 2. Response to Comments

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LETTER A5 – City of Baldwin Park, Melissa Chipres, MPA, Associate Planner (1 page[s])

**From:** Mel Chipres
**To:** Brandi Jones
**Subject:** Notice of Availability: Draft EIR: Irwindale Gateway Specific Plan
**Date:** Thursday, June 27, 2024 2:56:37 PM
**Attachments:** Outlook-ef3o3hb2.png
Irwindale Gateway NOA FINAL 05-2024.pdf

Good afternoon Brandi,

I hope all is well. We are writing to provide comment on the attached Notice of Availability that was received. The City of Baldwin Park has two (2) requests regarding the document.

1. Please send planning staff public noticing information for the below possible uses as we would like to review staff report and associated materials and provide comment if possible.
2. Please send owners and occupants within a 1,000 foot distance public noticing information for the same possible uses. We would like to give Baldwin Park owners/occupants the opportunity to provide feedback on these uses coming into the area.

A5-1

-wastewater treatment plants
-composting, green waste, or recycling facilities
-fiberglass manufacturing facilities
-painting/coating operations
-large-capacity coffee roasters
-food processing facilities

Please let me know if this is possible or if you have any questions.

Thank you,

**Melissa Chipres, MPA | Associate Planner**
**City Hall is Closed every Friday**
City of Baldwin Park | Community Development Department
14403 E. Pacific Avenue | Baldwin Park, California 91706
T 626.960.4011 X452
www.baldwinpark.com

The Planning Division is now accepting electronic application submittals. Please contact the planning division at (626)813-5261 for further details.

# 2. Response to Comments

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**A5. Response to Comments from the City of Baldwin Park, email dated June 27, 2024.**

A5-1 Per this comment, the City of Baldwin Park requests to be notified of specific land uses (listed in the correspondence) and is also requesting that Baldwin Parks owners/occupants within 1,000 feet of any of the specified uses be notified by the City of Irwindale. Pursuant to the City of Irwindale's procedures, the Notice of Preparation for the proposed project was forwarded to properties within 500 feet of the project boundary (February 10, 2023). The closest Baldwin Park boundary is approximately 500 feet from the proposed project site, however, the nearest industrial/commercial and residential properties in Baldwin Park are approximately 1,000 feet and 2,000 feet from the project site, respectively. Future noticing will adhere to the City's 500-foot radius noticing procedure. Individual noticing beyond the 500 feet is not required by CEQA and not consistent with the City's procedures. The City of Irwindale will provide notice to the City of Baldwin Park of upcoming public hearings for this project, and, as required by CEQA, will provide Baldwin Park a draft response to their DEIR comment letter (A5) at least 10-days prior a public hearing to consider approval of the proposed project.

# 2. Response to Comments

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LETTER A6 – South Coast Air Quality Management District, Sam Wang, Program Supervisor (7 pages)

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SENT VIA E-MAIL:
BJones@IrwindaleCA.gov
Brandi Jones, Senior Planner
City of Irwindale
5050 Irwindale Ave.,
Irwindale, CA 91706

June 27, 2024

**Notice of Availability of a Draft Environmental Impact Report (EIR) for the Irwindale Gateway Specific Plan Project (Proposed Project)**
**[SCH #: 2023020290]**

South Coast Air Quality Management District (South Coast AQMD) staff appreciate the opportunity to review the above-mentioned document. The City of Irwindale is the California Environmental Quality Act (CEQA) Lead Agency for the Proposed Project. To provide context, South Coast AQMD staff has provided a brief summary of the project information and prepared the following comments which are organized by topic of concern.

South Coast AQMD Staff's Summary of Project Information in the Draft EIR

A6-1

Based on the Draft EIR, The project consists of construction of two development options: 1) building a 954,796 square foot warehouse on 52.6 acres with 918 vehicle parking spaces, 346 trailer parking spaces, and 5.8 acres of landscaping, or 2) building a 668,070 square foot warehouse on 36.71 acres and 15.94 acres of battery energy storage system (BESS).[1] Based on a review of aerial photographs, South Coast AQMD staff found that the nearest sensitive receptor (e.g., Single-family Residences) is approximately 2,100 feet southeast of the site.[2] Option 1 and Option 2 building construction were modeled over 37 months, starting in July 2024 and ending in August 2027.[3] The project is located at 13620 Live Oak Lane, bounded by Live Oak Lane to the north and east, Live Oak Avenue to the south, and Interstate 605 to the west.[4]

South Coast AQMD Staff's Comments

*Cancer Risk Impact from Transport Refrigeration Units (TRUs) Truck Off-site Travel in the Health Risk Assessment (HRA) Analysis*

A6-2

Based on the Appendix D2-HRA document, the idling emissions from TRUs were combined with truck idling emissions to determine the total idling emissions at the loading docks, which were modeled as a point source. However, the cancer risk associated with TRUs traveling along roadways (off-site truck travel emissions) was not evaluated in the Appendix D2-HRA analysis. This omission leads to an underestimation of the off-site truck emissions. Therefore, South Coast

[1] Draft EIR. Page 25.
[2] *Ibid.* Page 159.
[3] *Ibid.* Page 166.
[4] *Ibid.* Page 2

# 2. Response to Comments



AQMD staff recommends that the Lead Agency rerun the model to account for the TRU emissions while traveling along roadways.

*Assessment of TRU Idling Durations and Potential Health Impacts from the Proposed Project Site*

Based on South Coast AQMD reviews of the AERMOD modeling files provided in Appendix D2-HRA analysis, the duration for on-site TRU truck idling in the Proposed Project site is 30 minutes. According to the California Air Resource Board (CARB)'s Proposed Amendments to the Airborne Toxic Control Measure (ATCM) for In-Use Diesel-Fueled TRUs, a TRU-equipped vehicle enters the facility fully loaded (inbound) and exits the facility fully loaded (outbound), with each loading and unloading process taking 2 hours—totaling 4 hours. Given this, the loading and unloading of goods during a single visit can result in up to 4 hours of idling on-site. By assuming a 30-minute TRU idling duration, the Lead Agency may have underestimated the potential exposure of nearby residents to diesel exhaust emissions, which could pose a significant cancer risk to the community. Therefore, South Coast AQMD staff recommends that the Lead Agency either include a project design feature in the DEIR to limit TRU idling within the Project site to less than 30 minutes or revise the Project's HRA to reflect a reasonable TRU idling duration supported by substantial evidence.

A6-2 cont'd

*Cumulative Impacts during Operation*

Based on the Draft EIR, the Proposed Project consists of construction of two development options: 1) building a 954,796-square-foot warehouse on 52.6 acres with 918 vehicle parking spaces, 346 trailer parking spaces, and 5.8 acres of landscaping, or 2) building a 668,070-square-foot warehouse on 36.71 acres and 15.94 acres of BESS.[5] Additionally, the approved remediation plan proposes to excavate, process, and recompact all wastes at the landfill to facilitate future development, which will lead to an increase in truck trips in the surrounding community. Notably, based on a review of aerial photographs, South Coast AQMD staff found other existing warehouses approximately 1 mile from the Proposed Project site. South Coast AQMD staff is primarily concerned with the cumulative air quality impacts from increased concentrations of air toxics in the City of Irwindale region. Pursuant to CEQA, which requires an analysis of direct, indirect, and cumulative impacts, South Coast AQMD has initiated a public process to develop additional guidance for evaluating cumulative air quality impacts from increased concentrations of air toxics for projects. To date, there have been five working group meetings (WGMs) dedicated to proposed cumulative impact policy development. For more general information on the WGMs, please visit South Coast AQMD's webpage at https://www.aqmd.gov/home/rules-compliance/ceqa/ceqa-policy-development-(new).

A6-3

Therefore, South Coast AQMD staff recommends that, at minimum, the Lead Agency perform a qualitative analysis to consider the potential cumulative impacts of air toxics by listing all surrounding past, present, and probable future projects. The Lead Agency may also perform a more detailed and robust quantitative analysis of cumulative air toxic and potential health risk implications to be included in the Final EIR.

[5] *Ibid.* Page 20.

*Additional Recommended Air Quality and Greenhouse Gases Mitigation Measures and Project Design Considerations*

CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized to minimize or eliminate any significant adverse air quality impacts. To further reduce the Proposed Project's air quality impacts, South Coast AQMD staff recommends incorporating the following mitigation measures and project design considerations into the Final EIR.

Mitigation Measures for Operational Air Quality Impacts from Mobile Sources

1. Require zero-emissions (ZE) or near-zero emission (NZE) on-road haul trucks, such as heavy-duty trucks with natural gas engines that meet the CARB's adopted optional NOx emissions standard at 0.02 grams per brake horsepower-hour (g/bhp-hr), if and when feasible.

   Note: Given the state's clean truck rules and regulations aiming to accelerate the utilization and market penetration of ZE and NZE trucks, such as the Advanced Clean Trucks Rule and the Heavy-duty Low NOx Omnibus Regulation, ZE and NZE trucks will become increasingly more available to use.

2. Require a phase-in schedule to incentivize the use of cleaner operating trucks to reduce any significant adverse air quality impacts.

   Note: South Coast AQMD staff is available to discuss the availability of current and upcoming truck technologies and incentive programs with the Lead Agency.

3. At a minimum, require the use of a 2010 model year that meets CARB's 2010 engine emissions standards at 0.01 g/bhp-hr of particulate matter (PM) and 0.20 g/bhp-hr of NOx emissions or newer, cleaner trucks. All heavy-duty haul trucks should meet CARB's lowest optional low-NOx standard starting in 2022. Where appropriate, include environmental analyses to evaluate and identify sufficient electricity and supportive infrastructures in the Energy and Utilities and Service Systems Sections in the CEQA document. Include the requirements in applicable bid documents, purchase orders, and contracts. Operators shall maintain records of all trucks associated with project construction to document that each truck used meets these emission standards and make the records available for inspection. Regular inspections should be conducted by the Lead Agency to the maximum extent feasible to ensure compliance.

4. Limit the daily number of trucks allowed at the Proposed Project to levels analyzed in the Final CEQA document. If higher daily truck volumes are anticipated to visit the site, the Lead Agency should commit to re-evaluating the Proposed Project through CEQA prior to allowing this higher activity level.

5. Provide electric vehicle (EV) charging stations or, at a minimum, provide electrical infrastructure, and electrical panels should be appropriately sized. Electrical hookups should be provided for truckers to plug in any onboard auxiliary equipment.

A6-4

# 2. Response to Comments



Mitigation Measures for Operational Air Quality Impacts from Other Area Sources

1. Maximize the use of solar energy by installing solar energy arrays.
2. Use light-colored paving and roofing materials.
3. Utilize only Energy Star heating, cooling, and lighting devices and appliances.

Design Considerations for Reducing Air Quality and Health Risk Impacts

1. Clearly mark truck routes with trailblazer signs so that trucks will not travel next to or near sensitive land uses (e.g., residences, schools, daycare centers, etc.).
2. Design the Proposed Project such that truck entrances and exits are not facing sensitive receptors and trucks will not travel past sensitive land uses to enter or leave the Proposed Project site.
3. Design the Proposed Project such that any truck check-in point is inside the Proposed Project site to ensure no trucks are queuing outside.
4. Design the Proposed Project to ensure that truck traffic inside the Proposed Project site is as far away as feasible from sensitive receptors.
5. Restrict overnight truck parking in sensitive land uses by providing overnight truck parking inside the Proposed Project site.

A6-5

Lastly, the South Coast AQMD also suggests that the Lead Agency conduct a review of the following references and incorporate additional mitigation measures as applicable to the Proposed Project in the Final EIR:

1. State of California – Department of Justice: Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act[6]
2. South Coast AQMD 2022 Air Quality Management Plan,[7] specifically:
   a) Appendix IV-A – South Coast AQMD's Stationary and Mobile Source Control Measures
   b) Appendix IV-B – CARB's Strategy for South Coast
   c) Appendix IV-C – SCAG's Regional Transportation Strategy and Control Measure

A6-6

[6] State of California Department of Justice. Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act. Available at: https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/warehouse-best-practices.pdf

[7] South Coast AQMD, 2022 Air Quality Management Plan. Available at: http://www.aqmd.gov/home/air-quality/air-quality-management-plans/air-quality-mgt-plan

3. United States Environmental Protection Agency (U.S. EPA): Mobile Source Pollution - Environmental Justice and Transportation[8]

A6-6 cont'd

*South Coast AQMD Air Permits and Role as a Responsible Agency*

If implementation of the Proposed Project would require the use of new stationary and portable sources, including but not limited to emergency generators, fire water pumps, boilers, etc., air permits from South Coast AQMD will be required. The final CEQA document, whether a MND or EIR, should include a discussion about the potentially applicable rules that the Proposed Project needs to comply with. Those rules may include, for example, Rule 201 – Permit to Construct,[9] Rule 203 – Permit to Operate,[10] Rule 401 – Visible Emissions,[11] Rule 402 – Nuisance,[12] Rule 403 – Fugitive Dust,[13] Rule 1110.2 – Emissions from Gaseous and Liquid Fueled Engines,[14] Rule 1113 – Architectural Coating,[15] Rule 1166 – VOC Contaminated Soil Excavation,[16] Rule 1179 – Publicly Owned Treatment Works Operation,[17] Regulation XIII – New Source Review,[18] Rule 1401 – Air Toxics,[19] Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminants,[20] Rule 1470 – Requirements for Stationary Diesel Fueled Internal Combustion and Other Compression Ignition Engines,[21] etc. It is important to note that when air permits from South Coast AQMD are required, the role of South Coast AQMD would change from a Commenting Agency to a Responsible Agency under CEQA. In addition, if South Coast AQMD is identified as a Responsible Agency, per CEQA Guidelines Sections 15086, the Lead Agency is required to consult with South Coast AQMD.

A6-7

[8] US.EPA. Mobile Source Pollution - Environmental Justice and Transportation. Available at: https://www.epa.gov/mobile-source-pollution/environmental-justice-and-transportation
[9] South Coast AQMD. Rule 201 available at https://www.aqmd.gov/docs/default-source/rule-book/reg-ii/rule-201.pdf
[10] South Coast AQMD. Rule 203 available at https://www.aqmd.gov/docs/default-source/rule-book/reg-ii/rule-203.pdf
[11] South Coast AQMD. Rule 401 available at https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-401.pdf
[12] South Coast AQMD. Rule 402 available at https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf
[13] South Coast AQMD. Rule 403 available at https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403
[14] South Coast AQMD. Rule 1110.2 available at https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1110_2.pdf
[15] South Coast AQMD. Rule 1113 available at https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf
[16] South Coast AQMD. Rule 1166 available at https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1166.pdf
[17] South Coast AQMD. Rule 1179 available at https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1179.pdf
[18] South Coast AQMD. Regulation XIII available at https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/regulation-xiii
[19] South Coast AQMD. Rule 1401 available at https://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1401.pdf
[20] South Coast AQMD. Rule 1466 available https://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1466.pdf
[21] South Coast AQMD. Rule 1470 available at https://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1470.pdf

# 2. Response to Comments



CEQA Guidelines Section 15096 sets forth specific procedures for a Responsible Agency, including making a decision on the adequacy of the CEQA document for use as part of the process for conducting a review of the Proposed Project and issuing discretionary approvals. Moreover, it is important to note that if a Responsible Agency determines that a CEQA document is not adequate to rely upon for its discretionary approvals, the Responsible Agency must take further actions listed in CEQA Guideline Section 15096(e), which could have the effect of delaying the implementation of the Proposed Project. In its role as CEQA Responsible Agency, the South Coast AQMD is obligated to ensure that the CEQA document prepared for this Proposed Project contains a sufficient project description and analysis to be relied upon in order to issue any discretionary approvals that may be needed for air permits. South Coast AQMD is concerned that the project description and analysis in its current form in the Draft EIR is inadequate to be relied upon for this purpose. A6-8

For these reasons, the final CEQA document should be revised to include a discussion about any and all new stationary and portable equipment requiring South Coast AQMD air permits, provide the evaluation of their air quality and greenhouse gas impacts, and identify South Coast AQMD as a Responsible Agency for the Proposed Project as this information will be relied upon as the basis for the permit conditions and emission limits for the air permit(s). Please contact South Coast AQMD's Engineering and Permitting staff at (909) 396-3385 for questions regarding what types of equipment would require air permits. For more general information on permits, please visit South Coast AQMD's webpage at https://www.aqmd.gov/home/permits.

Conclusion

As set forth in California Public Resources Code Section 21092.5(a) and CEQA Guidelines Section 15088(a-b), the Lead Agency shall evaluate comments from public agencies on the environmental issues and prepare a written response at least 10 days prior to certifying the Final EIR. As such, please provide South Coast AQMD written responses to all comments contained herein at least 10 days prior to the certification of the Final EIR. In addition, as provided by CEQA Guidelines Section 15088(c), if the Lead Agency's position is at variance with recommendations provided in this comment letter, detailed reasons supported by substantial evidence in the record to explain why specific comments and suggestions are not accepted must be provided. A6-9

Thank you for the opportunity to provide comments. South Coast AQMD staff is available to work with the Lead Agency to address any air quality questions that may arise from this comment letter. Please contact Sahar Ghadimi, Air Quality Specialist, at sghadimi@aqmd.gov should you have any questions.

Sincerely,

*Sam Wang*

Sam Wang
Program Supervisor, CEQA IGR
Planning, Rule Development & Implementation

SW:SG

Brandi Jones 7 June 27, 2024

LAC240515-06
Control Number

# 2. Response to Comments

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**A6. Response to Comments from South Coast Air Quality Management District, Sam Wang, Program Supervisor, dated June 27, 2024.**

A6-1 The South Coast Air Quality Management District's (South Coast AQMD) overview of project description is acknowledged. Responses to South Coast AQMD's comments are provided in responses A6-2 through A6-8 below.

A6-2 As stated on page D2-7 of the HRA (Appendix D2), the transport refrigeration units (TRUs) were assumed to cycle on two hours per day per truck. This additional two hours per day of TRU emissions was then added to the 30 minutes per day of truck engine idling assumed. Therefore, the higher amount of TRU idling (or cycling-on) suggested by the commenter was accounted for in the HRA prepared for the project. No changes to the modeling are warranted.

TRU idle durations are based on the California Air Resources Board's (CARB) *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*.[2] Therefore, while some TRUs may idle for longer to maintain temperatures while loading, the average TRU idle duration per truck is no more than two hours, which was what was modeled. Therefore, we disagree with South Coast AQMD's suggestion to increase the idle duration to four hours per truck. Furthermore, as provided on Table 5.2-18, Operational Health Risk Assessment Results, on page 5.2-42 of the Draft EIR, the carcinogenic risks are all well below the significance threshold value of 10 in a million for the maximum exposed individual resident (MEIR) and the maximum exposed sports park user for both Option 1 and Option 2. As stated on page 5.2-53 of the Draft EIR, Mitigation Measures GHG-1, GHG-3, GHG-4, and GHG-7 would further reduce health risks from TAC emissions below the results provided in Table 5.2-18. In particular, Mitigation Measures GHG-3 and GHG-4 would promote the use of electric plug-in TRUs by facilitating plug-in capabilities and support use of electric standby and/or hybrid electric TRUs, which would further reduce diesel particulate matter (DPM) emissions and health risks due to the project from the results provided in Table 5.2-18 of the Draft EIR. Therefore, a mitigation measure limiting idle duration of TRUs onsite to no more than 30 minutes is not warranted because with Mitigation Measure GHG-3 TRUs onsite would be electric or hybrid and not diesel-powered.

A6-3 A qualitative cumulative health risk analysis was conducted and is included on pages 5.2-46 to 5.2-49 of the Draft EIR and on pages D2-29 and D2-30 of the HRA (Appendix D2). The provided cumulative health risk analysis included a table of approved or pending projects within two miles of the proposed project that could impact the community. For instance, Table 5.2-20 on page 5.2-48 of the Draft EIR shows the results of the HRAs prepared for the listed approved and pending projects would not exceed South Coast

[2] California Air Resources Board. 2000, October. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Appendix VII. Page VII-6. https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/rrpapp7.pdf.

AQMD's 10 in a million cancer risk threshold. Similarly, the proposed project's health risk would not exceed the South Coast AQMD threshold of significance. In addition, as stated on page 5.2-53 of the Draft EIR, with implementation of Mitigation Measure GHG-3 the project's cancer risk to maximum exposed individual resident would be reduced to 1.1 in a million by requiring all on-site outdoor cargo-handling equipment to be electric or non-diesel fueled.

However, the project's cumulative effect on health risk in the South Coast AQMD region is still considered to potentially cumulatively contribute to significant health impacts in the South Coast Air Basin. And the Draft EIR concluded the cumulative health risk impacts associated with the proposed project are significant and unavoidable.

A6-4 The commenter suggests mitigation to require the use of zero-emissions (ZE) or near-zero (NZE) emission heavy-duty trucks to reduce ongoing and long-term $NO_X$ emissions.

Warehousing facilities may not own their own fleets, and the types of trucks that they would accommodate would then be dependent on third-party operators. Thus, the types of trucks entering into and accepted by warehousing facilities would not be in their control. For this type of scenario, emissions from trucks associated with a warehousing facility would be controlled through statewide regulatory efforts to transition to cleaner trucks and to near zero/zero-emission trucks such as the Truck and Bus Regulation, Heavy-Duty Low-$NO_X$ Omnibus Rule, Advanced Clean Fleet, and Advanced Clean Truck regulations. For example, as of January 1, 2023, all trucks registered in California are required to be 2010 model year heavy duty trucks per State law (13 California Code of Regulations Section 2025; the CARB Truck and Bus Regulation). Furthermore, all warehousing facilities accommodated under the proposed project would be subject to South Coast AQMD Rule 2305, *Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions* (WAIRE) *Program*. Those warehousing facilities that trigger the Rule 2305 criteria would be mandated to comply with the WAIRE requirements, which would either be direct actions to reduce emissions, or pay a mitigation fee. Since the proposed project will not be operated by the current owner, it is not feasible to commit to specific provisions of Rule 2305; however, future tenants will be obligated to comply with its provisions.

Impacts of the proposed project are evaluated at a plan-level based on the level of information available. A mitigation measure restricting the number of truck trips to those identified in the Draft EIR is not practical or feasible nor is this required by CEQA. There are no mechanisms in place beyond that required for South Coast AQMD Rule 2305 for documenting, tracking and monitoring the number of truck trips. CEQA requires that an EIR evaluate the proposed project based on reasonable assumptions and foreseeable actions. The trip generation estimates for the proposed project were based on the Scoping Agreement reviewed by the City of Irwindale and Iteris and uses trip generation rates in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition,

plus supplemental information from the Fontana Truck Trip Study. The comment does not present any evidence that truck trips associated with the proposed project would be greater than disclosed in the Draft EIR. There is no substantive information presented by this comment or by any of the information in the proposed project's administrative record that contradicts the reasonable assumptions made in the Draft EIR about the expected number of truck trips. Instituting a cap on the number of trucks that can access the proposed project's buildings is not required under CEQA, nor would it be reasonable or feasible for the City to monitor and enforce such a requirement. The Draft EIR has made reasonable assumptions based on substantial evidence by using ITE based on a reasonable type of building occupant that would be permitted by the Specific Plan. For these reasons, this requested mitigation has not been added as it has been determined to be unnecessary.

Mitigation Measure GHG-4 requires sufficiently sized electric rooms to accommodate future electric truck expansion.

A6-5 Review of the commenter's requested mitigation measures is addressed below:

- *Maximize the use of solar energy by installing solar energy arrays.* Mitigation Measure GHG-3 has been amended to clarify that the proposed project would be required to comply with the prescriptive PV system standards of the 2022 Building Energy Efficiency Standards see Chapter 3, *Revisions to the Draft EIR*, of this Final EIR).

- *Use light-colored paving and roofing materials.* Mitigation Measure AQ-4 requires installation of Energy Star labeled roof materials. In addition, roof materials/reflectivity would be required to adhere to the latest standards of CALGreen. No changes are warranted.

- *Utilize only Energy Star heating, cooling, and lighting devices and appliances.* At the request of the commenter, Mitigation Measure GHG-3 has been amended to include this measure (see Chapter 3, *Revisions to the Draft EIR*, of this Final EIR).

- *Clearly mark truck routes with trailblazer signs so that trucks will not travel next to or near sensitive land uses (e.g., residences, schools, daycare centers, etc.).* This mitigation has not been added to the proposed project. Live Oak Avenue, Arrow Highway, and Rivergrade Road have been designated as truck routes (for the movement of vehicles exceeding a maximum gross weight of three tons) in the City of Irwindale pursuant to the Irvine Municipal Code Chapter 10.40 *Restricted Use of Certain Streets.* The City Engineer is authorized to designate such street or portion by appropriate signs.

- *Design the proposed project such that truck entrances and exits are not facing sensitive receptors and trucks will not travel past sensitive land uses to enter or leave the proposed project site.* The access points to the planning area would not be directly across from residential uses and the sports park to the northeast. While the sports park and residential uses would be along

the potential truck routes, as identified in Table 5.2-18 on page 5.2-42 of the Draft EIR, the carcinogenic and noncarcinogenic risks are all below the significance threshold value of 10 in a million and 1, respectively, for the maximum exposed individual resident (MEIR) and the maximum exposed sports park user for both Option 1 and Option 2. Additionally, as stated on page 5.2-53 of the Draft EIR, Mitigation Measures GHG-1, GHG-3, GHG-4, and GHG-7 would further reduce health risks from TAC emissions below the results provided in Table 5.2-18.

- *Design the proposed project such that any truck check-in point is inside the proposed project site to ensure no trucks are queuing outside.* This measure is not applicable to the proposed project as no gate or gatehouse check-in for vehicles is proposed beyond the loading dock areas.

- *Design the proposed project to ensure that truck traffic inside the proposed project site is as far away as feasible from sensitive receptors.* The access points to and the internal circulation in the planning area would not be directly across from residential uses and the sports park to the northeast. While the sports park and residential uses would be along the potential truck routes, as identified in Table 5.2-18 on page 5.2-42 of the Draft EIR, the carcinogenic and noncarcinogenic risks are all below the significance threshold value of 10 in a million and 1, respectively, for the maximum exposed individual resident (MEIR) and the maximum exposed sports park user for both Option 1 and Option 2. Therefore, health risk impacts would be less than significant under the unmitigated scenario. Additionally, as stated on page 5.2-53 of the Draft EIR, Mitigation Measures GHG-1, GHG-3, GHG-4, and GHG-7 would further reduce health risks from TAC emissions below the results provided in Table 5.2-18.

- *Restrict overnight truck parking in sensitive land uses by providing overnight truck parking inside the proposed project site.* The City of Irwindale prohibits overnight parking of commercial vehicles on city streets (see Municipal Code Chapter 10.28.182, Overnight parking restricted on designated streets). Additionally, the proposed project would provide onsite parking for trucks and truck trailers onsite throughout the planning area. Therefore, no changes are warranted.

A6-6 The City considered the citations identified by the commenter when developing the Mitigation Measures for the proposed project. Further, the commenter does not specify which mitigation measures they are recommending in these documents.

Many of these mitigation measures are duplicative to those suggested in this comment letter. Additionally, many of these measures are regional in nature or directed to regional planning efforts or policy formation by government bodies, or the daily business operation practices of private enterprises that are outside the scope of the proposed project. CEQA does not require adoption of every imaginable mitigation measure. CEQA's requirement applies only to feasible mitigation that will "substantially lessen" a

project's significant effects. (Public Resources Code, Section 21002.) As explained by one court: A lead agency's "duty to condition project approval on incorporation of feasible mitigation measures only exists when such measures would [avoid or] 'substantially lessen' a significant environmental effect." (*San Franciscans for Reasonable Growth v. City and County of San Francisco (1989) 209 Cal.App.3d 1502, 1519*.) "Thus, the agency need not, under CEQA, adopt every … mitigation scheme brought to its attention or proposed in the project EIR." (Ibid.) Rather, an EIR should focus on mitigation measures that are feasible, practical, and effective. (*Napa Citizens for Honest Government v. Napa County Board of Supervisors (2001) 91 Cal.App.4th 342, 365*.)

The proposed project's mitigation measures are consistent with and support overarching recommendations in the material cited. No changes are warranted.

A6-7 No specific stationary equipment is proposed at this time because the proposed project are speculative warehouses. Thus, proposed future users/operators of the proposed project's buildings are unknown and impacts are evaluated programmatically for the Specific Plan. As such, it cannot presently be determined whether future users/operators would require the use of stationary equipment. Stationary equipment, if installed, would require a permit to operate from South Coast AQMD and would be specific to tenant needs. The type and amount of stationary equipment needed by a particular tenant would then be determined at that time. However, this information is speculative at this programmatic stage of analysis.

Pages 5.3-12 and 5.3-13 in Chapter 5.3, Air Quality, of the Draft EIR includes a summary of some potentially applicable South Coast AQMD rules. This section has been updated to include additional rules as recommended by the commenter (see Chapter 3, *Revisions to the Draft EIR*, of this Final EIR.

A6-8 See response to Comment A6-7. As stated, the proposed project involves speculative warehouses and impacts for the Specific Plan are evaluated based on the programmatic level of detail available. Therefore, use of stationary equipment is speculative and stationary equipment and are not evaluated as part of the proposed project.

A6-9 Comment acknowledged.

# 2. Response to Comments

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LETTER A7 – California Air Resources Board, Matthew O'Donnell, Chief, Risk Reduction Branch (9 pages)

CALIFORNIA AIR RESOURCES BOARD

Gavin Newsom, Governor
Yana Garcia, CalEPA Secretary
Liane M. Randolph, Chair

CITY OF IRWINDALE
COMMUNITY DEVELOPMENT
JUL 03 2024
RECEIVED

July 2, 2024

Brandi Jones
Senior Planner
City of Irwindale
5050 Irwindale Avenue
Irwindale, California 91706
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*Sent via email*

Brandi Jones:

Thank you for providing the California Air Resources Board (CARB) with the opportunity to comment on the Irwindale Gateway Specific Plan (Project) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2023020290. The Project is proposed within the City of Irwindale (City), California, which is the lead agency for California Environmental Quality Act (CEQA) purposes.

The Project proposes the development of up to three industrial buildings on approximately 53 acres of land under two options. Option 1 would allow for the construction of up to three buildings used for Industrial/Business Park uses totaling 1,000,000 square feet, and Option 2 would allow for the development of up to two buildings used for Industrial/Business Park uses totaling 705,000 square feet and a Battery Energy Storage System (BESS). Option 2 would also include the construction of an overhead electric tie-line for the BESS, including three 220 kilovolt conductor cables below an optical ground wire that serves dual purposes of grounding and fiber optic communications. In the DEIR, the City assumed Option 1 and Option 2 would include up to 387,500 square feet of cold storage uses. Once fully built, the Project would result in up to 2,058 daily vehicle trips (including 550 daily heavy-duty truck trips) under Option 1 and 1,511 daily vehicle trips (including 418 daily heavy-duty truck trips) under Option 2.[1] A7-1

CARB staff are concerned that the Project will expose nearby residential communities to elevated levels of air pollution beyond the existing baseline emissions at the Project site. Residences are located to the southeast and northwest of the Project site, with the closest residence located within 2,200 feet southeast of the Project site. These residences are located near existing toxic diesel particulate matter (diesel PM) emission sources, which A7-2

[1] City of Irwindale. Irwindale Gateway Specific Plan Draft Environmental Impact Report. Page 5.2-25. Accessible at *https://files.ceqanet.opr.ca.gov/285285-2/attachment/R8PSgfRrWe0tMdL_xlR934aNRo6a9ZV3A0aef-nsSlycfhar3r0Y6N4RLx3lK3DmjoTyS8B27lEtW36t0*

# 2. Response to Comments



include existing industrial facilities, rail traffic along existing rail lines, and vehicular traffic along Interstate 605.

The State of California has placed additional emphasis on protecting local communities from the harmful effects of air pollution through the passage of Assembly Bill 617 (AB 617) (Garcia, Chapter 136, Statutes of 2017). AB 617 is a significant piece of air quality legislation that highlights the need for further emission reductions in communities with high exposure burdens, like those in which the Project is located. Diesel PM emissions generated during the construction and operation of the Project would negatively impact neighboring communities.

Through its authority under Health and Safety Code section 39711, the California Environmental Protection Agency (CalEPA) is charged with the duty to identify disadvantaged communities. CalEPA bases its identification of these communities on geographic, socioeconomic, public health, and environmental hazard criteria (Health and Safety Code, section 39711, subsection (a)); In this capacity, CalEPA currently defines a disadvantaged community, from an environmental hazard and socioeconomic standpoint, as a community that scores within the top 25% of the census tracts as analyzed by the California Communities Environmental Health Screening Tool Version 4.0 (CalEnviroScreen). CalEnviroScreen uses a screening methodology to help identify California communities currently disproportionately burdened by multiple sources of pollution. The census tract containing the Project is within the top 17% for Pollution Burden and is considered a disadvantaged community. The City must ensure that the Project does not adversely impact neighboring disadvantaged communities.

A7-2 cont'd

Industrial facilities, like the facilities described in the Project, can result in high volumes of heavy-duty diesel truck traffic, and operation of on-site equipment (e.g., forklifts and yard tractors) that emit toxic diesel emissions, and contribute to regional air pollution and global climate change.[2] To better address regional air pollution and global climate change, Governor Gavin Newsom signed Executive Order N-79-20 on September 23, 2020. The Executive Order states: "It shall be a goal of the State that 100% of in-state sales of new passenger cars and trucks will be zero-emission by 2035. It shall be a further goal of the State that 100% of medium and heavy-duty vehicles in the State be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks. It shall be further a goal of the State to transition to 100% zero-emission off-road vehicles and equipment by 2035 where feasible." The Executive Order further directs the development of regulations to help meet these goals. To ensure that lead agencies, like the City, stay in step with evolving

[2] With regard to greenhouse gas emissions from this project, CARB has been clear that local governments and project proponents have a responsibility to properly mitigate these impacts. CARB's guidance, set out in detail in the Scoping Plan issued in 2022, explains that in CARB's expert view, local mitigation is critical to achieving climate goals and reducing greenhouse gases below levels of significance. CARB's 2022 Scoping Plan for Achieving Carbon Neutrality, published November 16, 2022, is available at *https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf*

scientific knowledge to protect public health from adverse air quality and greenhouse gas impacts from the transportation sector, which serves as the basis of the Governor's Executive Order N-79-20, CARB staff urges the City to plan for the use of zero-emission technologies within the Project area as described in this letter.

A7-2 cont'd

## The City Used Inappropriate Assumptions When Modeling the Project's Health Risk Impacts

The HRA prepared for the Project and presented in Section 5.2 (Air Quality) of the DEIR concluded that residences near the Project site would be exposed to diesel PM emissions that would result in cancer risks of 5.9 chances per million during Project operations under Option 1, and 4.4 chances per million during Project operations under Option 2. Since the Project's cancer risks were below the South Coast Air Quality Management District's (SCAQMD) significance threshold of 10 chances per million, the DEIR concluded that the Project would have a less than significant impact on public health. CARB has reviewed the Project's HRA and is concerned that the Project's cancer risk impacts may have been underestimated for the reasons detailed below.

A7-3

The City assumed an idling duration for onsite transportation refrigeration units (TRUs) that is not supported by substantial evidence. Based on CARB's review of the modeling methodology provided in Appendix D1 (Health Risk Assessment) of the DEIR, the City assumed trucks and trailers with TRUs would idle within the Project site for 30 minutes.[3] CARB has obtained survey data indicating trucks with TRUs can operate for as long as two hours while unloading and two hours while loading frozen goods from trucks and trailers. Trucks that are unloading and loading on the same visit would be assumed to idle for four hours of onsite operation.[4] TRUs on trucks and trailers can emit large quantities of diesel exhaust while operating within the Project site. By assuming a 30-minute TRU idling duration, the City may have underestimated the Project's potential to expose nearby residents to diesel exhaust emissions that could result in a significant cancer risk impact to the nearby community. To fully evaluate the Project's potential health risk impacts, the City must either add a project design feature in the DEIR restricting TRU idling within the Project site to less than 30 minutes or revise the Project's HRA assuming a TRU idling duration supported by substantial evidence.

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[3] City of Irwindale. Irwindale Gateway Specific Plan Draft Environmental Impact Report. Appendix D1. Page D2-14. Accessible at *https://files.ceqanet.opr.ca.gov/285285-2/attachment/R8PSgfRrWe0tMdL_xlR934aNRo6a9ZV3A0aef-nsSlycfhar3r0Y6N4RLx3lK3DmjoTyS8B27lEtW36t0*

[4] California Air Resource Board. Proposed Amendments to the Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate. Appendix I. Page 39. Table II.G.1. Accessible *https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/appi.pdf*

# 2. Response to Comments



Although the City modeled the cancer risk impacts from TRUs on trucks and trailers idling within the Project site, the City did not account for health risk impacts resulting from trucks and trailers with TRUs traveling along truck routes. TRUs on trucks and trailers can expose nearby communities to large quantities of diesel PM exhaust while operating along local roadways, which could pose a severe health risk impact. To provide decision-makers with a better understanding of the extent of the Project's health risk impacts, CARB urges the City to model the potential health risk impacts associated with TRUs on trucks and trails traveling local roadways and report the findings in the Final Environmental Impact Report (FEIR). Although the Emissions Estimator Model (EMFAC) does not provide mobile emission factors for TRUs, the City could estimate the mobile emission rate from TRUs traveling along local roadways by converting the tons per day emission rate obtained from the OFFROAD2021 model using the assumed speed of the trucks and their distance traveled. A7-4

The City may have underestimated the Project's health risk impacts by assuming an idling duration for onsite heavy-duty trucks that is not supported by substantial evidence. The City assumed an idling duration of 30 minutes for onsite heavy-duty trucks when evaluating the Project's health risk impacts.[5] Although CARB's Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Moter Vehicle Idling (ATCM) restricts trucks from idling longer than five minutes. However, the ATCM has an exemption for trucks equipped with a diesel engine meeting the optional nitrogen oxides (NOx) idling emissions standard to operate outside of 100 feet of a restricted area (e.g., residences, schools).[6] Because trucks starting with model year 2008+, are clean-idle certified, many of the trucks operating within the Project site could idle longer than five minutes. According to Table 4.4.2-5 of the EMFAC2021 Volume III Technical Document, heavy-duty trucks can idle for as long as approximately five hours in any one location.[7] To fully evaluate the Project's potential health risk impacts, the City must either add a project design feature in the DEIR restricting heavy-duty truck idling within the Project site to less than 30 minutes or revise the Project's HRA to assume a heavy-duty truck idling duration supported by substantial evidence. A7-5

## The City Must Provide Substantial Evidence Supporting the Project's Baseline and Cumulative Analysis

CARB is concerned that the Project's project-level and cumulative air quality impact analysis did not include air pollutant emissions from onsite grading. As discussed in Section 3.3.1 (Description of Project), the Project site was previously used as a sand and gravel quarry and A7-6

[5] City of Irwindale. Irwindale Gateway Specific Plan Draft Environmental Impact Report. Appendix D1. Attachment B. Accessible at *https://files.ceqanet.opr.ca.gov/285285-2/attachment/x-3m_0RpKfD18YAOzLt8TZvghljgMYTv2SyhwiOLH-b4u7XB_6DYmnwM2ckx0ldGAPB73OvNu5Zp9yUY0*
[6] CARB. Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Accessible at *https://ww2.arb.ca.gov/sites/default/files/2022-06/13_CCR_2485_OAL_06222022-2_ADA_06272022_0.pdf*
[7] CARB. EMFAC2021 Volume III Technical Document. Page 161. Table 4.4.2-5. Accessible at *https://ww2.arb.ca.gov/sites/default/files/2021-03/emfac2021_volume_3_technical_document.pdf*

later as an inert landfill, formally known as the Nu-Way Live Oak Inert Landfill.[8] According to the DEIR, "the former quarry was backfilled with inert materials to its capacity at street level".[9] However, the DEIR states the fill was not property compacted requiring the inert waste from the landfill to be excavated, processed, and recompacted, which is presently ongoing. The DEIR further states, "[t]he rough graded site per the [Nu-Way Live Oak Reclamation Operations Plan] serves as the baseline conditions for the implementation of the Specific Plan" and is not analyzed further in the DEIR.[10]

The Nu-Way Live Oak Reclamation Operations Plan would allow for the placement of 8.3 million cubic yards of fill material to complete the Project site. Assuming each heavy-duty truck can carry approximately 16 cubic yards of fill material, the ongoing reclamation activities within the Project site could result in up to a total of 518,750 heavy-duty truck trips (8.3 million cubic yards of fill divided by 16 cubic yards per truck). The residences near where these heavy-duty trucks would travel would be exposed to a substantial amount of diesel PM that was not evaluated in the DEIR. The Project's cumulative air quality or health risk analysis did not address these potential air quality impacts. To fully understand the Project's contribution to cumulative air quality impacts, the City should account for air pollutant and health risk impacts associated with the grading of the Project site.

A7-6
cont'd

The City does not provide substantial evidence supporting why onsite grading was not included in the Project's air quality and health risk impact analysis. The DEIR states that a Supplemental Environmental Impact Report (SEIR) was prepared for the Nu-Way Live Oak Inert Land Filll was certified and approved in 1994, and a Mitigated Negative Declaration (MND) for early closure of the Nu-Way Live Oak Inert Landfill was approved in 2011. However, it is unclear if the SEIR or MND accounted for the potential air quality and health risk impacts associated with the remediation of the Project site. To make decision-makers and the general public fully aware of the Project's potential environmental impacts, the City must provide substantial evidence supporting how the onsite rough grading and remediation activities are incorporated in the baseline condition in the FEIR.

[8] City of Irwindale. Irwindale Gateway Specific Plan Draft Environmental Impact Report. Page 3-2. Accessible at *https://files.ceqanet.opr.ca.gov/285285-2/attachment/R8PSgfRrWe0tMdL_xlR934aNRo6a9ZV3A0aef-nsSlycfhar3r0Y6N4RLx3lK3DmjoTyS8B27lEtW36t0*

[9] City of Irwindale. Irwindale Gateway Specific Plan Draft Environmental Impact Report. Page 4-4. Accessible at *https://files.ceqanet.opr.ca.gov/285285-2/attachment/R8PSgfRrWe0tMdL_xlR934aNRo6a9ZV3A0aef-nsSlycfhar3r0Y6N4RLx3lK3DmjoTyS8B27lEtW36t0*

[10] City of Irwindale. Irwindale Gateway Specific Plan Draft Environmental Impact Report. Page 3-12. Accessible at *https://files.ceqanet.opr.ca.gov/285285-2/attachment/R8PSgfRrWe0tMdL_xlR934aNRo6a9ZV3A0aef-nsSlycfhar3r0Y6N4RLx3lK3DmjoTyS8B27lEtW36t0*

# 2. Response to Comments



## The City Must Provide More Meaningful Mitigation Measures to Reduce the Project's Significant and Unavoidable Impact on Air Quality

The City concluded in Chapter 5.2 (Air Quality) of the DEIR that the operation of the Project would result in a significant impact on air quality. According to Table 5.2-11 (Maximum Daily Regional Operation Emissions (Option1)) and Table 5.2-12 (Maximum Daily Regional Operation Emissions (Option2)), the operation of the full buildout of the Project would emit as much as 64 pounds per day of organic compounds (VOC), and 150 pounds per day of NOx, which were all found to exceed the SCAQMD's significance threshold and would result in a significant impact on air quality. To mitigate the Project's operational air quality impacts, the DEIR included six mitigation measures (Mitigation Measures AQ-1, AQ-2, GHG-1, GHG-2, GHG-3, and GHG-7), which include:

- requiring construction contractors to use interior and exterior paints with a low VOC content,
- implementation of an odor management plan if it is determined that a project has the potential to emit nuisance odors beyond the property line, and
- all onsite cargo-handling equipment to be electric or non-diesel fueled, and all truck/dock bays that serve cold storage facilities be electrified to facilitate plug-in capabilities and support use of electric standby and/or hybrid electric TRUs.

A7-7

While CARB commends the City for requiring the use of electric onsite cargo-handling equipment and infrastructure to support electric TRUs serving the Project, more could be done to reduce the Project's significant and unavoidable impact on air quality. To reduce the Project's operational air pollutant emissions, CARB urges the City to include a measure that requires all heavy-duty trucks to be zero-emission and to install on-site infrastructure to support those zero-emission trucks. As presented below, CARB has many regulations that promote and eventually require the use of zero-emission trucks at freight facilities, such as the proposed Project. Specifically, the Advanced Clean Fleet Regulation would require all drayage trucks in California to be zero-emission by 2035. To support trucks serving the Project that are already complying with the Advanced Clean Fleets regulation, CARB urges the City to require the infrastructure to support on-site zero-emission trucks at the start of Project operations. A list of commercially-available zero-emission trucks can be obtained from the Hybrid and Zero-emission Truck and Bus Voucher Incentive Project (HVIP).[11] The HVIP is a part of California Climate Investments to incentivize the purchase of zero-emission trucks. Based on CARB's review of the zero-emission trucks listed in the HVIP, there are commercially available electric trucks that can meet the cargo transportation needs of

[11] Zero-Emission Truck and Bus Voucher Incentive Project. Accessible at: *https://californiahvip.org/*

individual industrial uses proposed in the City today. CARB has implemented or is developing regulations that will require the use of zero-emission trucks.

The list below details the CARB regulations that will result in the reduction of diesel PM and NOx emissions from trucks within California:

- **Drayage Truck Regulation:** The existing Drayage Truck Regulation requires all drayage trucks to operate with an engine that is a 2007 model year or newer.
- **Truck and Bus Regulation:** The Truck and Bus Regulation requires all trucks, including drayage, to have 2010 or newer model year engines by January 1, 2023.
- **Heavy-Duty Low-NOx Omnibus Rule:** The Heavy-Duty Low-NOx Omnibus Rule requires truck emission standards to be reduced from 0.20 to 0.05 grams per brake horsepower-hour (g/bhp-hr) from 2024 to 2026, and to 0.02 g/bhp-hr in 2027.
- **Advanced Clean Trucks Regulation:** The Advanced Clean Trucks Regulation, approved by CARB on June 25, 2020, requires manufacturers to start the transition from diesel trucks and vans to zero-emission trucks beginning in 2024. The rule is expected to result in about 100,000 zero-emission trucks in California by the end of 2030 and about 300,000 by 2035. The Advanced Clean Trucks regulation is part of CARB's overall approach to accelerate a large-scale transition to zero-emission medium-and heavy-duty vehicles. CARB approved amendments to the Advanced Clean Trucks regulation in March 2021; the amendments help ensure that more zero-emission vehicles are brought to market. CARB directed staff to ensure that fleets, businesses, and public entities that own or direct the operation of medium- and heavy-duty vehicles in California purchase and operate ZEVs to achieve a smooth transition to ZEV fleets by 2045 everywhere feasible, and specifically to reach:
  - 100% zero-emission drayage trucks, last mile delivery, and government fleets by 2035
  - 100% zero-emission refuse trucks and local buses by 2040
  - 100% zero-emission capable utility fleets by 2040
- **Advanced Clean Fleets Regulation:** The Advanced Clean Fleets Regulation is part of CARB's overall strategy to accelerate a large-scale transition to zero-emission medium- and heavy-duty vehicles. This regulation works in conjunction with the Advanced Clean Trucks regulation. The regulation applies to trucks performing drayage operations at seaports and railyards, fleets owned by State, local, and federal government agencies, and high priority fleets. High priority fleets are those entities that own, operate, or direct at least one vehicle in California, and that have either $50 million or more in gross annual revenue, or that own, operate, or have common ownership or control of a total of 50 or more vehicles. The regulation affects medium- and heavy-duty on-road vehicles with a gross vehicle weight rating greater than 8,500 pounds, off-road yard tractors, and light-duty mail and package delivery

A7-7
cont'd

# 2. Response to Comments



vehicles. All drayage trucks entering seaports and intermodal railyards would be required to be zero-emission by 2035.

With the implementation of the regulations listed above, specifically the Advanced Clean Trucks Regulation, tenants at the proposed industrial/warehouse development must begin the transition from diesel trucks and vans to zero-emission trucks. To help mitigate the Project's impact on air quality and public health, CARB urges the City to include contractual language in tenant lease agreements requiring future tenants to use zero-emission trucks during their operation in the FEIR. A7-7 cont'd

## Conclusion

CARB is concerned about the Project's air quality and public health impacts. To fully assess the Project's impact on neighboring communities, the City must evaluate the Project's health risk impacts by using TRU and heavy-duty truck idling durations supported by substantial evidence and account for diesel PM emissions emitted by trucks and trailers with TRUs traveling along local roadways. To fully understand the Project's contribution to cumulative air quality impacts, the City should account for air pollutant and health risk impacts associated with the grading of the Project site, or provide substantial evidence supporting how the onsite rough grading and remediation activities serve as the baseline condition for the Project. Lastly, to mitigate the Project's significant and unavoidable impact on air quality, CARB urges the City to include a mitigation or design measure in the DEIR that requires trucks serving the Project to be zero-emission at the start of operations. A7-8

CARB appreciates the opportunity to comment on the SEIR for the Project. Given the breadth and scope of projects subject to CEQA review throughout California that have air quality and greenhouse gas impacts, coupled with CARB's limited staff resources to substantively respond to all issues associated with a project, CARB must prioritize its substantive comments here based on staff time, resources, and its assessment of impacts. CARB's deliberate decision to substantively comment on some issues does not constitute an admission or concession that it substantively agrees with the lead agency's findings and conclusions on any issues on which CARB does not substantively submit comments.

CARB staff can provide assistance with zero-emission technologies and emission reduction strategies, as needed. Please include CARB on your list of selected State agencies that will receive the FEIR. If you have questions, please contact Stanley Armstrong, Air Pollution Specialist via email at *stanley.armstrong@arb.ca.gov*.

A7-8
cont'd

Sincerely,

Matthew O'Donnell, Chief, Risk Reduction Branch

cc: State Clearinghouse
*state.clearinghouse@opr.ca.gov*

Yassi Kavezade, Organizer, Sierra Club
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Stanley Armstrong, Air Pollution Specialist, Risk Reduction Branch

# 2. Response to Comments

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**A7. Response to Comments from California Air Resources Board, Matthew O'Donnell, Chief, Risk Reduction Branch, dated July 3, 2024.**

A7-1 Comment provides an overview of the project description and is acknowledged. Responses to the California Air Resources Board's (CARB) comments are provided in responses A7-2 through A7-8 below.

A7-2 The commenter's concerns regarding the cumulative air toxic exposure in an area that has a high pollution burden is noted. The Draft EIR considered health risk at sensitive receptors proximate to the project site. However, as noted by the commenter, sensitive receptors are over 2,200 feet away and are not close to the proposed project. As noted in Section 5.2.5, *Cumulative Impacts*, on pages 5.2-47 through 5.2-48, this EIR considers the project's incremental effect on health risk in light of the elevated background risk identified in the Multiple Air Toxics Exposure Study (MATES) V and cumulative approved and pending projects in the vicinity of the project site. When the proposed project's health risks are considered in combination with cumulative projects, the proposed project would cumulatively contribute to significant health impacts in the air basin, and the air pollutant emissions associated with the proposed project would be cumulatively considerable. Therefore, the EIR considered cumulative health risk impacts to be a significant impact of the proposed project.

CARB is requesting to reduce sensitive receptor's exposure to diesel particulate matter (DPM) that tenants within the project site transition to use of zero emissions (ZE) technologies. The proposed project includes Mitigation Measure GHG-3, which would require all landscaping equipment and cargo handling equipment (e.g., forklifts and yard trucks) to be electric powered. Additionally, this mitigation measure also requires all cold storage facility truck/dock bays be electrified to facilitate plug-in capabilities and support use of electric standby and/or hybrid electric transportation refrigeration units. See response to Comment A7-7 regarding use of electric trucks.

A7-3 As stated on page D2-7 of the HRA (Appendix D2), the transport refrigeration units (TRUs) were assumed to cycle on 2 hours per day per truck. This additional 2 hours per day of TRU emissions was then added to the 30 minutes per day of truck engine idling assumed. Therefore, the higher amount of TRU idling (or cycling-on) suggested by the commenter was accounted for in the HRA prepared for the project. As provided on Table 5.2-18, *Operational Health Risk Assessment Results,* on page 5.2-42 of the Draft EIR, the carcinogenic risks are all below the significance threshold value of 10 in a million for the maximum exposed individual resident (MEIR) and the maximum exposed sports park user for both Option 1 and Option 2. And as stated on page 5.2-53 of the Draft EIR, Mitigation Measures GHG-1, GHG-3, GHG-4, and GHG-7 would further reduce health risks from TAC emissions below the results provided in Table 5.2-18. In particular,

Mitigation Measures GHG-3 and GHG-4 would promote the use of electric plug-in TRUs by facilitating plug-in capabilities and support use of electric standby and/or hybrid electric TRUs, which would further reduce diesel particulate matter (DPM) emissions and health risks due to the project from the results provided in Table 5.2-18 of the Draft EIR.

A7-4 Refrigeration units on refrigerated trucks are typically powered through the main engine of a truck and not through its own auxiliary power during on-road travel. Therefore, the HRA methodology appropriately determined health risks to nearby sensitive receptors from the running exhaust emissions for all the truck engines on nearby truck routes.

See also response to Comment A7-3. As provided on Table 5.2-18, *Operational Health Risk Assessment Results,* on page 5.2-42 of the Draft EIR, the carcinogenic risks are all below the significance threshold value of 10 in a million for the MEIR and the maximum exposed sports park user for both Option 1 and Option 2. And potential electrification of the project TRUs resulting from implementation of Mitigation Measures GHG-3 and GHG-4 would contribute in further reducing on-site DPM emissions from diesel-powered TRUs and, likewise, the health risks shown Table 5.2-18 of the Draft EIR.

A7-5 Over the past 10 years, South Coast AQMD has regularly provided public comment letters to the lead agencies of warehousing projects that such projects are recommended to assume 15 minutes per day of idling per truck trip.[3,4] Per South Coast AQMD, "the 15-minute idling is conservative because it includes the emissions generated when entering the Proposed Project site while heading towards the dock area; idling at the dock; and the emissions generated when leaving the docks while departing from the Proposed Project."[5] Additionally, because "…trucks may idle several times on-site, the SCAQMD staff recommends assuming 15-minutes idling per truck in the HRA analysis, e.g., five minutes entering, five minutes on-site and five minutes existing, etc."[6] As the HRA provided in Appendix D2 of the Draft EIR considers round trips (or 2-way trips), an assumed 30 minutes per day of idling was appropriately applied to the warehousing project evaluated. As provided on Table 5.2-18, *Operational Health Risk Assessment Results,* on page 5.2-42 of the Draft EIR, the carcinogenic risks are all below the significance threshold value of 10

3 South Coast Air Quality Management District, 2018. Comment Letter on Recirculated Mitigated Negative Declaration (MND) for the Proposed Pacoima Spreading Grounds Improvement Project, accessed July 10, 2024 at https://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/LAC181113-04.pdf.

4 South Coast Air Quality Management District, 2015. Comment Letter on Draft Environmental Impact Report (DEIR) for the Proposed Westgate Specific Plan (SCH No. 1995052002), accessed July 10, 2024 at https://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/march/deirwestgate.pdf.

5 South Coast Air Quality Management District, 2018. Comment Letter on Recirculated Mitigated Negative Declaration (MND) for the Proposed Pacoima Spreading Grounds Improvement Project, accessed July 10, 2024 at https://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/LAC181113-04.pdf.

6 South Coast Air Quality Management District, 2015. Comment Letter on Draft Environmental Impact Report (DEIR) for the Proposed Westgate Specific Plan (SCH No. 1995052002), accessed July 10, 2024 at https://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/march/deirwestgate.pdf.

in a million for the maximum exposed individual resident (MEIR) and the maximum exposed sports park user for both Option 1 and Option 2.

A7-6 As stated on page 3-12 of the Draft EIR, the remediation work under the Nu-Way Live Oak Reclamation Operations Plan is considered part of baseline conditions as it is a previously approved project. The Operations Plan includes onsite excavation, processing, and re-compaction of existing fill and is required to be completed prior to commencement of the project development. Since the implementation of the Operations Plan is already currently underway, it would show a higher level of existing truck traffic, noise, vibration, and dust on the project site that would be shown upon completion of the Operations Plan. This would potentially skew the impacts to be lower than if the baseline is set at the completion of the Operations Plan. Thus, due to these reasons, work performed under the Operations Plan is not considered part of the analysis of the proposed project. Also, because the remediation work is underway and is required to be completed prior to initiation of the proposed project, these activities are not included in the assessment of cumulative impacts. .

A7-7 Warehousing facilities may not own their own fleets, and the types of trucks that they would accommodate would be dependent on third-party operators. Thus, the types of trucks entering into and accepted by warehousing facilities would not be in their control. For this type of scenario, emissions from trucks associated with a warehousing facility would be controlled through statewide regulatory efforts to transition to near zero/zero-emission trucks such as those referenced by commenter such as the Advanced Clean Fleet and Advanced Clean Truck regulations. Furthermore, all warehousing facilities accommodated under the proposed project would be subject to South Coast AQMD Rule 2305, *Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program*, which focuses on reducing nitrogen oxides and diesel particulate matter associated with warehouses and goods movement. Those warehousing facilities that trigger the Rule 2305 criteria would be mandated to comply with the WAIRE requirements, which would either be direct actions to reduce emissions, or pay a mitigation fee. The WAIRE program is a menu-based points system and the WAIRE Menu lists the various direct actions a warehouse tenant could implement to achieve the necessary points needed annually to comply with the program points requirement. Acquisition of zero emissions/near zero emission trucks for warehouse tenants who are also fleet operators and installation of onsite electric vehicle charging infrastructure and/or stations are listed as potential direct actions in the WAIRE Menu. Overall, the point-based system provides flexibility for warehouse tenants to customize the types of direct actions to implement based on their individual circumstances. Future warehouse fleet operators could purchase ZE trucks as they become more widely available and viable to satisfy Rule 2305 requirements.

Additionally, the 2022 California Green Building Standards Code (CALGreen) includes mandatory electric medium-duty and heavy-duty truck charging readiness requirements

for warehouses under Section 5.106.5.5.1. Pursuant to this section, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(s), or subpanel(s) must be installed at the time of construction and must meet the minimum power requirements to accommodate the dedicated branch circuits for the future installation of electric vehicle charging equipment and to carry the minimum additional system load to the future location of the charging for medium- and heavy-duty vehicles. The minimum power requirement is based on building type, building size, and number of off-street loading spaces.

A7-8 See response to Comments A7-3 and A7-4. The City disagrees that health risk modeling was done incorrectly. The assumptions for truck and TRU idle durations based on CARB's Airborne Toxic Control Measure idling restrictions and modeling guidance provided by the local air district, South Coast AQMD. Therefore, the health risk modeling included in the EIR fully accounts for the air pollutant and health risk impacts of the proposed project. Remedial activities associated with the Nu-Way Live Oak Reclamation Operations Plan are not a part of the proposed project and would be completed prior to construction of the proposed project. Furthermore, cumulative health risk was identified as a significant unavoidable impact of the proposed project. Mitigation measures were incorporated in the EIR, including ZE control measures, to reduce air pollutant emissions and impacts of the proposed project.

LETTER O1 – Advocates for the Environment (6 pages)

June 24, 2024

**Advocates for the Environment**

A non-profit public-interest law firm
and environmental advocacy organization

Brandi Jones
Senior Planner
City of Irwindale
505 Irwindale Avenue
Irwindale, CA 91706

Via U.S. Mail and email to BJones@IrwindaleCA.gov

Re: Comments on Draft Environmental Impact Report for Irwindale Gateway Specific Plan Project, SCH No. 2023020290

Dear Ms. Jones:

Advocates for the Environment submits the comments in this letter regarding the Draft Environmental Impact Report (**DEIR**) for the Irwindale Gateway Specific Plan Project (**Project**). The Project Site is near Live Oak Lane, Live Oak Avenue, and I-605 in the City of Irwindale (**City**). The Project proposes to develop the 68.1-acre Project Site by constructing either a 954,796 square-foot warehouse (**Option 1**) or a 668,070 square-foot warehouse(**Option 2**). We have reviewed the DEIR prepared in May 2024 and submit comments regarding the sufficiency of the DEIR's Greenhouse-Gas (**GHG**) analysis under the California Environmental Quality Act (**CEQA**). Intro

## The City Should Require the Project to be Net-Zero

Given the current regulatory context and technological advancements, a net-zero significance threshold is feasible and extensively supportable. GHG emissions from buildings, including indirect emissions from offsite generation of electricity, direct emissions produced onsite, and from construction with cement and steel, amounted to 21% of global GHG emissions in 2019. (IPCC Sixth Assessment Report, Climate Change 2022, WGIII, Mitigation of Climate Change, p. 9-4.) This is a considerable portion of global GHG emissions. It is much more affordable to construct new building projects to be net-zero than to obtain the same level of GHG reductions by expensively retrofitting older buildings to comply with climate change regulations. Climate damages will keep increasing until we reach net zero GHG emissions, and there is a California state policy requiring the state to be net-zero by 2045. It therefore is economically unsound to construct new buildings that are not net-zero. O1-1

Environmental groups have achieved tremendous outcomes by litigation under CEQA. Two of the largest mixed-use development projects in the history of California, Newhall Ranch (now FivePoint Valencia), and Centennial (part of Tejon Ranch) decided to move forward as net-zero

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# 2. Response to Comments



communities after losing CEQA lawsuits to environmental groups. The ability for these large projects to become net-zero indicates that it is achievable, even for large-scale developments. The Applicant for this Project should do the same.

We urge the City to adopt net-zero as the GHG significance threshold for this project. This threshold is well-supported by plans for the reduction of GHG emissions in California, and particularly the CARB Climate Change Scoping Plans. The CARB 2017 Scoping Plan states that "achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development." (CARB 2017 Scoping Plan, p. 101.) Additionally, the CARB 2022 Scoping Plan reaffirms the necessity of a net zero target by expressing: "it is clear that California must transition away from fossil fuels to zero-emission technologies with all possible speed … in order to meet our GHG and air quality targets." (CARB 2022 Scoping Plan, p. 184.) CARB further encourages a net-zero threshold in its strategies for local actions in Appendix D to the 2022 Scoping Plan. (CARB 2022 Scoping Plan, Appendix D p. 24-26.) O1-1 cont.

Moving this Project forward as a net-zero project would not only be the right thing for the City to do, but also would also help protect the City and the Applicant from CEQA GHG litigation.

## GHG Mitigation is Insufficient under CEQA

There DEIR examines two options: 1) A 52.65-acre parcel designated as industrial/Business Park, featuring an industrial logistics and distribution center with three buildings. The plan includes up to 997,796 square feet of building space: 954,796 square feet for warehouse space and 43,000 square feet for office space. The project site will also provide parking for trailers, trucks, and cars (**Option 1**); and 2) A 36.71-acre Industrial/Business Park parcel and a 15.94-acre parcel for a 400-megawatt Battery Energy Storage System (**BESS**). It includes two industrial buildings totaling 704,070 square feet, with 668,070 square feet for warehouse space and 36,000 square feet for office space. The BESS design includes 353,000 square feet encompassing battery arrays with battery enclosures, inverter enclosures, and medium voltage transformers (**Option 2**). O1-2

Despite mitigation efforts, the projected project-related emissions amount to 21,805 metric tons of carbon dioxide equivalent (**MTCO2e**) per year under Option 1; and 16,932 MTCO2e per year under Option 2 (DEIR, p. 5.6-27.) The City adopted a significance threshold based on Appendix G of the CEQA Guidelines. The City concluded the Project would have significant GHG emissions because it exceeded the City's chosen 3,000 MTCO2e threshold. To reduce this identified significant GHG impact, the GHG Analysis offered GHG Mitigation Measures (**MM**) 1-7. (DEIR, p. 5.6-25—5.6-27.) However, the DEIR indicates that these measures collectively

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mitigate only between 7.28% and 6.47%[1] of the Project's GHG impact, depending on the chosen option. (DEIR, p. 5.6-27.)

In Option 2, the proposed mitigation measures are projected to reduce the Project's emissions by 1,156 MTCO2e, yet this would only amount to around six percent of the project's emissions. Despite being the scenario with the lowest emissions, Option 2 still significantly exceeds the SCAQMD's threshold of 3,000 MTCO2e/yr. The DEIR concluded there was no further feasible mitigation, so the Project would have "significant and unavoidable" GHG emissions. (DEIR, p. 5.6-27.)

Despite the availability of other GHG mitigation and Project alternatives, the DEIR declared that the Project's emissions were unavoidable, claiming that neither the Project Applicant nor the Lead Agency (City of Irwindale) can substantively or materially effect reductions in Project mobile-source emissions beyond the regulatory requirements. (DEIR, p. 5.6-27.)

Moreover, 54% of operational emissions for Option 1 and 53% for Option 2 stem from Project mobile sources, constituting the largest share of MTCO2e for both Project options. Mobile-source emissions can be mitigated in numerous ways. Even if mobile-source emissions were completely infeasible to mitigate, CEQA does not require that mitigation targets the specific source of GHG emissions, only that the project's cumulative impact is fully mitigated. Because the mitigation measures addressed in the DEIR are insufficient to represent the project's fair share of emissions, this conclusion lacks substantial evidence. The DEIR should have incorporated additional mitigation measures to reduce the Project's GHG emissions to the extent required by CEQA.

O1-2 cont.

***The EIR Identifies Ineffective and Insufficient Mitigation Measures***

The conclusion that the Project will not be able to achieve any mitigation beyond which was identified in the proposed mitigation measures is not supported with substantial evidence. CEQA requires that the lead agency identifies specific reasons for infeasibility of further mitigation when concluding significant and unavoidable impact. The City did not attempt to specify any infeasible mitigation measures when concluding that the Project's GHG impact would be unavoidable.

MM GHG-3 requires the implementation of a solar photovoltaic (**PV**) system associated with proposed project buildings but lacks details on the system's energy offset capacity and scale. This vagueness makes it impossible to assess the measure's effectiveness in reducing greenhouse gas emissions. To be a clear, effective, and enforceable measure, it should be modified to clearly define its performance standards, specifying how much of the project's energy demands it can offset, alongside detailed installation requirements regarding scale.

O1-3

[1] Option 1: $\left(\frac{1{,}650\ \text{MTCO2e}}{22{,}670\ \text{MTCO2e}}\right) \times 100 = 7.28\%$; Option 2: $\left(\frac{1{,}156\ \text{MTCO2e}}{17{,}874\ \text{MTCO2e}}\right) \times 100 = 6.47\%$

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Additionally, some of the mitigation measures lack the enforceability required by CEQA. For example, MM GHG-4 proposes that the project applicant provide documentation ensuring that the building's electric room is sufficiently sized to hold additional panels for future installation of electric truck charging stations and power transport refrigeration units (**TRUs**), and that conduit is installed from the electric room to various places. (DEIR, p. 5.6-26.) While this measure prepares the infrastructure for future electrification, it is vague, with "sufficiently sized to hold additional panels" lacking clear criteria or standards. This vagueness could undermine the measure's efficiency if minimal space is allocated for additional panels. The measure should ensure a guaranteed amount of space for additional panels.

MM GHG-5 requires the tenant to submit a Transportation Demand Management (TDM) Program aimed at reducing single-occupant vehicle use by detailing strategies to increase carpooling, vanpooling, and transit use. The TDM program may also include alternative or compressed work schedules to reduce the number of commuting days. (DEIR, p. 5.6-26.) However, this measure lacks performance standards to ensure the TDM program is effective. The measure itself does not list any concrete strategies to bring about the reduction of single-occupant employee vehicles, rather it defers the creation of specific strategies to a future date. Moreover, the term "may also" introduces ambiguity and lacks enforceability as it does not guarantee the implementation of these additional measures. This non-committal language undermines the effectiveness of the TDM program. The absence of specific strategies and enforceable commitments is insufficient to achieve quantifiable reductions in GHG emissions as it provides no standards or mechanisms to encourage individuals to reduce taking single-passenger trips.

O1-3 cont.

Ultimately, these mitigation measures should be revised to require the level of effectiveness required by CEQA, which is to the extent feasible to achieve fair share mitigation.

## The Project's GHG Impacts Must be Fully Mitigated

CEQA requires that the Project include fair-share mitigation for all significant cumulative impacts. (*Napa Citizens for Honest Gov't v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 364.) Here, this means mitigation of the full extent of the Project's GHG impacts.

The amount of GHG emissions that comprise the Project's fair share is clear. The reasonable lifespan of this Project is approximately 30 years as indicated by the amortization of construction emissions. (DEIR, p. 5.6-21.) .) Therefore, the Project is projected to contribute between 507,960 MTCO2e on the low end and 654,150 MTCO2e on the high end over its entire

O1-4

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lifespan.[2] This would be a good starting point from which to subtract the effect of additional non-offset mitigation measures, before implementing offset purchases. O1-4 cont

The conclusion that the Project will not be able to achieve mitigation beyond what is identified in the mitigation measures is not supported by substantial evidence. There are abundant options available to mitigate emissions to the full extent of the project's emissions. The DEIR notes that mobile emissions are not controllable, making them infeasible to mitigate because of the City of Irwindale and applicant's limited ability to address vehicle emissions. However, the City could require the Applicant to enter into an agreement for a zero-emission heavy-duty truck fleet to the extent feasible and as soon as practicable. While MM GHG-3 specifies the installation of the minimum number of charging stations required by Title 24, there is no evidence that it would be infeasible to install more charging stations beyond the minimum requirement. O1-5

CEQA does not distinguish between mobile and non-mobile sources of GHG emissions; the lead agency can mitigate cumulative GHG impacts through any measure. Several on-site mitigation measures are feasible, including solar water heaters and automatic light switches, among many other mitigation strategies that can be incorporated into the project as design features or as mitigation measures. Such features could be adopted individually or as part of a comprehensive goal of sustainable building certification, such as Leadership and Energy and Environmental Design (**LEED**), that extends further beyond CALGreen requirements. O1-6

## Carbon Offsets are Feasible as Mitigation Measures

After requiring operational emissions reductions to the maximum-feasible extent, the City could also require the Applicant to purchase offsets for the Project's remaining GHG emissions. The City did not provide any evidence for why offsets would be infeasible. Overall, there are more options available to mitigate emissions to the full extent of project emissions, and the City failed to acknowledge or implement many mitigation measures that are feasible and could help reduce the Project's GHG impact to the fair share extent. O1-7

Offsets are acceptable mitigation measures under CEQA (954,796CEQA Guidelines § 15126.4 (c)(3).) There are also many offset projects that are currently operating in California, including projects that are relevant to the Project's operations such as the Truck Stop Electrification project in California (Project ID ACR133), and those that reduce industrial process emissions such as the reclaimed hydrofluorocarbon project by Anew Environmental, LLC (Project

[2] 16,932 MTCO2e per year × 30 years = 507,960 MTCO2e; 21,805 MTCO2e per year × 30 years = 654,150 MTCO2e

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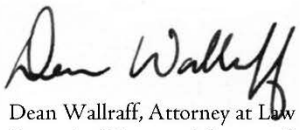
ID ACR777), among others.[3] Such offset programs are just examples of which the City could consider as feasible carbon offsets to reduce the Project's GHG impact. O1-7 cont

## Conclusion

The DEIR fails to require all feasible mitigation, despite concluding that the significant GHG impact will be unavoidable. The lead agency has not met its burden of showing that such measures are infeasible, and therefore the DEIR should be amended to reflect all feasible mitigation to the fair-share extent. Please put me on the interest list to receive updates about the progress of this Project. We make this request under Public Resources Code, section 21092.2. O1-8

Sincerely,



Dean Wallraff, Attorney at Law
Executive Director, Advocates for the Environment

[3] American Carbon Registry (ACR), list of offset projects, available at https://acr2.apx.com/myModule/rpt/myrpt.asp?r=111 (Accessed June 14, 2024).

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**O1 Response to Comments from Advocates for the Environment, Dean Wallraff, dated June 24, 2024.**

O1-1 The California Air Resources Board (CARB) 2022 Scoping Plan is a statewide plan which sets a pathway forward for the state to achieve carbon neutrality and the target of reducing anthropogenic emissions to 85 percent below 1990 levels by year 2045 in accordance with Assembly Bill 1279. Appendix D of the 2022 Scoping Plan provides different potential recommended approaches for local jurisdictions in establishing their GHG significance threshold for purposes of CEQA. While one of the recommended approaches includes use of a net-zero threshold of significance, Appendix D also notes that "…lead agencies can also use other valid significance thresholds".[7] Another recommended approach identified in Appendix D is for lead agencies to "…analyze the GHG impact of proposed projects by employing a threshold of significance recommended by the applicable air district or other lead agencies."[8]

It should also be noted that the recommended approaches in Appendix D, including the net-zero threshold approach is recommended for residential and mixed-use projects only. Per CEQA Guidelines Section 15064.7(c), a lead agency may consider threshold of significance previously adopted or recommended by other public agencies or recommended by experts provided the thresholds are provided by substantial evidence. Furthermore, a net zero threshold is not a CEQA threshold as it represents the point at which a project would not generate any impact. Therefore, a net zero threshold is a "No Impact" threshold. As stated in the Natural Resources *Final Statement of Reasons*[9], CEQA does not require a so-called "one additional molecule" standard, and some projects' incremental contributions would be so minor that their impact does not have to be treated as significant even though the projects would add an additional amount to the significant cumulative impact (see also State CEQA Guidelines Section 15064[h][4].) The level at which the incremental addition becomes cumulatively considerable depends on the nature of the particular cumulative impact being evaluated. The ultimate test is whether any additional amount should be considered significant in the context of the existing cumulative effect (CEQA Section 21083[b][2]).)

For purposes of assessing GHG emissions impacts for the proposed project, the City relies on the GHG emissions threshold developed by the South Coast Air Quality Management District (South Coast AQMD) Working Group. South Coast AQMD, is the public agency that is responsible for improving air quality in the South Coast Air Basin

7 California Air Resources Board. 2022, November. Appendix D: Local Actions, 2022 Scoping Plan for Achieving Carbon Neutrality

8 California Air Resources Board. 2022, November. Appendix D: Local Actions, 2022 Scoping Plan for Achieving Carbon Neutrality

9 California Natural Resources Agency. 2009. Initial Statement of Reasons for Regulatory Action, Proposed Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97. https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/Initial_Statement_of_Reasons.pdf

(SoCAB) in which the proposed project site is situated. To address potential GHG emissions impacts, the South Coast AQMD convened a working group of stakeholders, including GHG specialists, in April 2008, to determine GHG emissions thresholds applicable for development projects in the South Coast Air Basin. Through the two-year effort (2008 to 2010), South Coast AQMD developed size and emissions criteria to easily identify projects that generated a less-than-significant amount of GHG emissions and would not meet the "substantial" increase criteria outlined in the CEQA Checklist. The working group determined that this threshold should be set at 90 percent—that is, 90 percent of projects that undergo environmental analysis would generate more emissions than the threshold amount and require a more detailed evaluation, and 10 percent would generate less.[10] This 10 percent could be considered to have less than significant emissions impacts without further review.

The 90 percent capture rate is cited as an appropriate GHG threshold in the California Air Pollution Control Officer's Association's (CAPCOA) white paper, "CEQA and Climate Change" (2008).[11] Pursuant to the white paper, "while this would exclude perhaps 10 percent of new residential development, the capture of 90 percent of new residential development would establish a strong basis for demonstrating that cumulative reductions are being achieved across the state."

To determine where the bright-line screening criteria should be set so that it captures 90 percent of projects, South Coast AQMD reviewed the Governor's Office of Planning and Research (OPR) database of CEQA projects submitted to the State Clearinghouse. South Coast AQMD calculated direct and indirect GHG emissions for over 700 projects on this database to determine the range of GHG emissions. The data compiled by South Coast AQMD is included as Appendix C to this Final EIR.

Based on initial review of the compiled data, it was easily recognized that different land use types generate unique, different ranges of GHG emissions. To address the fact that different project types generate different magnitudes of total GHG emissions, South Coast AQMD categorized the projects based on the following development project land use types:

- Residential
- Commercial
- Mixed Use

South Coast AQMD identified the amount of emissions generated by each type of project in order to set a bright-line threshold value for the purpose of evaluating GHG emissions

[10] Not all projects over this "bright-line" threshold would have significant impact. Instead, if emissions exceed the bright-line threshold, project can be evaluated against an efficiency metric and/or incorporate mitigation measures to reduce impacts below the thresholds.

[11] Identified as "Approach 2.5, Unit-Based Threshold Based on Market Capture," in the CAPCOA White Paper.

impacts under CEQA. These bright-line thresholds identified by South Coast AQMD at Working Group 15 Meeting and based on substantial data compiled by OPR are shown in the table below. Overall, the South Coast AQMD Working Group recommends use of the 3,000 $MTCO_2e$ interim bright-line screening-level criterion for all project types.[12]

South Coast AQMD Tier 3: Bright Line Thresholds

| Project Type | GHG Threshold ($MTCO_2e$/Year) |
|---|---|
| Residential | 3,500 |
| Commercial | 1,400 |
| Mixed-Use or All Land Use Types | 3,000 |

Sources: South Coast Air Quality Management District (South Coast AQMD). 2010, September 28. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting 15. https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf?sfvrsn=2Note: $MTCO_2e$ = metric tons of carbon dioxide equivalent

South Coast AQMD has never formally adopted these thresholds or officially released guidance on how to apply the thresholds to CEQA projects in the SoCAB. The working group was informally dissolved after a lawsuit was filed by the Building Industry Association against the Bay Area Air Quality Management District for adoption of CEQA thresholds, making it uncertain whether or not South Coast AQMD could proceed with adopting the thresholds without CEQA review.

As explained above, South Coast AQMD's GHG thresholds were developed using substantial evidence and clearly define the incremental amount that would be considered significant in the context of the existing cumulative effect, based on the 90 percentile emissions capture rate. South Coast AQMD's brightline thresholds have been used for projects in the South Coast AQMD region for the last 14 years by lead agencies throughout the region. Additionally, South Coast AQMD has not commented in the last 14 years that use of these thresholds is inappropriate, rather South Coast AQMD's recommendation is that the lead agency will need to decide which threshold is most appropriate. The City of Irwindale has determined that use of the South Coast AQMD's brightline threshold is applicable to the proposed project and is supported by substantial evidence.

O1-2 An EIR must describe feasible measures that could minimize the project's significant adverse impacts. 14 Cal Code Regs Section 15126.4(a)(1). However, mitigation measures for an EIR are not required to reduce a significant impact to a less than significant level. 14 Cal Code Regs Section 15093(b) and Section 15126.2(c). Furthermore, see response to

[12] South Coast AQMD. 2010, September 28. Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group Meeting #15. https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf?sfvrsn=2

Comment O1-4 where commenter makes the same assertion that the project's GHG impacts must be fully mitigated, there are no feasible mitigation measures that would reduce GHG emissions below the GHG significance threshold. Overall, Chapter 5.6, *Greenhouse Gas Emissions*, of the Draft EIR identified Mitigation Measures GHG-1 through GHG-7. However, as discussed on page 5.6-27 of the Draft EIR, while identified mitigation would reduce or contribute to reducing project-related GHG emissions impacts, "Neither the project applicant nor the lead agency (City of Irwindale) can substantively or materially affect reductions in project mobile-source emissions beyond the regulatory requirements." See response to Comment O1-5 for a further discussion on the difficulty of mitigating mobile-source emissions.

O1-3 An EIR must describe feasible measures that could minimize the project's significant adverse impacts. 14 Cal Code Regs Section 15126.4(a)(1). An EIR may decline to propose a mitigation measure that would not effectively address a significant impact. An EIR also need not identify and discuss mitigation measures that are infeasible. Nor must an EIR analyze in detail mitigation measures it concludes are infeasible.

Regarding the solar photovoltaic system requirements of Mitigation Measure GHG-3, the 2022 Building Energy Efficiency Standards include prescriptive photovoltaic (PV) system design standards for non-residential buildings, which includes warehouses. Additionally, the 2022 Building Energy Efficiency Standards also includes performance-based standards to be used as an alternative compliance option to and/or in-lieu of the prescriptive PV system requirements. Mitigation Measure GHG-3 has been amended to specify that the proposed project would be required to comply with the prescriptive PV system standards of the 2022 Building Energy Efficiency Standards.

Mitigation Measure GHG-4 would be implemented in conjunction with and complement Mitigation Measure GHG-3. A requirement under Mitigation Measure GHG-3 requires all truck bays that serve cold storage facilities within the proposed buildings to be electrified to facilitate plug-in capabilities and support use of electric standby and/or hybrid electric transport refrigeration units (TRUs). The requirement under Mitigation Measure GHG-4 that the electrical rooms be "sufficiently sized" would ensure that the electrified truck bays required under Mitigation Measure GHG-3 is fully supported. Sufficiently sized would be dictated on the number of electrified truck bays, which for the proposed project would be all truck bays that serve cold storage facilities.

Similarly, as it pertains to electric truck charging, the sizing of the electrical rooms would also be dependent on the number of electric trucks that the proposed project may accommodate. The number of electric trucks would be dependent on a number of factors, which could include the specific business operations of the tenant/business entity of a proposed building. There are currently no identified tenants for the proposed warehouses and thus, the number of electric trucks is currently unknown. Furthermore, warehousing facilities may not own their own fleets, and the types of trucks that they would

accommodate would be dependent on third-party operators. Thus, the types of trucks entering into and accepted by warehousing facilities would not be in their control. However, the 2022 CALGreen standard includes mandatory electric medium-duty and heavy-duty truck charging readiness requirements for warehouses under Section 5.106.5.5.1. Pursuant to this section, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(s), or subpanel(s) must be installed at the time of construction and must meet the minimum power requirements to accommodate the dedicated branch circuits for the future installation of electric vehicle charging equipment and to carry the minimum additional system load to the future location of the charging for medium- and heavy-duty vehicles. At minimum, the electrical rooms would be built to meet this CALGreen standard.

Regarding Mitigation Measure GHG-5, at minimum, the transportation demand management (TDM) program would be developed to meet the development standards of Section 17.66.030(B) of the City of Irwindale Municipal Code (see Response A3-5) and implementation would comply with the provisions of Section 17.66.040 – *Monitoring* (Ord. 465 § 6(part), 1993) which ensures code compliance, applicant reporting, and City monitoring of the required measures:

> The city shall ensure compliance with the measures required by this chapter during project implementation. The project applicant shall demonstrate compliance with each measure in a written report submitted to the city prior to the issuance of a building permit and show compliance prior to the issuance of certificate of occupancy. As applicable, applicants may be required to provide periodic reports regarding compliance with such measures.

Mitigation Measure GHG-5 has been updated in Chapter 3, Revisions to the Draft EIR, to accurately reflect the specific requirements of the City's Municipal Code.

O1-4 Commenter's statement that "CEQA requires that the Project include fair-share mitigation for all significant cumulative impacts", which is cited to a court ruling appears to be in reference to CEQA Guidelines Section 15130(a)(3), which states as follows:

> An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.

As provided above, Section 15130(a)(3) applies only to the scenario in which a cumulative impact is determined to be less than cumulatively considerable. As discussed on page 5.6-27 of Section 5.6, *Greenhouse Gas Emissions*, of the Draft EIR, the proposed project was determined to result in significant and unavoidable GHG emissions impacts. In addition, per CEQA Guidelines Section 15093(b) and Section 15126.2(b), mitigation measures for an EIR are not required to reduce a significant impact to a less than significant level. Thus, the commenter's assertion that the proposed project must fully mitigate its GHG impacts is incorrect.

O1-5 For the operation phase, warehousing facilities may not own their own fleets, and the types of trucks that they would accommodate would then be dependent on third-party operators. Thus, the types of trucks entering into and accepted by warehousing facilities would not be in their control. Furthermore, at present, requiring zero-emission vehicles is technologically infeasible and such vehicles are not available on a large enough scale to be relied upon. For example, the International Council on Clean Transportation (ICCT) provides an overview of advancing zero-emission technologies in a report titled, "*Transitioning to Zero-Emission Heavy-Duty Freight Vehicles*," (see Appendix B of this Final EIR).[13] The ICCT reports that although the technology is advancing and although at some point in the distant future non-diesel technology will likely be used in mass to power freight movement, "zero-emission vehicle technologies do present considerable challenges. They have a combination of near- and long-term barriers, issues, and questions that will have to be addressed before they can become widespread replacements for conventional trucks and tractor-trailers that are typically diesel fueled" (ICCT pg. 31). Barriers include limited range and charging time. Level 2 charging can take up to 80 to 100 hours to fully charge a 600-kWh heavy duty battery, while a 100-kW direct current (DC) fast charger could take 6 hours.[14] Another barrier could be the current number of chargers available for electric-powered trucks. As of January 2024, it is estimated that only 5,000 chargers capable of serving heavy-duty vehicles are available in the United States and only 9 are public fast charging stations capable of serving heavy trucks. While an additional 15 240-kW DC fast chargers and 3 1,200-kW megawatt chargers came online in the City of Bakersfield in May 2024, the number of chargers would still be low. The California Energy Commission estimated that California will need 114,500 chargers with 5,500 being en-route chargers by 2030 and 264,500 chargers with 8,500 being en-route chargers by 2035.[15]

[13] International Council on Clean Transportation. 2017. Transitioning to Zero-Emission Heavy-Duty Freight Vehicles. https://theicct.org/wp-content/uploads/2021/06/Zero-emission-freight-trucks_ICCT-white-paper_26092017_vF.pdf

[14] UC Berkeley School of Law, Energy & the Environment and UCLA School of Law's Emmett Institute on Climate Change and the Environment. 2024. August. Fueling & Financing: Addressing the Urgent Challenge Facing Electric Heavy-Duty Vehicle Deployment. https://www.law.berkeley.edu/wp-content/uploads/2024/08/Fueling-Financing.pdf

[15] UC Berkeley School of Law, Energy & the Environment and UCLA School of Law's Emmett Institute on Climate Change and the Environment. 2024. August. Fueling & Financing: Addressing the Urgent Challenge Facing Electric Heavy-Duty Vehicle Deployment. https://www.law.berkeley.edu/wp-content/uploads/2024/08/Fueling-Financing.pdf

Furthermore, South Coast Air Quality Management District (South Coast AQMD) noted that "some trucks will have longer wait times for zero emission technology to be commercialized (e.g., Class 8 trucks) (South Coast AQMD pg. 211).[16] South Coast AQMD also notes that the "technical feasibility of some WAIRE Menu actions are not considered technically feasible today (e.g., ZE Class 8 trucks)…" (South Coast AQMD pgs. 75-76). While it is also noted "…they are expected to become commercialized in the next two years…", this timeframe illustrates the potential limited availability of ZE Class 8 trucks. Additionally, the California Air Resources Board (CARB) also acknowledges this in response to a comment regarding generally increasing the sales requirements for Class 2b, 3, 7, and 8 categories required under CARB's Advanced Clean Trucks Regulation. CARB noted that, "The approved regulation does not achieve the same total vehicle sales goal some commenters suggest due to concerns about the feasibility of manufacturers to comply with even higher sales requirements especially for Class 2b-3 vehicles and tractors. At this time, both Class 2b-3 and Class 7-8 tractors have more focused concerns about payload, range, towing, charging/refueling infrastructure, and model availability than other vehicles. These issues will present more challenges in identifying suitable applications for their deployment in the early market. Increasing the number of ZEV sales further also increases the likelihood that manufacturers would need to produce more costly long-range vehicles, and that vehicles may need to be placed in applications where they may not be fully suitable. Therefore, the Board determined that the approved regulation is the most feasible path to meet ZEV deployment goals at this time." (CARB pg. 99)[17] Requiring the proposed project to utilize emerging technology as mandatory mitigation when the various types of technological advancements and their timeframes for common availability are not known with any certainty, is not a feasible mitigation measure. An EIR must describe feasible measures that could minimize the project's significant adverse impacts. 14 Cal Code Regs Section 15126.4(a)(1). An EIR may decline to propose a mitigation measure that would not effectively address a significant impact. An EIR also need not identify and discuss mitigation measures that are infeasible. Nor must an EIR analyze in detail mitigation measures it concludes are infeasible.

For this type of scenario, emissions from trucks associated with a warehousing facility would be controlled through statewide regulatory efforts to transition to cleaner trucks and to near zero/zero-emission trucks such as the Truck and Bus Regulation, Heavy-Duty Low-$NO_X$ Omnibus Rule, Advanced Clean Fleet, and Advanced Clean Truck regulations. Furthermore, all warehousing facilities accommodated under the proposed project would be subject to South Coast AQMD Rule 2305, *Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions* (WAIRE) *Program*, which focuses on reducing

[16] South Coast Air Quality Management District. 2021, April. Second Draft Staff Report Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program and Proposed Rule 316 – Fees for Rule 2305. https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/pr-2305_sr_2nd-draft_4-7-21_clean.pdf?sfvrsn=8

[17] California Air Resources Board. 2021, March. Advanced Clean Trucks Regulation: Final Statement of Reasons. https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/fsor.pdf.

nitrogen oxides and diesel particulate matter associated with warehouses and goods movement. Those warehousing facilities that trigger the Rule 2305 criteria would be mandated to comply with the WAIRE requirements, which would either be direct actions to reduce emissions, or pay a mitigation fee. Since the proposed project would not be operated by the current owner, it is not feasible to commit to specific provisions of Rule 2305. However, future tenants will be obligated to comply with its provisions. The WAIRE program is a menu-based points system and the WAIRE Menu lists the various direct actions a warehouse tenant could implement to achieve the necessary points needed annually to comply with the program points requirement. Acquisition of zero emissions/near zero emission trucks for warehouse tenants who are also fleet operators and installation of onsite electric vehicle charging infrastructure and/or stations are listed as potential direct actions in the WAIRE Menu. Overall, the point-based system provides flexibility for warehouse tenants to customize the types of direct actions to implement based on their individual circumstances. Future warehouse fleet operators could purchase ZE trucks as they become more widely available as a means to satisfy Rule 2305 requirements. Compliance with Rule 2305 would reduce air quality effects associated with the warehouse industry, including the proposed project in the region.

O1-6 Mitigation Measure GHG-6 would require the proposed project to comply with CALGreen's Tier 2 Nonresidential Voluntary Measures electric vehicle (EV) parking standards. The EV parking requirement in Mitigation Measure GHG-3 has been updated to reflect and be consistent with the EV parking requirement prescribed in Mitigation Measure GHG-6 (see Chapter 3, *Revisions to the Draft EIR*, of this Final EIR).

In general, the proposed project would be designed and built to meet CALGreen standards. As stated above, Mitigation Measure GHG-6 would require the proposed project to meet CALGreen's Tier 2 nonresidential voluntary standards for EV parking. It would also require the proposed project to meet CALGreen's Tier 2 nonresidential voluntary standards for providing preferential parking spaces for low-emitting, fuel efficient, and carpool/vanpool vehicles. Additionally, Mitigation Measure GHG-1 establishes minimum requirements for window and duct insulation, HVAC systems, and irrigation control systems. It also requires all-electric energy systems, which would be complemented by Mitigation Measure GHG-2, which would require use of 100 percent carbon-free electricity when feasible, and also by the solar photovoltaic system requirements under Mitigation Measure GHG-3. These measures would contribute to reducing energy sector GHG emissions by eliminating use of natural gas while also having the electricity demands of the proposed buildings be supplied by renewable and carbon-free sources.

O1-7 A carbon offset program for purposes of CEQA mitigation consists of several components. Voluntary carbon offsets must be purchased through a registry approved by the California Air Resources Board (CARB) and the voluntary carbon offset credits made available by a registry must use CARB-approved protocols or equivalent protocols if not

CARB-approved. The voluntary carbon offset credits must also demonstrate that the GHG reductions they achieve are real, permanent, quantifiable, verifiable, additional, and enforceable as set forth in California Health and Safety Code Section 38562(d)(1) and (d)(2) and 17 California Code of Regulations Section 95802(a). Furthermore, there should be a local geographical hierarchy preference (i.e., city, county, state, and country) in where a carbon offset originates.

Despite this stringent criteria, recent caselaw invalidated the use of voluntary carbon offsets for CEQA (*Golden Door Properties v. County of San Diego [2020] 50 Cal.App.5th 467*) (Golden Door II). Pursuant to this decision use of voluntary carbon offsets created an unenforceable performance standard and improperly deferred and delegates mitigation. The "Compliance" market (i.e., CARB's Carbon Offset Program) accounts for most of the carbon offset available in California.[18] Thus, voluntary carbon offsets are likely to come from out-of-state or even out of the country. As a result, use of voluntary carbon offsets may not be considered to mitigate for GHG emissions in California and foreign markets may not have the same rigorous accounting protocols to ensure long-term enforceability of the voluntary carbon credits. For example, the Bay Area Air Quality Management District (BAAQMD), which is the only air district to provide guidance on use of offsets, in their 2022 *CEQA Air Quality Guidelines* specifically states that that GHG reductions be achieved by direct-GHG reductions and that reductions taking place outside of the community should be minimized. BAAQMD cited the findings of Golden Door II, flagged concerns regarding offsets arising outside California; such offsets, if permitted, should be subject to enforcement mechanisms at least as strict and enforceable as under California law. For these reasons, the City of Irwindale has determined that voluntary carbon offsets would not be an effective mitigation strategy for the proposed project.

O1-8 Commenter provides a general summary of Comments O1-1 through O1-7. Please see responses to these comments above.

[18] Offsets reserved for the "Compliance" market are tradable credits issued under the CARB's Compliance Offset Program that represent verified GHG emissions reductions from sources not subject to a compliance obligation in the Cap-and-Trade Program. These offsets may be used by regulated entities under the Cap-and-Trade Program to satisfy a small portion of their compliance obligation each year.

# 2. Response to Comments

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LETTER O2 – Blum, Collins, & Ho, LLP, Gary Ho, on behalf of Golden State Environmental Justice Alliance (16 pages)

[Note: This commenter sent a letter dated August 7, 2024 withdrawing this comment letter and opposition to the proposed Irwindale Gateway Project (see Letter O2b of this Final EIR). In the subsequent letter, the commenter states that the project's developer has addressed Golden State Environmental Justice Alliance's (GSEJA) concerns about environmental mitigation. The responses to the original letter are included below as the original letter is part of the project's administrative record.

# 2. Response to Comments

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**Subject: Comments on Irwindale Gateway Specific Plan EIR (SCH NO. 2023020290)**

Dear Ms. Jones

Thank you for the opportunity to comment on the Environmental Impact Report (EIR) for the proposed Irwindale Gateway Specific Plan. Please accept and consider these comments on behalf of Golden State Environmental Justice Alliance. Also, Golden State Environmental Justice Alliance formally requests to be added to the public interest list regarding any subsequent environmental documents, public notices, public hearings, and notices of determination for this project. Send all communications to Golden State Environmental Justice Alliance P.O. Box 79222 Corona, CA 92877. Intro

**1.0 Summary**

The Irwindale Gateway Specific Plan proposes the development of an industrial logistics and distribution center and associated parking and loading docks. The project site encompasses a former sand and gravel quarry, the NuWay Live Oak Inert Landfill (NuWay Landfill), and a former street-cleaning business. The proposed project would redevelop the project site with one of two options. Option 1 proposes a 52.6-acre general light industrial, manufacturing, warehouse/distribution, e-commerce fulfillment center encompassing 954,796 square feet of warehouse space and 43,000 square feet of office space for a total of 997,796 square feet of building area. Option 2 proposes a 36.71-acre general light industrial/warehouse/distribution, e-commerce fulfillment center encompassing 668,070 square feet of warehouse space and 36,000 square feet office space for a total of 704,070 square feet of building area, and 15.94 acres of battery energy storage system (BESS) (electric energy storage, transmission and AC/DC and voltage conversion). The preliminary design for the BESS has 353,000 square feet of battery arrays, within which battery enclosures, inverter enclosures, and medium voltage transformers would be arranged. The BESS would be served by an overhead electric tie-line consisting of three 220-kilovolt conductor cables below an optical ground wire that serves dual purposes of grounding and fiber optic communications. O2-1 cont.

**1.1 Project Piecemealing**

The EIR does not accurately or adequately describe the project, meaning "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" (CEQA § 15378). The whole of the action proposed by the Irwindale Gateway Specific Plan (IGSP) is a piecemealed portion of a larger overall project that includes the active reclamation and mass grading of the project site. Appendix C: Operations Plan and Grading Permit Approvals indicates that both the Los Angeles Regional Water Quality Control Board approval of Operations Plan and the Los Angeles County Public Works Department/City of Irwindale Grading Permit (GR 0506 2206150001) were issued to the Project Applicant for the proposed project (Irwindale Gateway Specific Plan). The Project Description explicitly states that, "This phase is not a part of the proposed project and is not analyzed in this Draft EIR," without providing a reason for this or referencing if any CEQA analysis was conducted for the reclamation/mass grading. It is clear that the whole of the action for the proposed project was established and split into two separate and distinct phases, a reclamation/mass grading phase and a development phase, in order to artificially reduce environmental impacts.

A project EIR must be prepared that accurately represents the whole of the action without piecemealing the project into separate phases to present unduly low environmental impacts. CEQA Section 15161 describes project EIRs as examining "the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation." The specific development project is the reclamation/mass grading of the project site and construction and operation of all buildings pursuant to the IGSP. O2-2

Additionally, CEQA Section 15146 requires that the degree of specificity in an EIR "will correspond to the degree of specificity involved in the underlying activity which is described in the EIR. (a) An EIR on a construction project will necessarily be more detailed in the specific effects of the project than will be an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy." The project EIR must be more detailed in the specific effects of the whole of the action, which is the entirety of the construction project, including the reclamation/mass grading of the project site. A project EIR must be prepared which accurately represents the whole of the action without piecemealing the project into separate phases to present unduly low environmental impacts.

**3.0 Project Description**

It must be noted that the project requires approval of a General Plan Amendment to change the land use designation from Regional Commercial to Specific Plan and a Zone Change from M-2 (Heavy Manufacturing) to Irwindale Gateway Specific Plan in order to proceed. However, the General Plan does not have "Specific Plan" as an existing Land Use designation. "Specific Plan" is not listed in Table 2-7: Land Use Designations and Development Standards or seen on Exhibit 2-3: City of Irwindale Land Use Plan – Base Land Use Designations within the City's General Plan. The "Specific Plan" land use designation does not exist in the General Plan and therefore cannot be applied to the proposed project. The EIR must be revised to include the creation of a new land use designation titled "Specific Plan" within the General Plan as part of the Project Description and revise all environmental analysis to include this request. O2-3

# 2. Response to Comments



**5.2 Air Quality, 5.4 Energy, and 5.6 Greenhouse Gas Emissions**

The EIR does not include for analysis relevant environmental justice issues in reviewing potential impacts, including cumulative impacts from the proposed project. This is especially significant as the surrounding community is highly burdened by pollution. According to CalEnviroScreen 4.0[1], CalEPA's screening tool that ranks each census tract in the state for pollution and socioeconomic vulnerability, the proposed project's census tract (6037404600) ranks worse than 83 percent of the rest of the state overall. The project's census tract is in the 100th percentile for pollution burden, meaning it is among the most highly polluted ranks of all census tracts in the state of California. The surrounding community bears the impact of multiple sources of pollution and is more polluted than average on every pollution indicator measured by CalEnviroScreen. For example, the project census tract ranks in the 83rd percentile for ozone burden, the 66th percentile for particulate matter (PM) 2.5 burden, the 68th percentile for diesel PM, and 88th percentile for traffic burden. These environmental factors are attributed to heavy truck activity in the area. Ozone can cause lung irritation, inflammation, and worsening of existing chronic health conditions, even at low levels of exposure[2]. Exhaust fumes contain toxic chemicals that can damage DNA, cause cancer, make breathing difficult, and cause low weight and premature births[3]. O2-4

The census tract ranks in the 85th percentile for contaminated drinking water and 93rd percentile for groundwater threats. Poor communities and people in rural areas are exposed to contaminants in their drinking water more often than people in other parts of the state[4]. People who live near contaminated groundwater may be exposed to chemicals moving from the soil into the air inside their homes[5].

The census tract also ranks in the 99th percentile for solid waste facility impacts and 92nd percentile for hazardous waste facility impacts. Solid waste facilities can expose people to hazardous chemicals, release toxic gases into the air (even after these facilities are closed), and chemicals can leach into soil around the facility and pose a health risk to nearby populations[6]. Hazardous waste generators and facilities contribute to the contamination of air, water and soil near waste generators and facilities can harm the environment as well as people[7].

Further, the census tract is a diverse community including 90% Hispanic residents, whom are especially vulnerable to the impacts of pollution. The community has a high rate of low educational attainment, meaning 70% of the census tract residents over age 25 has not attained a high school diploma. The community also has a high rate of poverty, meaning 49% of the households in the census tract have a total

[1] https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/page/CalEnviroScreen-4_0/
[2] OEHHA Ozone https://oehha.ca.gov/calenviroscreen/indicator/air-quality-ozone
[3] OEHHA Traffic https://oehha.ca.gov/calenviroscreen/indicator/traffic-density
[4] OEHHA Contaminated Drinking Water https://oehha.ca.gov/calenviroscreen/drinking-water
[5] OEHHA Groundwater Threats https://oehha.ca.gov/calenviroscreen/indicator/groundwater-threats
[6] OEHHA Solid Waste Facilities https://oehha.ca.gov/calenviroscreen/indicator/solid-waste-sites-and-facilities
[7] OEHHA Hazardous Waste Generators and Facilities https://oehha.ca.gov/calenviroscreen/indicator/hazardous-waste-generators-and-facilities

income before taxes that is less than the poverty level. Income can affect health when people cannot afford healthy living and working conditions, nutritious food and necessary medical care[8]. Poor communities are often located in areas with high levels of pollution[9]. Poverty can cause stress that weakens the immune system and causes people to become ill from pollution[10]. Living in poverty is also an indication that residents may lack health insurance or access to medical care. Medical care is vital for this census tract as it ranks in the 37th percentile for incidence of cardiovascular disease and 54th percentile for incidence of asthma.

Additionally, the project site's census tract (6037404600) and the census tracts adjacent to the project site (6037404501 (east), 6037404402 (east), 6037405002 (south) and 6037405001 (south)) are identified as SB 535 Disadvantaged Communities[11]. This indicates that cumulative impacts of development and environmental impacts in the immediate vicinity are disproportionately impacting this community. The negative environmental, health, and quality of life impacts resulting from a saturation of the warehousing and logistics industry in the community have become distinctly inequitable. A revised EIR must be prepared to include the specific analysis of each environmental impact (including the significant and unavoidable cumulatively considerable Air Quality and GHG impacts) on the Disadvantaged Communities, including cumulative analysis and irreversible environmental effects.

O2-4 cont.

The State of California lists three approved compliance modeling softwares for non-residential buildings: CBECC-Com, EnergyPro, and IES VE. CalEEMod is not listed as an approved software. The CalEEMod modeling does not comply with the 2022 Building Energy Efficiency Standards and under-reports the project's significant Energy impacts and fuel consumption to the public and decision makers. Since the EIR did not accurately or adequately model the energy impacts in compliance with Title 24, a finding of significance must be made. A revised EIR with modeling using one of the approved software types must be prepared and circulated for public review in order to adequately analyze the project's significant environmental impacts. This is vital as the EIR utilizes CalEEMod as a source in its methodology and analysis, which is clearly not an approved software.

**5.9 Land Use and Planning**

It must be noted that the horizon year of the City's General Plan is 2020[12]. Any development beyond year 2020 is not accounted for or analyzed by the City's current General Plan and its EIR. The project is proposed four years after the horizon year of the General Plan and therefore is not accounted for in its growth projections or environmental analysis. The EIR is inadequate as an informational document since the horizon year of the General Plan has passed and it has not provided a cumulative analysis of all development projects approved since the date of General Plan adoption in 2008. A revised EIR must be prepared to include this information for analysis to adequately and accurately analyze all potentially significant environmental impacts. A finding of significance must be included because the project tiers from

O2-5

[8] OEHHA Poverty https://oehha.ca.gov/calenviroscreen/indicator/poverty
[9] Ibid.
[10] Ibid.
[11] OEHHA SB 535 Census Tracts https://oehha.ca.gov/calenviroscreen/sb535
[12] https://www.irwindaleca.gov/DocumentCenter/View/38/General-Plan?bidId=

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the City's General Plan in its analysis, is not accounted for in the General Plan growth projections, and is beyond the 2020 horizon year analyzed in the General Plan EIR. O2-5 cont.

Table 6-1: Allowable Uses within Appendix B: Irwindale Gateway Specific Plan lists several use classifications that are not accounted for within the other areas of the EIR's analysis. For example, the IGSP permits the development of "Self-storage/public" personal storage facilities and "Shipping/parcel delivery hub or sorting center" warehouse facilities. These use classifications generate vehicle trips that are much greater than the ITE Land Use Code 150: Warehousing classification utilized for analysis in areas including Air Quality, Greenhouse Gas Emissions, and Energy. For example, ITE Land Use Code 150: Warehousing generates 0.18 vehicle trips per peak hour while ITE Land Use Code 151: Mini-Warehouse generates 1.68 vehicle trips per peak hour per 100 storage units and ITE Land Use Code 156: High-Cube Parcel Hub Warehouse generates 0.64 vehicle trips per peak hour[13]. The EIR must be revised to account for and model all land uses permitted by the IGSP in order to provide an adequate and accurate environmental analysis. O2-6

Further, it must be noted that the project requires approval of a General Plan Amendment to change the land use designation from Regional Commercial to Specific Plan and a Zone Change from M-2 (Heavy Manufacturing) to Irwindale Gateway Specific Plan in order to proceed. However, the General Plan does not have "Specific Plan" as an existing Land Use designation. "Specific Plan" is not listed in Table 2-7: Land Use Designations and Development Standards or seen on Exhibit 2-3: City of Irwindale Land Use Plan – Base Land Use Designations within the City's General Plan. The "Specific Plan" land use designation does not exist in the General Plan and therefore cannot be applied to the proposed project. The EIR must be revised to include the creation of a new land use designation titled "Specific Plan" within the General Plan as part of the Project Description and revise all environmental analysis to include this request.
Table 5.9-1 SCAG 2020-2045 RTP/SCS Goals Consistency Analysis concludes that the project is consistent with the goals of Connect SoCal, resulting in less than significant impacts. In finding consistency with SCAG's goals, the EIR does not provide any meaningful evidence to support this conclusion, in violation of CEQA's requirements for meaningful disclosure. For example, the EIR concludes the project is consistent with Goal 5 to reduce greenhouse gas emissions because, "the proposed project would be consistent with regulatory schemes and policies adopted to reduce GHG emissions and includes project features that would encourage alternative transportation (such as walking) that would reduce GHG emissions," which is directly in contrast with the EIR's determination that the project will result in significant and unavoidable GHG emissions impacts. There is no meaningful evidence to support the efficacy of the project's improvements (sidewalks) on increased walking instead of driving associated with the project. Due to errors in modeling and modeling without supporting evidence, as noted throughout this comment letter and attachments, and the EIR's determination that the project will have significant and unavoidable impacts to Air Quality and Greenhouse Gas Emissions, the proposed project is directly inconsistent with Goal 5 to reduce greenhouse gas emissions and improve air quality, Goal 6 to support healthy and equitable communities, and Goal 7 to adapt to a changing climate. The EIR must be revised to remove misleading and erroneous analysis and include a finding of significance due to inconsistency with the RTP/SCS. Additionally, since the project requires a GPA/Zone Change to proceed, it was clearly not included in SCAG's projections and modeling for the RTP/SCS and is inconsistent with the document for this reason as well. O2-7

The Project requires a General Plan Land Use amendment and Zoning designation change to change the Project site s land use designations from Regional Commercial to Specific Plan. The EIR concludes that the project will not result in any significant impacts and is consistent with the General Plan because, "Development pursuant to the Specific Plan would be consistent with the O2-8

[13] https://www.phoenixoregon.gov/wp-content/uploads/2023/08/ITE-SDC-Table_SOTE.pdf

applicable plans, goals, policies, and regulations of the General Plan and zoning code, *as amended*." The EIR relies upon approval of the GPA/Zone Change itself to ensure consistency with these documents. Relying upon approval of the requested GPA/Zone Change to determine there will be no environmental impacts circumvents the required process of CEQA analysis. Significant and unavoidable cumulatively considerable impacts to Air Quality and Greenhouse Gas Emissions will occur as a result of the GPA/Zone Change, and this is not presented for discussion or analysis in this section. The EIR is inadequate as an informational document and must be revised. This is vital as Table 5.9-2 General Plan Consistency Analysis and includes misleading consistency analysis with General Plan goals, policies and objectives adopted with the purpose of avoiding or mitigating an environmental effect. For example, the EIR states the project complies with Resource Management Element Policy 11: O2-8 cont.

"The City of Irwindale supports the ethic of conservation of non-renewable resources. This includes efforts to reduce the use of energy (in any form), greenhouse gas (GHG) emissions (consistent with AB 32) and efforts to find new and more energy efficient methods for delivering services."

The EIR finds the project is consistent with this policy even though the project will have a Significant and Unavoidable Cumulatively Considerable Impact with regards to GHG emissions because, "Development within the Specific Plan would be required to comply with the California Green Building Standards Code (CALGreen) and incorporate additional sustainable design features that minimize water use and maximize energy efficiency. Refer to the mitigation measures recommended in Section 5.2, Air Quality, and Section 5.6, Greenhouse Gas Emissions." Notably, the mitigation measures for Air Quality and GHG are not able to mitigate impacts to less than significant levels, and compliance with CALGreen does not address these issues either. The EIR continues by stating that, "Further, through redevelopment of a former quarry/inert landfill site that has been depleted of recoverable mineral resources to a productive employment-generating end use." This is not a complete sentence and does not provide any meaningful evidence to support consistency with the above policy. The EIR also states that, "Development of Option 2, including the BESS, would be expected to further help facilitate renewable energy within the region. The proposed project would be consistent with this policy." The EIR does not provide any quantified meaningful evidence to support the uncertain claim that the potential BESS facility "would be expected" to facilitate renewable energy. The EIR must be revised to remove this misleading consistency analysis and include a finding of significance due to inconsistency with this policy. O2-9

Further, the Resource Management Element of the General Plan provides the following guidance for the reuse of quarry lands:

"Many of the pits are located in close proximity to freeways. These areas are subject to intense development pressure because such land is scarce. As a result, the General Plan has designated a number of these pits as Regional Commercial to capitalize on these factors as a means to generate revenue for the City and serve the regional population." O2-10

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The project requires a General Plan Amendment to change the land use designation from Regional Commercial to Specific Plan and the EIR has not addressed this portion of the RME. The EIR has also not provided any analysis of the proposed project's General Plan Amendment and Zoning Change. The EIR must be revised to include this analysis, including analysis with the above guidance for the reuse of quarry lands.

O2-10 cont.

The EIR provides several other instances of erroneous and misleading consistency analysis. For example, in determining consistency with "CDE Policy 3: The City of Irwindale will continue to ensure that the type, location, and intensity of all new development and intensified developments adhere to the requirements that are specified for their particular land use category in the General Plan," the EIR reasons that, "The General Plan states that the Regional Commercial designation '. . . encourages a balanced mix of commercial, office professional, and *light manufacturing* uses along a number of high visibility traffic corridors . . .' (Irwindale 2020). Implementation of the proposed Irwindale Gateway Specific Plan would provide for *Industrial/Business Park* land uses consistent with the General Plan's vision for the subject property as an employment-generating and economic investment generating use." However, the proposed project is not consistent with the General Plan vision specific to quarry sites for redevelopment as a Regional Commercial designation. The EIR continues by stating that, "The proposed project requires a General Plan Amendment to change the site's existing General Plan land use designations from "Regional Commercial" to "Specific Plan" to reflect the land uses, development standards, design guidelines and implementation procedures proposed in the Irwindale Gateway Specific Plan. As such, the proposed project would be consistent with this policy." Again, the EIR relies upon approval of the GPA/Zone Change itself to conclude the project is consistent with the policy. Relying upon approval of the requested GPA/Zone Change to determine there will be no environmental impacts circumvents the required process of CEQA analysis. Significant and unavoidable cumulatively considerable impacts to Air Quality and Greenhouse Gas Emissions will occur as a result of the GPA/Zone Change, and this is not presented for discussion or analysis in this section.

O2-11

The EIR concludes the project is consistent with "IE Policy 1: The City will continue to support the efforts of the City of Irwindale Public Works Department in maintaining the highest service standards feasible," because "The proposed project would improve roadways and public utilities/infrastructure in a logical sequence in conjunction with future development of the Irwindale Gateway Specific Plan and as required by the City of Irwindale and applicable public service providers." However, the EIR has not provided any information or analysis here regarding the City's LOS standards and requirements of the General Plan. The General Plan states the following on this topic:

"The City of Irwindale has established LOS "D" as a target LOS standard and LOS "E" as a threshold standard. The City recognizes that not all intersections within the City can meet the target LOS D. In these instances, the City Council must find that the improvements necessary to meet the target LOS D are not feasible because of one or more of the following reasons: 1) the cost of the necessary improvements exceeds available funding sources; 2) the design of the necessary improvements is not compatible with the surrounding land uses; or, 3) the design of the necessary improvements is contrary to other established City policies. For individual roadway segments, a LOS C standard is used to monitor capacity needs." Appendix L2: Traffic Impact Analysis concludes that the following intersections will operate at LOS E in the Horizon Year (2040) With Project conditions for Project Option 1 and 2:

O2-12

1. Intersection #2. Live Oak Avenue and Speedway Drive – PM Peak Hour (LOS E)
2. Intersection #12. Arrow Highway and Rivergrade Road – AM Peak Hour (LOS E)
3. Intersection #13. Arrow Highway and San Gabriel Trail – AM Peak Hour (LOS E)
4. Intersection #18. Arrow Highway and Avenida Barbosa/Spanish Oak Drive – AM Peak Hour (LOS E)

The EIR has not provided any information or analysis related to the required findings that the improvements necessary to meet the target LOS D are not feasible. Additionally, Appendix L2 identifies the following study roadway segments in Table 4-3: Baseline Roadway Segment Level of Service:

1. Arrow Highway east of Live Oak Ave
2. Live Oak Ave between Arrow Highway and I-605 (east side)
3. Arrow Highway between Arrow Highway and I-605 (east side)
4. Live Oak Ave between Arrow Highway and I-605 (west side)
5. Arrow Highway between Arrow Highway and I-605 (west side)
6. Arrow Highway west of Live Oak Ave

However, the EIR nor Appendix L2 provide any quantified analysis of the proposed project's impacts on the study roadway segments or how the project will or will not meet the City's LOS C standard for roadway segments. A revised EIR must be prepared to include the LOS analysis as cumulatively considerable significant impact as the project conflicts with Transportation Impact Threshold T-1 and Land Use and Planning Impact Threshold 5.9-2 because it is not consistent with the following General Plan requirement: O2-12 cont.

1. The City of Irwindale has established LOS "D" as a target LOS standard and LOS "E" as a threshold standard. The City recognizes that not all intersections within the City can meet the target LOS D. In these instances, the City Council must find that the improvements necessary to meet the target LOS D are not feasible because of one or more of the following reasons: 1) the cost of the necessary improvements exceeds available funding sources; 2) the design of the necessary improvements is not compatible with the surrounding land uses; or, 3) the design of the necessary improvements is contrary to other established City policies. For individual roadway segments, a LOS C standard is used to monitor capacity needs

The EIR concludes that the project is consistent with the Policy, "The City of Irwindale will consider environmental justice issues as they are related to potential health impact associated with air pollution and ensure that all land use decisions, including enforcement actions, are made in an equitable fashion to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location from the health effects of air pollution," because, "The proposed project would complement existing and planned surrounding land uses in Irwindale and adjacent cities. The Irwindale Gateway Specific Plan is in an area of Irwindale that is already developed as an industrial/ commercial area, containing landfills, distribution warehousing, e-commerce, and light industrial land uses. The City of Irwindale has applied all feasible mitigation to the proposed Irwindale Gateway Specific Plan project to minimize air quality and related health effects. These requirements are similarly and uniformly applied to other projects in the city which could cumulatively combine to result in significant, adverse impacts." This conclusion does not address environmental justice issues within the project's census tract and adjacent census tracts. The project requires a GPA/Zone Change to be implemented, and implementation of the project will result in significant and unavoidable cumulatively considerable Air Quality and Greenhouse Gas Emissions impacts within an SB 535 Disadvantaged Community. The project site's census tract (6037404600) and the census tracts adjacent to the project site (6037404501 (east), 6037404402 (east), 6037405002 (south) and 6037405001 (south)) are identified as SB 535 Disadvantaged Communities[14]. This indicates that cumulative impacts of development and environmental impacts in the immediate vicinity are disproportionately impacting this community. The negative environmental, health, and quality of life impacts resulting from a saturation of the warehousing and logistics industry in the community have become distinctly inequitable. The negative environmental impacts associated with project implementation will continue to degrade the already poor O2-13

[14] OEHHA SB 535 Census Tracts https://oehha.ca.gov/calenviroscreen/sb535

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environmental quality of the project census tract. The EIR must be revised to include a finding of significance due to inconsistency with this policy.

The EIR has not provided an analysis of the proposed project in accordance with all applicable General Plan policies. The EIR is inadequate as an informational document and a revised EIR must be prepared with an accurate consistency analysis with all General Plan goals/policies, including the following:

1. Community Development Element Policy 8. The City of Irwindale will promote and support the development of a regional commercial center.
2. Community Development Element Policy 9 The City of Irwindale will strive to ensure that future development, supported in whole or part through redevelopment, is fiscally sound.
3. Community Development Element Policy 17. The City of Irwindale will continue to encourage a balance of commercial uses to avoid an overconcentration of uses to best serve the residents, employee population, and business community.

O2-13 cont

**5.13 Transportation**

Table 6-1: Allowable Uses within Appendix B: Irwindale Gateway Specific Plan lists several use classifications that are not accounted for within the other areas of the EIR's analysis. For example, the IGSP permits the development of "Self-storage/public" personal storage facilities and "Shipping/parcel delivery hub or sorting center" warehouse facilities. These use classifications generate vehicle trips that are much greater than the ITE Land Use Code 150: Warehousing classification utilized for analysis in areas including Air Quality, Greenhouse Gas Emissions, and Energy. For example, ITE Land Use Code 150: Warehousing generates 0.18 vehicle trips per peak hour while ITE Land Use Code 151: Mini-Warehouse generates 1.68 vehicle trips per peak hour per 100 storage units and ITE Land Use Code 156: High-Cube Parcel Hub Warehouse generates 0.64 vehicle trips per peak hour[15]. The EIR must be revised to account for and model all land uses permitted by the IGSP to provide an adequate and accurate environmental analysis.

O2-14

The EIR has not provided adequate information or analysis here regarding the City's LOS standards and requirements of the General Plan. The General Plan states the following on this topic:

"The City of Irwindale has established LOS "D" as a target LOS standard and LOS "E" as a threshold standard. The City recognizes that not all intersections within the City can meet the target LOS D. In these instances, the City Council must find that the improvements necessary to meet the target LOS D are not feasible because of one or more of the following reasons: 1) the cost of the necessary improvements exceeds available funding sources; 2) the design of the necessary improvements is not compatible with the surrounding land uses; or, 3) the design of the necessary improvements is contrary to other established City policies. For individual roadway segments, a LOS C standard is used to monitor capacity needs." Appendix L2: Traffic Impact Analysis concludes that the following intersections will operate at LOS E in the Horizon Year (2040) With Project conditions for Project Option 1 and 2:

1. Intersection #2. Live Oak Avenue and Speedway Drive – PM Peak Hour (LOS E)
2. Intersection #12. Arrow Highway and Rivergrade Road – AM Peak Hour (LOS E)
3. Intersection #13. Arrow Highway and San Gabriel Trail – AM Peak Hour (LOS E)
4. Intersection #18. Arrow Highway and Avenida Barbosa/Spanish Oak Drive – AM Peak Hour (LOS E)

O2-15

The EIR has not provided any information or analysis related to the required findings that the improvements necessary to meet the target LOS D are not feasible. Additionally, Appendix L2 identifies the following study roadway segments in Table 4-3: Baseline Roadway Segment Level of Service:

[15] https://www.phoenixoregon.gov/wp-content/uploads/2023/08/ITE-SDC-Table_SOTE.pdf

1. Arrow Highway east of Live Oak Ave
2. Live Oak Ave between Arrow Highway and I-605 (east side)
3. Arrow Highway between Arrow Highway and I-605 (east side)
4. Live Oak Ave between Arrow Highway and I-605 (west side)
5. Arrow Highway between Arrow Highway and I-605 (west side)
6. Arrow Highway west of Live Oak Ave

However, the EIR nor Appendix L2 provide any quantified analysis of the proposed project's impacts on the study roadway segments or how the project will or will not meet the City's LOS C standard for roadway segments. A revised EIR must be prepared to include the LOS analysis as cumulatively considerable significant impact as the project conflicts with Transportation Impact Threshold T-1 and Land Use and Planning Impact Threshold 5.9-2 because it is not consistent with the following General Plan requirement:

O2-15 cont.

1. The City of Irwindale has established LOS "D" as a target LOS standard and LOS "E" as a threshold standard. The City recognizes that not all intersections within the City can meet the target LOS D. In these instances, the City Council must find that the improvements necessary to meet the target LOS D are not feasible because of one or more of the following reasons: 1) the cost of the necessary improvements exceeds available funding sources; 2) the design of the necessary improvements is not compatible with the surrounding land uses; or, 3) the design of the necessary improvements is contrary to other established City policies. For individual roadway segments, a LOS C standard is used to monitor capacity needs

Table 5.13-1 Project VMT Characteristics concludes that Development Options 1 and 2 will generate 20.8 VMT per employee, which exceeds the threshold average of 18.5 VMT per employee. The proposed project's Employment-Based VMT exceeds the applicable threshold and as a result are determined to have significant transportation impacts. The EIR provides MM T-1 and T-2 to allegedly mitigate impacts to less than significant levels (18.4 VMT per employee):

O2-16

"T-1 The applicant shall coordinate with Foothill Transit and the City of Irwindale to install a bus stop at Live Oak Avenue and Live Oak Lane for the Foothill Transit Line 492. The design and installation of the bus stop shall be coordinated with Foothill Transit and shall be paid for by the project applicant. The bus stop shall be constructed prior to the issuance of a Certificate of Occupancy for the first development project on the project site.

T-2 The applicant shall modify the public sidewalk and landscaping along the north side of the portion of Live Oak Avenue that abuts the project site to include accommodation of a Class IV trail consistent with the City of Irwindale Active Transportation Plan to create a portion of the connection to the San Gabriel River Trail. Prior to the issuance of grading plans, the applicant shall submit the required improvement plans for the Class IV trail to the City of Irwindale's Public Works Department for review and approval."

Notably, the EIR has not provided meaningful evidence to support the conclusion that MM T-1 and T-2 will reduce VMT to 18.4 VMT per employee. MM T-1 and T-2 are unenforceable mitigation in violation of CEQA § 21081.6 (b). It is not possible for the City to ensure that MM T-1 and T-2 will result in reduced

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VMT by project employees and be implemented continuously, at all times, throughout the life of the project and maintain a VMT reduction to less than significant levels at all times. This is especially notable as MM T-1 relies upon bus service for a bus stop that does not yet exist and is not planned to have any bus service from the service provider. The efficacy of the proposed mitigation measures and reduction of VMT impacts below the applicable thresholds cannot be assured, and the project's VMT impact is therefore considered significant and unavoidable. A revised EIR must be prepared to include a finding of significance because there is no possible assurance of the percentage of project employees that would utilize non-automobile or non-single occupant vehicle travel associated with the mitigation measures and mitigation of the project's VMT impact to less than significant is not feasible.

O2-16 cont.

Further, the EIR has underreported the quantity of VMT generated by the proposed project operations. The operational nature of industrial/warehouse uses involves high rates of truck/trailer/delivery van VMT due to traveling from large import hubs to regional distribution centers to smaller industrial parks and then to their final delivery destinations. Once employees arrive at work at the proposed project, they will conduct their jobs by driving delivery vans across the region as part of the daily operations as a warehouse, which will drastically increase project-generated VMT. The project's truck/trailer and delivery van activity are unable to utilize public transit or active transportation and it is misleading to the public and decision makers to exclude this activity from VMT analysis. The project's total operational VMT generated is further inconsistent with the significance threshold and legislative intent of SB 743 to reduce greenhouse gas emissions by reducing VMT. A revised EIR must be prepared to reflect a quantified VMT analysis that includes all truck/trailer and delivery van activity.

O2-17

The EIR has not adequately analyzed the project's potential to substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses; or the project's potential to result in inadequate emergency access. There are no exhibits adequately depicting the available maneuvering and queuing space for trucks/trailers at the intersection of the project driveways and the adjacent streets. For example, Figure 3-10a - Conceptual Circulation Plan Option 1 depicts three access points for trucks/trailers on Live Oak Lane, and there is no modeling to demonstrate whether the streets and driveway widths provide adequate maneuvering space for trucks/trailers entering and exiting the site. The EIR also excludes any exhibits adequately depicting the available maneuvering and queueing space for trucks/trailers throughout the project site. There are several areas that demonstrate potential conflicts between passenger vehicles and trucks/trailers. For example, the driveway between Buildings 2 and 3 provides access to both passenger vehicles and trucks/trailers, with circulation occurring from multiple turning points for both types of vehicles; the same is true for the truck/trailer driveway for Building 1. Additionally, the truck/trailer loading dock courts for all three buildings include truck/trailer parking stalls within the court. These parking stalls may be in use at any time and conflict with truck/trailer maneuvering, increase the necessary queuing area, and increase idling times, which contribute to increased mobile source emissions. The truck/trailer loading dock courts for all three buildings are designed as "dead end" courts that require dedicated turnaround area for truck/trailers to maneuver, and this has not been presented for analysis. There also appears to be a 40' driveway/gate between Building 2 and 1, but it is not depicted to be utilized for any circulation. The EIR must be revised to depict the type of vehicular access utilized at this driveway.

O2-18

Brandi Jones
June 24, 2024
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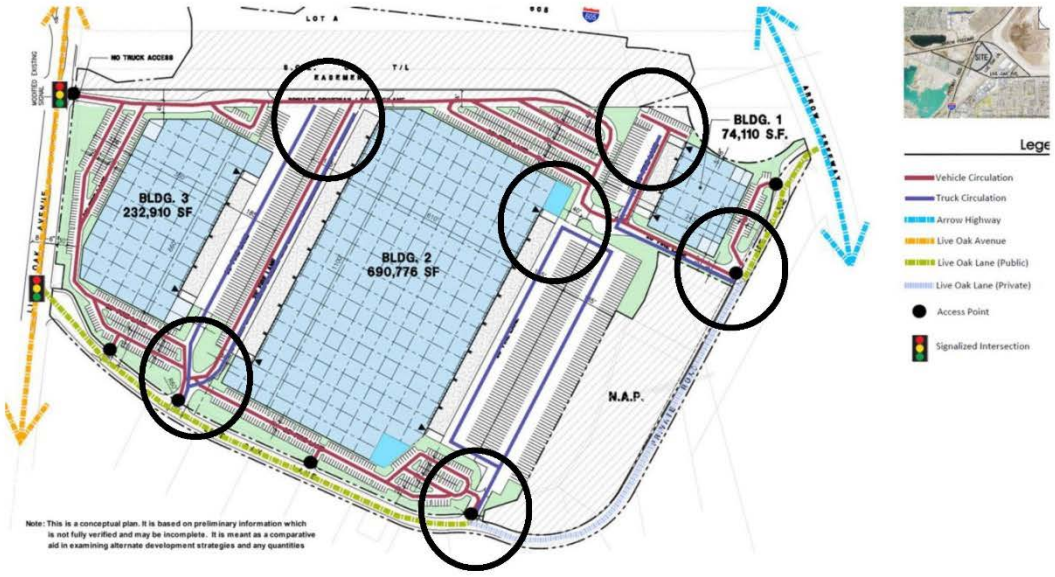


The EIR states here that, "Design and construction of the proposed access and circulation improvements would be required to adhere to the City's engineering standards and LACFD's design standards, which are imposed on development projects during the City's development review and building plan check process. Consistent with the Specific Plan, prior to the issuance of building permits for development projects in the project site that involve a driveway connection point on Live Oak Avenue, the project applicant shall submit a driveway access study to the Irwindale Public Works Department for City review and approval. The study shall be prepared by a licensed traffic engineer, identify the proposed access driveway(s) connecting to a public street, and include a detailed evaluation of the proposed driveway for intersection lane geometrics, turn lane storage capacity, and sight distance. The City shall require that the driveway intersection be constructed in accordance with the City-approved access study prior to the issuance of a Certificate of Occupancy for any building that would use the driveway for ingress/egress." Deferring this environmental analysis required by CEQA to the construction permitting phase is improper mitigation and does not comply with CEQA's requirement for meaningful disclosure and adequate informational documents. Excluding the driveway study from public review does not comply with CEQA's requirements for adequate informational documents and meaningful disclosure (CEQA § 15150 (f)). The EIR must be revised to include a complete driveway analysis and address all issues listed above in order to provide an adequate and accurate environmental analysis. O2-18 cont

There are also no exhibits depicting emergency vehicle access. The EIR states that, "During the development review and building plan check process, the City would coordinate with LACFD to ensure O2-19

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that the necessary fire prevention and emergency response features are incorporated into development accommodated by the Specific Plan and that adequate circulation and access (e.g., adequate turning radii for fire trucks, road surfacing requirements, minimum road widths, vertical clearance, gate access etc.) are provided in the traffic and circulation components. All site and building improvements would be subject to review and approval by the City and LACFD." Deferring this environmental analysis required by CEQA to the construction permitting phase is improper mitigation and does not comply with CEQA's requirement for meaningful disclosure and adequate informational documents (CEQA § 15150 (f)). A revised EIR must be prepared for the proposed project with truck turning exhibits and emergency access exhibits and associated analysis in order to provide an adequate and accurate environmental analysis.

O2-19 cont.

Additionally, the EIR has not provided any analysis of the available horizontal and vertical sight distance at the intersection of the project driveways and adjacent streets. Sight distance is the continuous length of street ahead visible to the driver. At unsignalized intersections, corner sight distance must provide a substantially clear line of sight between the driver of the vehicle waiting on the minor road (driveway) and the driver of an approaching vehicle. A revised EIR must be prepared with a sight distance analysis based on the American Association of State Highway and Transportation Officials (AASHTO) Stopping Sight Distance requirements.

**8.3 Impacts Found Not to be Significant: Population and Housing**

The EIR sources the U.S. Green Building Council for employment generation rates, but this is not appropriate as it is a nationwide data source. SCAG provides local data that accurately represents employment generation for the project site. SCAG's Employment Density Study[16] provides the following applicable employment generation rates for Los Angeles County:

Warehouse: 1 employee per 1,518 square feet
Office: 1 employee per 319 square feet

Applying this ratio results in the following calculation:

O2-20

Option 1
Warehouse: 954,796 sf / 1,518 = 629 employees
Office: 43,000 sf / 319 = 135 employees
Total: 764 employees

Option 2
Warehouse: 668,070 sf / 1,518 = 441 employees
Office: 36,000 sf / 319 = 113 employees
Total: 554 employees

Utilizing SCAG's Employment Density Study ratios, the proposed project will generate 764 employees for Option 1 (worst-case scenario). The EIR utilizes uncertain language and does not provide any meaningful analysis or supporting evidence to substantiate the conclusion that there will be no significant impact to population and housing. The EIR states that "The new jobs generated by the Specific Plan would provide

[16] https://www.mwcog.org/file.aspx?A=QTTITR24POOOUIw5mPNzK8F4d8djdJe4LF9Exj6lXOU%3D

additional employment opportunities for residents in the *area*," and the geographic boundaries of the "area" are undefined, and relying on the entire labor force within all of Los Angeles County to fill the project's construction and operational jobs will increase VMT and emissions during all phases of construction and operations and a revised EIR must be prepared to account for longer worker trip distances. In order to comply with CEQA's requirements for meaningful disclosure and adequate informational documents, a revised EIR must be prepared to provide demographic and geographic information on the location of qualified workers to fill the project's operational and construction positions.

SCAG's Connect SoCal Demographics and Growth Forecast[17] notes that the City will add 1,400 jobs between 2016 - 2045. Utilizing SCAG's Employment Density Study calculation of 764 employees, the project represents 54.5% of the City's employment growth from 2016 - 2045. A single project accounting for more than half of the projected employment growth over 29 years represents a significant amount of growth. Additionally, since the project requires a GPA/Zone Change to proceed, it was clearly not included in SCAG's projections and modeling for the RTP/SCS and therefore represents a 54.5% increase in growth beyond SCAG's projections.

A revised EIR must be prepared to include this analysis, and also provide a cumulative analysis discussion of projects approved since 2016 (SCAG), 2008 (General Plan adoption), and projects "in the pipeline" to fully disclose the project's significant and unavoidable impacts to Population and Housing. For example, other recent industrial projects such as 5175 Vincent Avenue (360 employees), The Park @ Live Oak (919 employees), and 5010 Azusa Canyon/Irwindale Industrial Center (192 employees) combined with the proposed project will cumulatively generate 2,235 employees, which is 159% of the City's employment growth forecast over 29 years accounted for by only four industrial projects submitted since 2019. This exceeds the projected growth forecast for the City. This number increases exponentially when the City's commercial development activity and other projects since 2016 are added to the calculation. A revised EIR must be prepared to include a cumulative analysis on this topic to provide an adequate and accurate environmental analysis.

O2-20 cont.

The EIR also states that, "population growth typically occurs when there is an expansion of residential development, and therefore an increase of new residents. As the Regional Housing Needs Assessment (RHNA) calculated for 2021-2029 has accounted for the housing need in Irwindale and the surrounding cities based on the forecast of 20,300 jobs by 2020, any new growth in population associated with the proposed project would not exceed housing assumptions from the RHNA." This statement does not provide any meaningful information or analysis, such as the RHNA for the City or surrounding cities, the wages provided by the operational and construction jobs, and available housing supply that is affordable to the project's operational and construction employees. Notably, the City's Housing Element has not been certified by HCD and therefore the City has not accounted for its RHNA[18] and the EIR must be revised to include a finding of significance as the proposed project will exceed growth forecasts of the City's General Plan and SCAG.

[17] https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal_demographics-and-growth-forecast.pdf?1606001579
[18] https://www.hcd.ca.gov/planning-and-community-development/housing-open-data-tools/housing-element-review-and-compliance-report

# 2. Response to Comments

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**9.0 Significant Irreversible Changes due to the Proposed Project and 10.0 Growth-Inducing Impacts of the Proposed Project**

The EIR states that, "The Specific Plan would require the approval of discretionary actions; however, the proposed project would not set a precedent for future projects with similar characteristics." This is misleading to the public and decision makers. The EIR must be revised to include a finding of significance as the required GPA/Zone Change to implement the project will result in significant and unavoidable cumulatively considerable impacts to Air Quality and GHG emissions within an SB 535 Disadvantaged Community, and approval of the proposed project will set precedent for approval of other projects with SU impacts within Disadvantaged Communities. Additionally, the General Plan does not have "Specific Plan" as an existing Land Use designation. "Specific Plan" is not listed in Table 2-7: Land Use Designations and Development Standards or seen on Exhibit 2-3: City of Irwindale Land Use Plan – Base Land Use Designations within the City's General Plan. The "Specific Plan" land use designation does not exist in the General Plan and therefore cannot be applied to the proposed project. The EIR must be revised to include the creation of a new land use designation titled "Specific Plan" within the General Plan as part of the Project Description and revise all environmental analysis to include this request. Creation of a new land use designation is precedent-setting action that will encourage and facilitate other activities that could significantly affect the environment.

Further, since the project requires a GPA/Zone Change to proceed, the project will contribute to growth that was not included as part of growth forecasts in Connect SoCal and/or the General Plan. It must be noted that the horizon year of the City's General Plan is 2020[19]. Any development beyond year 2020 is not accounted for or analyzed by the City's current General Plan and its EIR. The project is proposed four years after the horizon year of the General Plan and therefore is not accounted for in its growth projections or environmental analysis. The EIR is inadequate as an informational document since the horizon year of the General Plan has passed and it has not provided a cumulative analysis of all development projects approved since the date of General Plan adoption in 2008. A revised EIR must be prepared to include this information for analysis to adequately and accurately analyze all potentially significant environmental impacts. A finding of significance must be included because the project tiers from the City's General Plan in its analysis, is not accounted for in the General Plan growth projections and is beyond the 2020 horizon year analyzed in the General Plan EIR. O2-21

The EIR must also include a cumulative analysis discussion here to demonstrate the impact of the proposed project in a cumulative setting. For example, other recent industrial projects such as 5175 Vincent Avenue (360 employees), The Park @ Live Oak (919 employees), and 5010 Azusa Canyon/Irwindale Industrial Center (192 employees) combined with the proposed project will cumulatively generate 2,235 employees, which is 159% of the City's employment growth forecast over 29 years accounted for by only four industrial projects submitted since 2019. This exceeds the projected growth forecast for the City. This number increases exponentially when the City's commercial development activity and other projects since 2016 are added to the calculation. A revised EIR must be prepared to include a cumulative analysis on this topic to provide an adequate and accurate environmental analysis.

Further, the EIR must be revised to discuss and analyze that implementation of the project will result in significant and unavoidable cumulatively considerable environmental impacts to Air Quality and Greenhouse Gas Emissions with the project census tract and adjacent census tracts (all of which are designated as SB 535 Disadvantaged Communities) receiving the most significant

[19] https://www.irwindaleca.gov/DocumentCenter/View/38/General-Plan?bidId=

impacts. Project implementation will result in growth that does not comply with the AQMP and will have additional environmental impacts that cannot be mitigated. These significant and irreversible environmental changes and growth inducement caused by the project necessitate a finding of significance in this section.

O2-21 cont.

**Conclusion**

For the foregoing reasons, GSEJA believes the EIR is flawed and a revised EIR must be prepared for the proposed project and circulated for public review. Golden State Environmental Justice Alliance requests to be added to the public interest list regarding any subsequent environmental documents, public notices, public hearings, and notices of determination for this project. Send all communications to Golden State Environmental Justice Alliance P.O. Box 79222 Corona, CA 92877.

O2-22

Sincerely,

Gary Ho
Blum, Collins & Ho LLP

Attachments:
1. SWAPE Technical Analysis

# 2. Response to Comments

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**O2 Response to Comments from Blum, Collins, & Ho, LLP, Gary Ho, on behalf of Golden State Environmental Justice Alliance, dated June 24, 2024**

O2-1 This Comment summarizes the features of the proposed project. Responses to specific issues raised in this comment letter are provided in the responses to Comments O2-2 through O2-22 below.

O2-2 The commenter asserts that the DEIR does not adequately describe or analyze the "whole of the action" of the proposed project as required by CEQA. The commenter contends that the DEIR "piecemeals" a portion of the overall project that it inappropriately excludes analysis of the active reclamation and mass grading of the project site.

As noted in the comment, "The Project Description explicitly states that, "This phase is not a part of the proposed project and is not analyzed in this Draft EIR." As referenced in this comment and in DEIR Section 3.3.1.1, *Project Background*, the Operations Plan for site reclamation has been approved by the Regional Water Quality Control Board, the rough grading plan was approved by the County of Los Angeles Department of Public Works and a grading permit was issued by the City of Irwindale. As substantiated with the documents in DEIR Appendix C, the reclamation of the project site has already been approved. This activity is already entitled and underway. It no longer requires discretionary approval, and therefore, is not a "project" as defined by CEQA. The DEIR appropriately defines the baseline conditions for analysis of the proposed development as the rough graded site per the Operations Plan.

O2-3 Specific Plans are not in and of themselves a type of land use, and the General Plan need not be amended to identify a specific plan that has not been adopted. Adoption of the Irwindale Gateway Specific Plan is a legislative act similar to adoption of a General Plan or Zoning Ordinance. (Gov. Code §65450 et seq.) Specific plans function as the regulatory tool through which the City may systematically implement its General Plan for all or part of the area covered by the General Plan. (Gov. Code § 65450.) Specific Plans regulate land use by designating the distribution, location, and extent of the uses of land within the area covered by the plan. (Gov. Code § 65451.) The Irwindale Gateway Specific Plan sets forth the distribution, location and land uses for the area designated (see Draft EIR, Appendix B, *Irwindale Gateway Specific Plan,* Chapter 4, *Land Use*, and Chapter 6, *Development Standards*).. The General Plan Amendment will reflect the change in land use designation from Regional Commercial to Irwindale Gateway Specific Plan, and the Zone Change will reflect the change in land use designation from M-2 (Heavy Manufacturing) to Irwindale Gateway Specific Plan. No additional analysis is needed.

O2-4 This comment details CalEPA's CalEnviroScreen findings for surrounding census tracts related to pollution and socioeconomic vulnerability. The comment concludes that "a revised EIR must be prepared to include the specific analysis of each environmental impact (including the significant and unavoidable cumulatively considerable. Air quality

and GHG impacts on Disadvantaged Communities, including cumulative analysis and irreversible environmental effects".

The California State Legislature passed Senate Bill (SB) 1000 into law in 2016, requiring local governments to identify environmental justice communities (called "disadvantaged communities") in their jurisdictions and address EJ in their general plans. The law requires the inclusion of an EJ element when a lead agency is updating two or more General Plan elements. CEQA is generally concerned with physical environmental impacts of a particular project and does not focus on the social impacts. The Draft EIR does provide the context for physical impacts on surrounding communities. It provides an overview of the CalEnviroScreen (CES) information in the Environmental Setting in Section 4.4.5.2 *Air Quality and Climate*. This section also includes Figure 4.2, *Pollution Burden Score Map,* which depicts the surrounding census tracts. The map shows that the surrounding areas exceed the 75 percent threshold used to define disadvantaged communities (Environmental Justice communities).

The DEIR includes a detailed, quantified analysis of project- and cumulative-level AQ and GHG impacts in Sections 5.2 and 5.6, respectively. As noted above, however, Environmental Justice, and the specific impact on disadvantaged impacts, however, is not a CEQA requirement. Additionally, South Coast Air Quality Management District (South Coast AQMD) has not defined significance thresholds directly pertaining to environmental justice impacts. However, the air quality issues evaluated in Chapter 5.2, *Air Quality*, of the Draft EIR are relevant to the discussion regarding environmental justice issues. For example, Impact 5.2-3 evaluate potential project-related construction phase and operation phase localized impacts, respectively, that are associated with criteria air pollutants and toxic air contaminants to offsite sensitive receptors. Furthermore, as noted in Section 5.2.5, *Cumulative Impacts*, on pages 5.2-47 through 5.2-48, the EIR considered the project's incremental effect on health risk in light of the elevated background risk identified in the Multiple Air Toxics Exposure Study (MATES) V and cumulative approved and pending projects in the vicinity of the project site. When the proposed project's health risks are considered in combination with cumulative projects, the proposed project would cumulatively contribute to significant health impacts in the air basin, and the air pollutant emissions associated with the proposed project would be cumulatively considerable. Therefore, the EIR considered cumulative health risk impacts in light of the pollution burden of the surrounding community and considered mitigation measures to reduce the proposed project's cumulative impact.

The commenter incorrectly assumes the purpose of Title 24 and California Energy Commission approved software programs. The approved programs serve the purpose of being used under the performance approach (energy budget) method of compliance for the 2022 Energy Standards. The programs mentioned are not utilized for CEQA analysis. CalEEMod, the California Emissions Estimator Model, is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land

use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The model was developed for the California Air Pollution Officers Association (CAPCOA) in collaboration with the California Air Districts. Energy calculations provided by CalEEMod are prepared for purposes of a CEQA-level analysis and are not to be relied on or used to show compliance with the 2022 Building Energy Efficiency Standards. Additionally, per CalEEMod methodology, default CalEEMod energy rates are not based on current Building Energy Efficiency Standards, but are based on year 2019 consumption estimates generally compiled from a survey of existing buildings that may range from complying with older Building Energy Efficiency Standards to buildings that predate adoption of the Building Energy Efficiency Standards (e.g., prior to 1978).[19] Thus, default CalEEMod energy rates are generally considered to be more conservative than any energy rates that may be derived from more recent and the latest Building Energy Efficiency Standards.

O2-5 The commenter incorrectly claims that this Draft EIR tiers from the City of Irwindale 2020 General Plan EIR. This EIR does not tier from the analysis of the 2020 General Plan EIR and analyzes the impacts of the proposed project when compared to the baseline conditions of the project site after implementation of the Nu-Way Live Oak Reclamation Operations Plan (see Section 3.3.1.1, *Project Background*, Chapter 3, *Project Description,* of the Draft EIR). As discussed in Section 4.5, *Assumptions Regarding Cumulative Impacts*, in Chapter 4, *Environmental Setting*, of the Draft EIR, the approach to the cumulative analysis throughout the Draft EIR varies within each topical section, but no sections rely on the projections within 2020 General Plan to assess cumulative impacts.

For instance, in compliance with CEQA Guidelines Section 15130(b)(1)(A), some topical sections utilize a list of past, present and probable future projects that have the potential to produce impacts that could compound with those of the proposed project to evaluate cumulative impacts. As described in Section 4.5 of Chapter 4 in the Draft EIR, the City has determined that other projects within a two-mile radius of the project site are within a reasonable distance to consider in conjunction with the proposed project for the evaluation of cumulative impacts. These projects are shown in Tables 4-1, *City of Irwindale Approved and Pending Projects Within Two Miles of the Proposed Project*, and Table 4-2, *Cumulative Projects Within Two Miles of the Proposed Project in Surrounding Jurisdictions*, in the Draft EIR. The projects listed in these tables represent the known pending or approved projects within a two-mile of the project site; however, each topical section defines a different geographic scope of analysis that is applicable and appropriate for the specific resource. Some of these geographic scopes are larger or smaller than the two-mile radius defined in Chapter 4, and therefore the cumulative analyses of these sections may include projects

[19] California Air Pollution Control Officer's Association (CAPCOA). 2022, April. CalEEMod, Appendix D, California Emissions Estimator Model User Guide, Version 2022.1.1.13. Prepared by: ICF in collaboration with Sacramento Metropolitan Air Quality Management District. https://www.caleemod.com/user-guide.

that are not listed in Tables 4-1 and 4-2. Topical sections that utilized the list of projects in Tables 4-1 and 4-2 within their evaluation of cumulative impacts include aesthetics, air quality, cultural resources, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, public serves, transportation and traffic, tribal cultural resources, and utilities and service systems.

Other impact areas within these same topical sections of the Draft EIR, in addition to the other sections not mentioned above, utilize projections contained adopted local, regional or statewide plan, or related planning document, in compliance with CEQA Guidelines Section 15130(b)(1)(B). For example, while the approach to analyzing cumulative health risk impacts utilizes the list of pending or approved projects in Tables 4-1 and 4-2, the approach to analyzing cumulative impacts from criteria air pollutants utilizes South Coast AQMD's significance thresholds for construction and operational criteria air pollutants. Projects that exceed these thresholds are considered to cumulatively contribute to the nonattainment status of the air basin and therefore obstruct implementation of the South Coast AQMD Air Quality Management Plan (AQMP). In addition to measuring the emission of the proposed project to the South Coast AQMD thresholds, a project would also be considered to obstruct the AQMP if it would exceed the demographic projections of the Southern California Association of Government's (SCAG's) Regional Transportation/Sustainable Communities Strategy (RTP/SCS), since the AQMP emissions inventory is based on these projections. Section 5.15.2, *Water Supply and Distribution Systems*, in Section 5.15, *Utilities and Service Systems*, of the Draft EIR, evaluates the cumulative impacts of the proposed project on water supply based on the projections for demand and supply published within the Valley County Water District's Urban Water Management Plan.

Additionally, while the cumulative analysis for land use and planning impacts evaluates the project's consistency with the 2020 General Plan and other relevant planning documents, this analysis focuses on the project's consistency with applicable General Plan policies and not the projections within the General Plan. As described in Section 8.3, *Population and Housing*, in Chapter 8, *Impacts Found Not to Be Significant*, the impacts to population growth resulting from the proposed project were determined by comparing the number of jobs created by the proposed project to the number of jobs forecasted in the SCAG RTP/SCS for the City. It is assumed that all jobs under the proposed projects would be new jobs in the City that were not previously accounted for within the City's General Plan or the SCAG RTP/SCS. However, under existing conditions (using 2020 data), the jobs from the proposed project when added to the number of existing jobs in the City, would not exceed the SCAG projections for the City's jobs in 2020 or 2035.

O2-6 The analysis did not model all land uses permitted, it utilized an appropriate and conservative analysis of the expected project conditions based on the information at the time of preparation. As part of the development of assumptions used to estimate future trip generation from the project site the ITE land use code of 150 was determined to be

the most appropriate estimate of future potential land uses. It has a higher rate of generation as compared to ITE code 155 for Fulfillment Centers which was indicated as a potential use on the project site. High-Cube Parcel Hub Warehouse (ITE code 156) has fewer samples and a higher standard deviation (variation) in trip generation values as compared to ITE code 150.

O2-7 Please see Response O2-3 regarding the acceptable designation of Specific Plan for the project site under the proposed project.

The commenter asserts that the DEIR's consistency finding with SCAG's 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is not substantiated. The City disagrees. As noted by the commenter, the consistency discussion in Table 5.9-1 clearly discloses that the project would result in significant and unavoidable impacts to Air Quality and Greenhouse Gas emissions. The proposed project is not required to result in less than significant impacts to be consistent with the RTP/SCS goals. The DEIR analysis employs the appropriate modeling tools and inputs (see Responses O2-4 through O2-6). Note also that the VMT analysis assumes more reduction measures than specified in MM T-1 and T-2. The modeling incorporates the reduction measures required by the City's TDM ordinance (see Response O1-3). Please see Response O2-5 relative to the comment regarding consistency with the RTP/SCS population projections.

O2-8 Consistency with Resource Management Element Policy 11 is addressed within Table 5.9-2, General Plan Consistency Analysis as follows:

> Consistent. Development within the Specific Plan would be required to comply with the California Green Building Standards Code (CALGreen) and incorporate additional sustainable design features that minimize water use and maximize energy efficiency. Refer to the mitigation measures recommended in Section 5.2, Air Quality, and Section 5.6, Greenhouse Gas Emissions. Further, through redevelopment of a former quarry/inert landfill site that has been depleted of recoverable mineral resources to a productive employment-generating end use. Development of Option 2, including the BESS, would be expected to further help facilitate renewable energy within the region. The proposed project would be consistent with this policy.

The commenter does not explain why they believe this substantiation to be inadequate. Option 2, in particular, would facilitate renewable energy in the region. The project applicant ran the annual production of the proposed BESS facility through the EPA's Greenhouse Gas Equivalencies Calculator[20] and the result is that the BESS would off-set 407,997 metric tons of carbon dioxide equivalent on an annual basis. The logic here is

[20] Greenhouse Gas Equivalencies Calculator | US EPA

that the BESS would replace a fossil fuel plant, which would emit the 407,997 tons of carbon dioxide equivalent on an annual basis.

O2-9 When an individual battery energy storage system (BESS) facility or generation infrastructure (i.e., solar panels) comes online in California, it is typically included in the Integrated resource Plan (IRP)[21] through a process known as the Interconnection Queue. The Interconnection Queue is an application process that functions as a waiting list of proposed electricity generation and storage projects that are seeking to connect to the grid and is managed by the California Independent System Operation (CAISO), which oversees the operation of the State's electricity grid. Once a BESS facility or generation infrastructure is approved by CAISO, it is assigned a point of interconnection on the grid, and its output is added to the IRP as a resource that can provide electricity and other grid services, such as frequency regulation or ramping support. The facility is then dispatched by CAISO based on its bids into the day-ahead and real-time electricity markets, and its output is used to help balance supply and demand on the grid in real-time. As stated on pages 5.4-9, an interconnection facility would be developed at the SCE Rio Hondo substation across Live Oak Avenue to connect the proposed battery storage system to the electric grid. Once a BESS facility or generation infrastructure is approved by CAISO, it is assigned a point of interconnection on the grid, and its output is added to the IRP as a resource that can provide electricity and other grid services, such as frequency regulation or ramping support. The facility is then dispatched by CAISO based on its bids into the day-ahead and real-time electricity markets, and its output is used to help balance supply and demand on the grid in real-time. Overall, as stated on pages 5.4-13 and 5.4-14 of the Draft EIR, the proposed battery energy storage system (BESS) facility would provide storage capacity for excess electricity generated for use at a later time. Thus, the proposed BESS facility would allow for more use of intermittent renewable energy sources and would generally support further increasing renewable energy usage.

In general, commenter is correct in that the proposed project would result in significant and unavoidable GHG emissions impacts. However, the primary focus of Resource Management Element Policy 11 is regarding conservation of non-renewable resources.

> **RME Policy 11**. The City of Irwindale supports the ethic of conservation of non-renewable resources. This includes efforts to reduce the use of energy (in any form), greenhouse gas (GHG) emissions (consistent with AB 32) and efforts to find new and more energy efficient methods for delivering services. The City supports the development of building standards that enable the community to design energy saving features such as solar energy systems, water efficient landscaping, and sustainable, green, and energy efficient building standards.

[21] The IRP is developed by CAISO and is a coordinated grid management plan to integrate the generation and storage capacities of load serving entities.

> While compliance with CALGreen and implementation of mitigation (e.g., Mitigation Measures GHG-1, GHG-2, and GHG-3) would not mitigate project GHG emissions impacts to a less than significant level, they would generally help contribute towards energy conservation achieved through energy efficiency and renewable energy usage over energy from non-renewable sources.

Regarding the statement, 'Further, through redevelopment of a former quarry/inert landfill site that has been depleted of recoverable mineral resources to a productive employment-generating end use', in Table 5.9-2 of the Draft EIR, this sentence was included in error has been removed (see Chapter 3, *Revisions to the Draft EIR*, of this Final EIR).

O2-10 This comment asserts that the DEIR analysis should further analyze the proposed General Plan Amendment and Zoning Change, particularly with the respect to the General Plan's objective to capitalize on the project site's proximity to freeways and revenue producing potential of a regional commercial development. DEIR Chapter 7, Project Alternatives, reviews project alternatives considered and rejected from further analysis. Section 7.2.2, Alternative Land Use, reviews the potential for this project site to be developed in accordance with the site's Regional Commercial designation. It cites a market analysis conducted by The Concord Group in 2022 (included as DEIR Appendix N) that concludes that a large-scale, anchored format, retail use is neither market no financially feasible. Similarly, this DEIR section summarizes the reasons that The Concord Group analysis and CBRE Group, Inc. report, support the infeasibility of a hotel or office use at this site, respectively.

02-11 The commenter asserts that DEIR incorrectly finds the proposed project consistent with General Plan CDE Policy 3 because it does not carry out the General Plan's vision for quarry site re-use and because the project would require a General Plan Amendment (GPA). Please refer to response O2-10 regarding the feasibility of developing the project site with a commercial use.

The commenter correctly notes that the project relies on a GPA and zone change to find consistency with this policy. General Plans are not static. Lead agencies rely on GPAs to update project site land use designations and have specific processes to accomplish the changes to the General Plan. The applicant for this project has complied with this process for the City of Irwindale, and the DEIR accordingly evaluates the potential land uses associated with the new land use designation and proposed project.

Further, this commenter is incorrect in stating that the significant and unavoidable air quality and GHG impacts "will occur as a result of the GPA/Zone change". The potential, relative environmental impacts of development consistent with existing Regional Commercial (RC) designation are evaluated in Chapter 7, Project Alternatives. The analysis concludes that air quality and GHG impacts would be greater under the RC

land uses (which would likely entail greater building square footages) than the proposed project.

Please see Response 02-12 regarding consistency with the City's LOS standards.

O2-12 This comment describes the City of Irwindale General Plan's LOS standards and contends that "A revised EIR must be prepared to include the LOS analysis as a cumulatively considerable significant impact …". In Section 5.13.1.1, *Transportation, Regulatory Background,* the Draft EIR clearly explains that pursuant to SB 743 (2013) and the subsequent CEQA Guidelines update certified by the Secretary of the Natural Resources Agency in December 2018, that *automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestions, is no longer considered a significant impact on the environment* [emphasis added]. LOS is no longer a CEQA issue. Since July 1, 2020, lead agencies are required to consider VMT as the metric for determining transportation impacts under CEQA. The relationship of the City's General Plan Infrastructure Element and LOS requirements is further described under the Impact to Roadway Facilities subheading under DEIR Impact 5.13-1. As explained, the City of Irwindale still implements LOS standards under its local regulatory land use and public works authority. The full Traffic Impact Assessment in Appendix L2 provides this analysis.

The OPR site further clarifies the relationship to GP LOS standards and CEQA under its FAQ section[22]:

> **Does SB 743 impact general plans that contain LOS standards?**
>
> SB 743 "does not preclude the application of local general plan policies, zoning codes, conditions of approval, thresholds, or any other planning requirements pursuant to the police power or any other authority." (See Pub. Resources Code, § 21099(b)(4).) However, OPR has previously provided guidance on why LOS standards should not be included within general plans. (See OPR's General Plan Guidelines, Appendix B .)
>
> Even if a general plan contains an LOS standard and a project is found to exceed that standard, that conflict should not be analyzed under CEQA. CEQA is focused on planning conflicts that lead to environmental impacts. (*The Highway 68 Coalition v. County of Monterey* (2017) 14 Cal.App.5th 883; see, e.g., Appendix G, IX(b) [asking whether the project will "Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?"].) Auto delay, on its own, is no longer an environmental impact under CEQA. (See Pub. Resources Code, § 21099(b)(2).)

O2-13 The commenter suggests the proposed project is inconsistent with the General Plan Policy requiring the City to consider environmental justice issues as they relate to potential health impacts associated with air pollution (Resource Management Element (RME) Policy 19). As explained in Response O2-4, CEQA does not require Environmental Justice analyses. Contrary to this commenter's opinion, an evaluation specifically for the project's census tract and adjacent census tracts is not the purview of CEQA. Also as described in

[22] https://opr.ca.gov/ceqa/sb-743/faq.html

Response O2-4, the DEIR does analyze the potential air quality impacts and related health impacts. The DEIR also documents all feasible mitigation to minimize air quality and related health effects.

This comment also requests that a revised EIR be prepared that includes the analysis of three specific Community Development Element (CDE) policies (CDE 8, 9 and 17). Each of these policies relate to the economic objectives for development. As included in DEIR section 5.9.2 *Thresholds of Significance,* the CEQA significance threshold for evaluation of General Plan policy consistency identifies a significant effect on the environment if the project would:

> LU-2 Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation **adopted for the purpose of avoiding or mitigating an environmental effect.** [emphasis added]

The GP policies as listed in this comment have not been adopted to avoid or mitigate and environmental effect, and as such, they do not need to be evaluated in the EIR.

O2-14 See response to Comment O2-6. The ITE land use code of 150 was determined to be the most appropriate estimate of future potential land uses and has a higher rate of generation as compared to ITE code 155 for Fulfillment Centers which was indicated as a potential use on the project site.

O2-15 As noted in **Section 15064.3** of the **CEQA** Guidelines - Determining the Significance of Transportation Impacts (a) explicitly states "a project's effect on automobile delay shall not constitute a significant environmental impact." Therefore, consistency with the City's level of service standards is not a part of the proposed project's CEQA transportation assessment.

O2-16 The mitigation calculation was conducted using the San Gabriel Valley Council of Governments Vehicle Miles Traveled Evaluation Tool, as shown in Appendix L1a to the Draft EIR.

O2-17 The significance determination was based on the auto and light duty truck VMT as directed by Title 14 Section 15064(a) and therefore appropriate mitigation measures were developed based on the vehicle classes included in the significance determination analysis. Heavy Duty truck VMT is analyzed as part of the air quality, greenhouse gas, and noise analysis sections.

O2-18 The analysis is adequate to the level of assessment required for the environmental document. Final site development plans are reviewed as part of the lead agency's development review process. This review was not conducted since the relevant plans are not final as part of the environmental review process and therefore has no reporting to incorporate into the EIR per Title 14 § 15150 (f)).

# 2. Response to Comments

O2-19 Detailed sight design is not included in the EIR, however the City's process to determine site access through the development review process is cited as the action to address emergency vehicle access. Similarly, site distance on public roadways is a component of development review. This review was not conducted since the relevant plans are not final as part of the environmental review process and therefore has no reporting to incorporate into the EIR per Title 14 Section 15150 (f)).

O2-20 The City disagrees with the commenter's assertion that the Draft EIR's source for deriving employee generation rates is inappropriate and what the commenter defines as "not a nationwide data source". This source utilizes methodology and data developed by widely recognized sources including the Institute of Transportation Engineers, U.S. Department of Energy, and the San Diego Association of Governments. Furthermore, this source has been utilized in numerous other environmental documents to estimate the employee generation including within the City of Irwindale, City of Los Angeles, and City/County of San Francisco.[23]

Employees for the construction and operation of the proposed project are assumed to be residents of the City, as is implied by the discussion of impacts to the *City's* population in Impact POP-1 on page 8-7 of the Draft EIR. While not all employees of the proposed project may be residents of the City of Irwindale, this assumption is supported by the current unemployment rate in the City which is estimated by the California Employment Development Department to be 4.6 percent in May of 2024.[24] As such, it can be assumed that there are potential employees within the City that would fill these positions. Furthermore, the residences of future employees cannot be determined at this time; the proposed project includes adoption of a Specific Plan and associated land use changes and is not expected to be operational until late 2027. There is also no requirement under CEQA to geographically locate potential future employees or residents for any proposed development projects.

While the proposed project would generate a substantial number jobs, the analysis in the Draft EIR substantiates that when added to the number of existing jobs in the City, the jobs from the proposed project do not exceed SCAG's projections for the City in 2035

[23] See the following documents:
Los Angeles, City of. 2017. Sapphire Project Draft Environmental Impact Report (State Clearinghouse # 2016031029). https://planning.lacity.gov/eir/Sapphire/deir/Sapphire%20Project%20Draft%20EIR.html
San Francisco Planning Department. 2017, October. Notice of Preparation of a Draft EIR, 500 Turk Street Project. https://sfplanning.s3.amazonaws.com/sfmea/2016-010340ENV_NOP-IS.pdf
Irwindale, City of. 2019, August. 13131 Los Angeles Street Industrial Project (State Clearinghouse # 2019080276). https://files.ceqanet.opr.ca.gov/254608-3/attachment/ZsCl_lTrL2HJcv6CiT1FvEKpneH872XCWuokerClWQpQW3XGMMz-H3bX_ezPGhtksCBuE2cTZXZa46Np0

[24] California Employment Development Department. 2024, May. Unemployment Rate and Labor Force Data for Cities and Sub-County Places. https://labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html

and 2050[25], as seen in the discussion of Impact POP-1 in Chapter 8 of the Draft EIR. The impacts associated with the proposed project, including cumulatively-considerable impacts, were fully evaluated and disclosed by the Draft EIR, and where necessary mitigation measures were identified to reduce the proposed project's impacts to the maximum feasible extent. Furthermore, this Comment does not otherwise claim that the employment growth contributed by the proposed project would result in a significant environmental effect.

O2-21 The majority of the individual comments made in this comment regarding Significant Irreversible Changes due to the Proposed Project and Growth Inducing Impacts of the Proposed Project have been stated in previous comments. Following is a reference to the responses to those comments:

- Air Quality and GHG impacts to disadvantaged communities. Please refer to Response O2-4.
- Requirement for General Plan land use designation of Specific Plan. Please refer to Response O2-3.
- Use of City's General Plan with 2020 Horizon Year for cumulative analyses. Please refer to Response O2-5.

This comment also asserts that a revised EIR is required to demonstrate the impact of the proposed project in a cumulative setting. Specifically, the commenter states that the proposed project combined with other recently approved industrial projects would cumulatively generate 2,235 employees which is 159% of the City's employment growth forecast over 29 years for only four projects. The commenter does not state the source of the City's forecast which would be 1,405 employees (based on the 159%). The DEIR addresses population, housing and employment projections in Chapter 8, *Impacts Founds Not to be Significant*. As noted in that chapter, SCAG forecasts the City of Irwindale would have 20,300 jobs by 2020 and 21,000 jobs by 2035[26]. However, as of 2020, the City has only 15,229 jobs.[27] The 2,235 total employment noted by the commenter for the industrial projects since 2019 would be accommodated within that growth (21,000-15,229=5,771).

DEIR Chapter 10, *Growth Inducing Impacts of the Proposed Project,* responds to the criteria outlined by CEQA to examine way in which a proposed project could foster economic

[25] SCAG projects that the City will have 21,000 jobs in 2035 and 21,500 jobs in 2050. Southern California Association of Governments (SCAG). 2020. 2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction. https://scag.ca.gov/sites/main/files/file-attachments/2016_2040rtpscs_finalgrowthforecastbyjurisdiction.pdf?1605576071

[26] SCAG projects that the City will have 21,000 jobs in 2035 and 21,500 jobs in 2050. Southern California Association of Governments (SCAG). 2020. 2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction. https://scag.ca.gov/sites/main/files/file-attachments/2016_2040rtpscs_finalgrowthforecastbyjurisdiction.pdf?1605576071

[27] US Census Bureau. 2023, August 1 (accessed). Origin-Destination Employment Statistics, Work Area Profile Analysis, Irwindale, CA, 2020. https://onthemap.ces.census.gov/

population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. These questions facilitated consideration of the overall cumulative setting and related potential impacts. The review substantiates the reasons why the project would not result in significant, growth-inducing impacts.

O2-22 The responses above address this commenter's concerns regarding the adequacy of the DEIR. None of the clarification in the responses or revisions to the DEIR as included in Chapter 3 of this Final EIR trigger the requirements for recirculation of the DEIR for further public comment under CEQA Guidelines Section 15088.5. None of this new material indicates that the project will result in a significant new environmental impact not previously disclosed in the DEIR. Additionally, none of this material indicates that there would be a substantial increase in the severity of a previously identified environmental impact that will not be mitigated, or that there would be any of the other circumstances requiring recirculation described in Section 15088.5.

As requested, the City will add Golden State environmental Justice Alliance to the public interest list to receive future notices regarding the proposed Irwindale Gateway Specific Plan project.

LETTER O2A – SWAPE, Matt Hagemann, P.G., C.Hg. and Paul Rosenfeld, PhD (20 pages)

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June 20, 2024

Gary Ho
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**Subject: Comments on the Irwindale Gateway Specific Plan Draft EIR Project (SCH No. 2023020290)**

Dear Mr. Ho,

We have reviewed the May 2024 Draft Environmental Impact Report ("DEIR") for the Irwindale Gateway Specific Plan ("Project") located in the City of Irwindale ("City"). The Project proposes to construct either of two options: Option 1 proposes to construct 954,796-square-feet ("SF") of warehouse space, 43,000-SF of office space, and 1,264 parking spaces; Option 2 proposes to construct 668,070-SF of warehouse space, 36,000-SF of office space, 874 parking spaces, and a 15.94 acre-Battery Energy Storage System ("BESS") on the 52.65-acre site. O2A-1

Our review concludes that the DEIR fails to adequately evaluate the Project's air quality, health risk, and greenhouse gas impacts. As a result, emissions and health risk impacts associated with construction and operation of the proposed Project may be underestimated and inadequately addressed. A revised Environmental Impact Report ("EIR") should be prepared to adequately assess and mitigate the potential air quality, health risk, and greenhouse gas ("GHG") impacts that the project may have on the environment.

## Air Quality

### Failure to Provide Complete CalEEMod Output Files

Land use development projects under the California Environmental Quality Act ("CEQA") typically evaluate air quality impacts and calculate potential criteria air pollutant emissions using the California O2A-2

# 2. Response to Comments

Emissions Estimator Model ("CalEEMod").[1] CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but CEQA requires that such changes be justified by substantial evidence. Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files disclose to the reader what parameters are used in calculating the Project's air pollutant emissions and demonstrate which default values are changed. Justifications are provided for the selected values.

According to the Air Quality and Greenhouse Gas Analysis ("AQ & GHG Analysis"), provided as Appendix D1 to the DEIR, CalEEMod Version 2022.1 is relied upon to estimate Project emissions (DEIR, 5.2-23). However, this poses a problem, as the currently available version of CalEEMod 2022.1 is described as a "soft release" which fails to provide complete output files.[2] Specifically, the "User Changes to Default Data" table no longer provides the quantitative counterparts to the changes to the default values (see excerpt below) (Appendix D1, pp. 143, 148, 154, 158, 162, 165, 168, 172, 175):

O2A-2 cont'd

| 8. User Changes to Default Data | |
|---|---|
| Screen | Justification |
| Characteristics: Project Details | |
| Characteristics: Utility Information | 2021 SCE Sustainability Report |
| Construction: Construction Phases | based on the construction schedule provided by the applicant |
| Construction: Off-Road Equipment | Building 1 Trenching, Buildings 2 and 3 Trenching, and Finishing/Landscaping equipment based on equipment mix approved by Applicant |
| Construction: Trips and VMT | see assumptions file for water truck trips calculations |
| Land Use | modified lot acreage adjusted to account for multiple stories |
| Construction: Architectural Coatings | SCAQMD Rule 1113. Parking area only accounts for parking lots to be striped |
| Construction: Electricity | 2021 SCE Sustainability Report |

However, previous CalEEMod Versions, such as 2020.4.0, include the specific numeric changes to the model's default values (see example excerpt below):

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 230.00 | 167.00 |
| tblConstructionPhase | PhaseEndDate | 11/22/2023 | 8/25/2023 |
| tblConstructionPhase | PhaseEndDate | 9/27/2023 | 6/30/2023 |
| tblConstructionPhase | PhaseEndDate | 10/25/2023 | 7/28/2023 |
| tblConstructionPhase | PhaseStartDate | 10/26/2023 | 7/29/2023 |
| tblConstructionPhase | PhaseStartDate | 9/28/2023 | 7/1/2023 |
| tblLandUse | LandUseSquareFeet | 160,000.00 | 160,371.00 |
| tblLandUse | LandUseSquareFeet | 119,000.00 | 41,155.00 |
| tblLandUse | LotAcreage | 3.67 | 3.68 |
| tblLandUse | LotAcreage | 2.73 | 2.74 |

[1] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide.
[2] "CalEEMod California Emissions Estimator Model Soft Release." California Air Pollution Control Officers Association (CAPCOA), 2022, *available at:* https://caleemod.com/.

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The output files associated with CalEEMod Version 2022.1 fail to present the exact parameters used to calculate Project emissions. To remedy this issue, the DEIR should have provided access to the model's ".JSON" output files, which allow third parties to review the model's revised input parameters.[3] Without access to the complete output files, including the specific numeric changes to the default values, we cannot verify that the DEIR's air modeling and subsequent analysis is an accurate reflection of the proposed Project. As a result, a revised EIR should be prepared to include an updated air quality analysis that correctly provides the complete output files for CalEEMod Version 2022.1, or includes an updated air model using an older release of CalEEMod.[4]

O2A-2 cont'd

## Unsubstantiated Input Parameters Used to Estimate Project Emissions

As previously discussed, the DEIR relies on CalEEMod Version 2022.1 to estimate the Project's air quality emissions and fails to provide the complete output files required to adequately evaluate model's analysis (p. 5.2-24). Regardless, when reviewing the Project's CalEEMod output files, provided in the AQ & GHG Analysis, we were able to identify several model inputs that are inconsistent with information disclosed in the DEIR. As such, the Project's construction and operational emissions may be underestimated. A revised EIR should be prepared to include an updated air quality analysis that adequately evaluates the impacts that construction and operation of the Project will have on local and regional air quality.

O2A-3

### *Incorrect Application of Tier 4 Final Mitigation*

Review of the CalEEMod output files demonstrates that the "Irwindale Gateway Project Construction (Option 1)" and "Irwindale Gateway Project Construction (Option 2)" models include several changes to the default individual construction phase lengths (see excerpt below) (Appendix D1, pp. 134, 143).

8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Characteristics: Project Details | |
| Characteristics: Utility Information | 2021 SCE Sustainability Report |
| Construction: Construction Phases | based on the construction schedule provided by the applicant |
| Construction: Off-Road Equipment | Building 1 Trenching, Buildings 2 and 3 Trenching, and Finishing/Landscaping equipment based on equipment mix approved by Applicant |
| Construction: Trips and VMT | see assumptions file for water truck trips calculations |
| Land Use | modified lot acreage adjusted to account for multiple stories |
| Construction: Architectural Coatings | SCAQMD Rule 1113. Parking area only accounts for parking lots to be striped |
| Construction: Electricity | 2021 SCE Sustainability Report |

O2A-4

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[5] According to the "User Entered Comments & Non-Default Data" table, the justification provided for the changes included in the changes is:

[3] "Video Tutorials for CalEEMod Version 2022.1." California Air Pollution Control Officers Association (CAPCOA), May 2022, *available at:* https://www.caleemod.com/tutorials.
[4] "CalEEMod Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* http://www.aqmd.gov/caleemod/download-model.
[5] "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1, 14.

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# 2. Response to Comments

"Building 1 Trenching, Buildings 2 and 3 Trenching, and Finishing/Landscaping equipment based on equipment mix approved by Applicant" (Appendix D1, pp. 134, 143).

As a result, the "Irwindale Gateway Project Construction (Option 1)" model assumes that some of the Project's off-road construction equipment fleet would meet Tier 4 Final emissions standards (see excerpt below) (Appendix D1, pp. 132, 148, 153, 157).

5.2.2. Mitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Option 1 Rough Grading | Excavators | Diesel | Tier 4 Final | 2 | 8 | 36 | 0.38 |
| Option 1 Rough Grading | Graders | Diesel | Tier 4 Final | 1 | 8 | 148 | 0.41 |
| Option 1 Rough Grading | Rubber Tired Dozers | Diesel | Tier 4 Final | 1 | 8 | 367 | 0.4 |
| Option 1 Rough Grading | Scrapers | Diesel | Tier 4 Final | 2 | 8 | 423 | 0.48 |
| Option 1 Rough Grading | Tractors/Loaders/Backhoes | Diesel | Tier 4 Final | 2 | 8 | 84 | 0.37 |
| Option 1 Fine Grading | Excavators | Diesel | Tier 4 Final | 2 | 8 | 36 | 0.38 |
| Option 1 Fine Grading | Graders | Diesel | Tier 4 Final | 1 | 8 | 148 | 0.41 |
| Option 1 Fine Grading | Rubber Tired Dozers | Diesel | Tier 4 Final | 1 | 8 | 367 | 0.4 |
| Option 1 Fine Grading | Scrapers | Diesel | Tier 4 Final | 2 | 8 | 423 | 0.48 |
| Option 1 Fine Grading | Tractors/Loaders/Backhoes | Diesel | Tier 4 Final | 2 | 8 | 84 | 0.37 |
| Option 1 Building 1 Construction | Cranes | Diesel | Tier 4 Final | 1 | 7 | 367 | 0.29 |
| Option 1 Building 1 Construction | Forklifts | Diesel | Tier 4 Final | 3 | 8 | 82 | 0.2 |
| Option 1 Building 1 Construction | Generator Sets | Diesel | Average | 1 | 8 | 14 | 0.74 |
| Option 1 Building 1 Construction | Tractors/Loaders/Backhoes | Diesel | Tier 4 Final | 3 | 7 | 84 | 0.37 |
| Option 1 Building 1 Construction | Welders | Diesel | Tier 4 Final | 1 | 8 | 46 | 0.45 |
| Option 1 Buildings 2 and 3 Construction | Cranes | Diesel | Tier 4 Final | 1 | 7 | 367 | 0.29 |
| Option 1 Buildings 2 and 3 Construction | Forklifts | Diesel | Tier 4 Final | 3 | 8 | 82 | 0.2 |
| Option 1 Buildings 2 and 3 Construction | Generator Sets | Diesel | Average | 1 | 8 | 14 | 0.74 |
| Option 1 Buildings 2 and 3 Construction | Tractors/Loaders/Backhoes | Diesel | Tier 4 Final | 3 | 7 | 84 | 0.37 |
| Option 1 Buildings 2 and 3 Construction | Welders | Diesel | Tier 4 Final | 1 | 8 | 46 | 0.45 |
| Option 1 Building 1 Paving | Pavers | Diesel | Tier 4 Final | 2 | 8 | 81 | 0.42 |
| Option 1 Building 1 Paving | Paving Equipment | Diesel | Tier 4 Final | 2 | 8 | 89 | 0.36 |
| Option 1 Building 1 Paving | Rollers | Diesel | Tier 4 Final | 2 | 8 | 36 | 0.38 |
| Option 1 Building 1 Architectural Coating | Air Compressors | Diesel | Tier 4 Final | 1 | 6 | 37 | 0.48 |
| Option 1 Buildings 2 and 3 Architectural Coating | Air Compressors | Diesel | Tier 4 Final | 1 | 6 | 37 | 0.48 |
| Option 1 Building 1 Utility Trenching | Cranes | Diesel | Tier 4 Final | 1 | 8 | 367 | 0.29 |
| Option 1 Building 1 Utility Trenching | Crawler Tractors | Diesel | Tier 4 Final | 1 | 8 | 87 | 0.43 |
| Option 1 Building 1 Utility Trenching | Excavators | Diesel | Tier 4 Final | 2 | 8 | 36 | 0.38 |
| Option 1 Building 1 Utility Trenching | Off-Highway Trucks | Diesel | Tier 4 Final | 1 | 8 | 376 | 0.38 |
| Option 1 Building 1 Utility Trenching | Rubber Tired Loaders | Diesel | Tier 4 Final | 1 | 8 | 150 | 0.36 |
| Option 1 Buildings 2 and 3 Utility Trenching | Cranes | Diesel | Tier 4 Final | 1 | 8 | 367 | 0.29 |
| Option 1 Buildings 2 and 3 Utility Trenching | Crawler Tractors | Diesel | Tier 4 Final | 1 | 8 | 87 | 0.43 |
| Option 1 Buildings 2 and 3 Utility Trenching | Excavators | Diesel | Tier 4 Final | 2 | 8 | 36 | 0.38 |
| Option 1 Buildings 2 and 3 Utility Trenching | Off-Highway Trucks | Diesel | Tier 4 Final | 1 | 8 | 376 | 0.38 |

O2A-4 cont'd

Additionally, the "Irwindale Gateway Project Construction (Option 2)" model assumes that some of the Project's off-road construction equipment fleet would meet Tier 4 Interim emissions standards (see excerpt below) (Appendix D1, pp. 142).

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5.2.2. Mitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Option 2 Rough Grading | Excavators | Diesel | Tier 4 Interim | 2 | 8 | 36 | 0.38 |
| Option 2 Rough Grading | Graders | Diesel | Tier 4 Interim | 1 | 8 | 148 | 0.41 |
| Option 2 Rough Grading | Rubber Tired Dozers | Diesel | Tier 4 Interim | 1 | 8 | 367 | 0.4 |
| Option 2 Rough Grading | Scrapers | Diesel | Tier 4 Interim | 2 | 8 | 423 | 0.48 |
| Option 2 Rough Grading | Tractors/Loaders/Backhoes | Diesel | Tier 4 Interim | 2 | 8 | 84 | 0.37 |
| Option 2 Fine Grading | Excavators | Diesel | Tier 4 Interim | 2 | 8 | 36 | 0.38 |
| Option 2 Fine Grading | Graders | Diesel | Tier 4 Interim | 1 | 8 | 148 | 0.41 |
| Option 2 Fine Grading | Rubber Tired Dozers | Diesel | Tier 4 Interim | 1 | 8 | 367 | 0.4 |
| Option 2 Fine Grading | Scrapers | Diesel | Tier 4 Interim | 2 | 8 | 423 | 0.48 |
| Option 2 Fine Grading | Tractors/Loaders/Backhoes | Diesel | Tier 4 Interim | 2 | 8 | 84 | 0.37 |
| Option 2 BESS Construction | Cranes | Diesel | Tier 4 Interim | 1 | 7 | 367 | 0.29 |
| Option 2 BESS Construction | Forklifts | Diesel | Tier 4 Interim | 3 | 8 | 82 | 0.2 |
| Option 2 BESS Construction | Generator Sets | Diesel | Average | 1 | 8 | 14 | 0.74 |
| Option 2 BESS Construction | Tractors/Loaders/Backhoes | Diesel | Tier 4 Interim | 3 | 7 | 84 | 0.37 |
| Option 2 BESS Construction | Welders | Diesel | Tier 4 Interim | 1 | 8 | 46 | 0.45 |
| Option 2 Buildings 1 and 2 Construction | Cranes | Diesel | Tier 4 Interim | 1 | 7 | 367 | 0.29 |
| Option 2 Buildings 1 and 2 Construction | Forklifts | Diesel | Tier 4 Interim | 3 | 8 | 82 | 0.2 |
| Option 2 Buildings 1 and 2 Construction | Generator Sets | Diesel | Average | 1 | 8 | 14 | 0.74 |
| Option 2 Buildings 1 and 2 Construction | Tractors/Loaders/Backhoes | Diesel | Tier 4 Interim | 3 | 7 | 84 | 0.37 |
| Option 2 Buildings 1 and 2 Construction | Welders | Diesel | Tier 4 Interim | 1 | 8 | 46 | 0.45 |
| Option 2 BESS Site Paving | Pavers | Diesel | Tier 4 Interim | 2 | 8 | 81 | 0.42 |
| Option 2 BESS Site Paving | Paving Equipment | Diesel | Tier 4 Interim | 2 | 8 | 89 | 0.36 |
| Option 2 BESS Site Paving | Rollers | Diesel | Tier 4 Interim | 2 | 8 | 36 | 0.38 |
| Option 2 Buildings 1 and 2 Architectural Coating | Air Compressors | Diesel | Tier 4 Interim | 1 | 6 | 37 | 0.48 |
| Option 2 BESS Site Utility Trenching | Cranes | Diesel | Tier 4 Interim | 1 | 8 | 367 | 0.29 |
| Option 2 BESS Site Utility Trenching | Crawler Tractors | Diesel | Tier 4 Interim | 1 | 8 | 87 | 0.43 |
| Option 2 BESS Site Utility Trenching | Excavators | Diesel | Tier 4 Interim | 2 | 8 | 36 | 0.38 |
| Option 2 BESS Site Utility Trenching | Off-Highway Trucks | Diesel | Tier 4 Interim | 1 | 8 | 376 | 0.38 |
| Option 2 BESS Site Utility Trenching | Rubber Tired Loaders | Diesel | Tier 4 Interim | 1 | 8 | 150 | 0.36 |
| Option 2 Buildings 1 and 2 Utility Trenching | Cranes | Diesel | Tier 4 Interim | 1 | 8 | 367 | 0.29 |
| Option 2 Buildings 1 and 2 Utility Trenching | Crawler Tractors | Diesel | Tier 4 Interim | 1 | 8 | 87 | 0.43 |
| Option 2 Buildings 1 and 2 Utility Trenching | Excavators | Diesel | Tier 4 Interim | 2 | 8 | 36 | 0.38 |
| Option 2 Buildings 1 and 2 Utility Trenching | Off-Highway Trucks | Diesel | Tier 4 Interim | 1 | 8 | 376 | 0.38 |
| Option 2 Buildings 1 and 2 Utility Trenching | Rubber Tired Loaders | Diesel | Tier 4 Interim | 1 | 8 | 150 | 0.36 |
| Option 2 Finishing/Landscaping | Cranes | Diesel | Tier 4 Interim | 1 | 8 | 367 | 0.29 |
| Option 2 Finishing/Landscaping | Crawler Tractors | Diesel | Tier 4 Interim | 1 | 8 | 87 | 0.43 |
| Option 2 Finishing/Landscaping | Excavators | Diesel | Tier 4 Interim | 2 | 8 | 36 | 0.38 |
| Option 2 Finishing/Landscaping | Off-Highway Trucks | Diesel | Tier 4 Interim | 1 | 8 | 376 | 0.38 |
| Option 2 Finishing/Landscaping | Rubber Tired Loaders | Diesel | Tier 4 Interim | 1 | 8 | 150 | 0.36 |

Note: Screenshot does not include all the applicable changes.

O2A-4 cont'd

Furthermore, the DEIR provides additional information regarding Tier 4 requirements, stating:

> "Tier 4. If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted" (p. 5.6-16).

However, the assumption that the Project's off-road construction equipment fleet would meet Tier 4 final and Tier 4 interim emissions standards remains unsupported as the DEIR fails to explicitly require these standards through a formal mitigation measure. This is incorrect, as according to the Association of Environmental Professionals ("AEP") *CEQA Portal Topic Paper* on mitigation measures:

> "While not 'mitigation', a good practice is to include those project design feature(s) that address environmental impacts in the mitigation monitoring and reporting program (MMRP). Often the MMRP is all that accompanies building and construction plans through the permit process. If the

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# 2. Response to Comments

design features are not listed as important to addressing an environmental impact, it is easy for someone not involved in the original environmental process to approve a change to the project that could eliminate one or more of the design features without understanding the resulting environmental impact" (emphasis added).[6]

As demonstrated in the excerpt above, measures that are not formally included in the mitigation monitoring and reporting program may be eliminated from the Project's design altogether. As the use of construction equipment with Tier 4 Final and Tier 4 Interim emissions standards are not formally included as mitigation measures, we cannot guarantee that these standards would be implemented, monitored, and enforced on the Project site. Consequently, the models' assumption that the off-road construction equipment fleet would adhere to Tier 4 Final and Tier 4 Interim emissions standards is incorrect.

O2A-4 cont'd

*Unsubstantiated Changes to Fleet Mix Values*

Review of the CalEEMod output files demonstrates that the "Irwindale Gateway Project (Option 1) Operations" and "Irwindale Gateway Project (Option 2) Operations" models include changes to the default operational vehicle fleet mix percentages (see excerpt below) (Appendix D1, pp. 162, 168, 172).

8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Characteristics: Project Details | |
| Characteristics: Utility Information | 2021 SCE Sustainability Report |
| Land Use | Based on land use area provided by applicant |
| Operations: Vehicle Data | represents passenger trips only, assumes operations on weekdays and weekends, assumes 100% nonres H-W trips |
| Operations: Fleet Mix | Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses. |
| Operations: Water and Waste Water | based on water and wastewater numbers from the Utilities and Service Systems section. Assumes 100% aerobic treatment. |
| Operations: Solid Waste | based on the CalRecycle Solid Waste Generation Rate of 1.42 lb/KSF/day. See Section 5.17, Utilities and Service Systems for calculations. |
| Operations: Architectural Coatings | see assumptions file for striping calcs |

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[7] According to the "User Entered Comments & Non-Default Data" table, the justification provided for the changes included in the changes is:

O2A-5

> "Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses." (Appendix D1, pp. 162, 168, 172).

However, these changes remain unsubstantiated. As previously discussed, the output files for CalEEMod 2022.1 do not present the numeric changes to any model defaults. Upon further review of the output files, changes to fleet mix percentages are not mentioned outside of the "User Changes to Default Data" table. Until the DEIR verifies the breakdown of heavy-heavy duty ("HHD"), medium-heavy duty ("MHD"), and light-heavy duty ("LHD1, LDH2") trucks used in the model, we cannot verify that these values are accurate and consistent with the information provided by the DEIR.[8]

[6] "CEQA Portal Topic Paper Mitigation Measures." AEP, February 2020, *available at:* https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf, p. 6.
[7] "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1, 14.
[8] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 38.

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These unsubstantiated changes present an issue, as CalEEMod uses operational vehicle fleet mix percentages to calculate the Project's operational emissions associated with on-road vehicles.[9] By including several unsubstantiated changes to the default operational vehicle fleet mix percentages, the models may underestimate the Project's mobile-source operational emissions and should not be relied upon to determine Project significance.

O2A-5 cont'd

*Unsubstantiated Changes to Operational Wastewater Values*

Review of the CalEEMod output files demonstrates that "Irwindale Gateway Project (Option 1) Operations" and "Irwindale Gateway Project (Option 2) Operations" models include changes to the default operational water and wastewater values (see excerpt below) (Appendix D1, pp. 165, 168, 172, 175).

8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Characteristics: Project Details | |
| Characteristics: Utility Information | 2021 SCE Sustainability Report |
| Land Use | Based on land use area provided by applicant |
| Operations: Vehicle Data | represents passenger trips only, assumes operations on weekdays and weekends, assumes 100% nonres H-W trips |
| Operations: Fleet Mix | Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses. |
| Operations: Water and Waste Water | based on water and wastewater numbers from the Utilities and Service Systems section. Assumes 100% aerobic treatment |
| Operations: Solid Waste | based on the CalRecycle Solid Waste Generation Rate of 1.42 lb/KSF/day. See Section 5.17, Utilities and Service Systems for calculations. |
| Operations: Architectural Coatings | see assumptions file for striping calcs |

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[10] As demonstrated above in the "User Changes to Default Data" table, the justification provided for these changes is:

> "Based on water and wastewater numbers from the Utilities and Service Systems section. Assumes 100% aerobic treatment" (Appendix D1, pp. 165, 168, 172, 175).

O2A-6

However, this justification is insufficient, as the DEIR fails to mention or substantiate this claim whatsoever. As previously discussed, the CalEEMod User's Guide requires changes to be supported by substantial evidence.[11] As the DEIR fails to provide substantial evidence to support the changes to the operational water and wastewater values, we cannot verify the changes.

Furthermore, additional review demonstrates that CalEEMod version 2022.1 fails to display the wastewater treatment values and percentages. As such, we cannot verify these changes.

These unsubstantiated changes present an issue, as each type of wastewater treatment system is associated with different GHG emission factors, which are used by CalEEMod to calculate the Project's total GHG emissions.[12] By including unsubstantiated changes to the default wastewater treatment

[9] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 36.
[10] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1, 14.
[11] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 13, 14.
[12] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 45.

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system percentages, the model may underestimate the Project's GHG emissions and should not be relied upon to determine Project significance.

O2A-6 cont'd

## Updated Analysis Indicates a Potentially Significant Air Quality Impact

In an effort to more accurately estimate the Project's construction-related emissions we prepared an updated CalEEMod model of Project Option 1, using the Project-specific information provided by the DEIR. In our updated model, we proportionately changed the default construction phase lengths to match the proposed construction duration of 37 months.[13]

Our updated analysis estimates that the volatile organic compound ("VOC") emissions associated with Project construction exceed the applicable South Coast Air Quality Management District ("SCAQMD") threshold of 75 pounds per day ("lbs/day") (see table below).[14]

SWAPE Criteria Air Pollutant Emissions

| Construction | VOC (lbs/day) |
|---|---|
| DEIR | 75 |
| SWAPE | 167.5 |
| % Increase | 123.3% |
| SCAQMD Threshold | **75** |
| *Exceeds?* | ***Yes*** |

O2A-7

As demonstrated above, construction-related VOC emissions, as estimated by SWAPE, increase by approximately 123.3% and exceed the applicable SCAQMD significance threshold. Our updated modeling demonstrates that the Project would result in a potentially significant air quality impact that was not previously identified or addressed by the DEIR. A revised EIR should be prepared to adequately assess and mitigate the potential air quality impacts that the Project may have on the environment.

Furthermore, after review of the DEIR and associated documents, it is strongly recommended that of the two separate proposed land use options for Project development, the lead agency adopts Option 2, which as previously discussed, includes 15.94-acres of a BESS. As discussed by the SCAQMD, "CEQA requires the use of 'conservative analyses to afford 'fullest possible protection of the environment.'"[15] To be consistent with CEQA guidelines requiring the most conservative approach, we recommend the lead agency adopts the proposed land uses associated with Option 2 in order to mitigate potential air quality, health risk, and GHG impacts to the maximum extent feasible.

O2-A8

[13] See Attachment A for updated CalEEMod model.
[14] "South Coast AQMD Air Quality Significance Thresholds." SCAQMD, March 2023, *available at*: https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25.
[15] "Warehouse Truck Trip Study Data Results and Usage" Presentation. SCAQMD Inland Empire Logistics Council, June 2014, *available at*: http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/final-ielc_6-19-2014.pdf?sfvrsn=2.

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### Disproportionate Health Risk Impacts of Warehouses on Surrounding Communities

Upon review of the DEIR and associated documents, we have determined that the development of the proposed Project may contribute to the disproportionate health risk impacts that warehouses pose to community members living, working, and going to school within the immediate area of the Project site. According to SCAQMD:

> "Those living within a half mile of warehouses are more likely to include communities of color, have health impacts such as higher rates of asthma and heart attacks, and a greater environmental burden."[16]

In particular, the SCAQMD found that more than 2.4 million people live within a half mile radius of at least one warehouse, and that those areas not only experience increased rates of asthma and heart attacks, but are also disproportionately Black and Latino communities below the poverty line.[17] Another study similarly indicates that "neighborhoods with lower household income levels and higher percentages of minorities are expected to have higher probabilities of containing warehousing facilities."[18] Additionally, a report authored by the Inland Empire-based People's Collective for Environmental Justice and University of Redlands states: O2A-9

> "As the warehouse and logistics industry continues to grow and net exponential profits at record rates, more warehouse projects are being approved and constructed in low-income communities of color and serving as a massive source of pollution by attracting thousands of polluting truck trips daily. Diesel trucks emit dangerous levels of nitrogen oxide and particulate matter that cause devastating health impacts including asthma, chronic obstructive pulmonary disease (COPD), cancer, and premature death. As a result, physicians consider these pollution-burdened areas 'diesel death zones.'"[19]

It is evident that the continued development of industrial warehouses within these communities poses a significant environmental justice challenge. However, the acceleration of warehouse development is only increasing despite the consequences on public health.

Irwindale, the setting of the proposed Project, has long borne a disproportionately high pollution burden compared to the rest of California. When using CalEnviroScreen 4.0, CalEPA's screening tool that ranks

[16] "South Coast AQMD Governing Board Adopts Warehouse Indirect Source Rule." SCAQMD, May 2021, *available at:* http://www.aqmd.gov/docs/default-source/news-archive/2021/board-adopts-waisr-may7-2021.pdf?sfvrsn=9.
[17] "Southern California warehouse boom a huge source of pollution. Regulators are fighting back." Los Angeles Times, May 2021, *available at:* https://www.latimes.com/california/story/2021-05-05/air-quality-officials-target-warehouses-bid-to-curb-health-damaging-truck-pollution.
[18] "Location of warehouses and environmental justice: Evidence from four metros in California." Metro Freight Center of Excellence, January 2018, *available at:* https://www.metrans.org/assets/research/MF%201.1g_Location%20of%20warehouses%20and%20environmental%20justice_Final%20Report_021618.pdf, p. 21.
[19] "Warehouses, Pollution, and Social Disparities: An analytical view of the logistics industry's impacts on environmental justice communities across Southern California." People's Collective for Environmental Justice, April 2021, *available at:* https://earthjustice.org/sites/default/files/files/warehouse_research_report_4.15.2021.pdf, p. 4.

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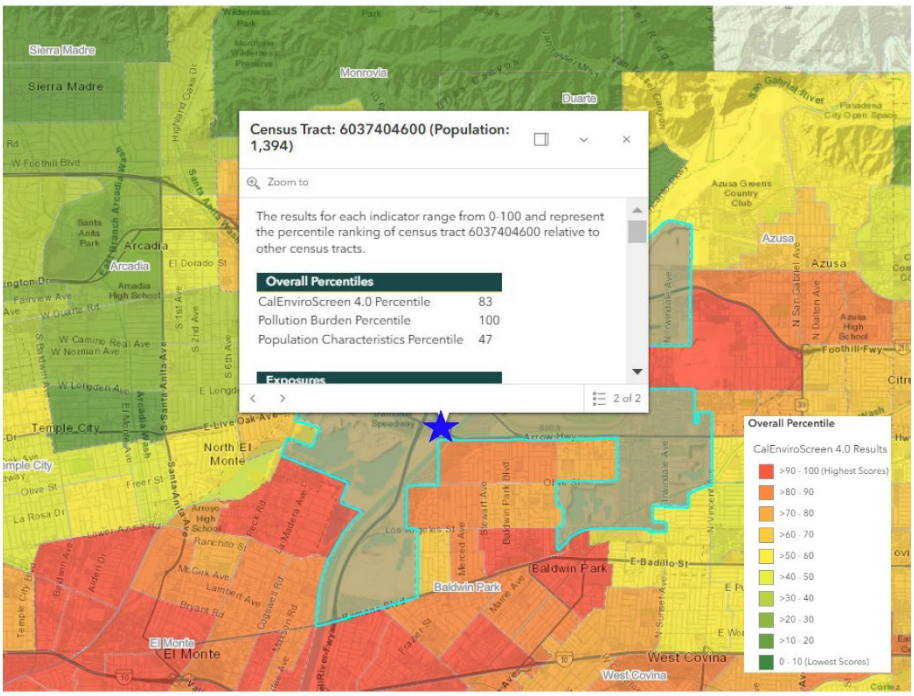
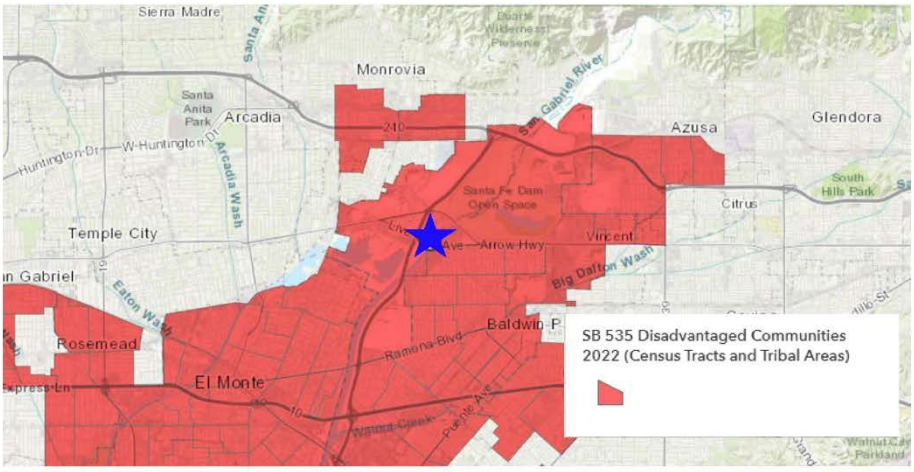
each census tract in the State for pollution and socioeconomic vulnerability, we found that the Project's census tract is in the 100th percentile of most polluted census tracts in the state (see excerpt below).[20]




According to CalEnviroScreen's SB 535 Disadvantaged Communities Map, the Project site is located in a designated disadvantaged community (see excerpt below).[21]

O2A-9 cont'd

[20] "CalEnviroScreen 4.0." California Office of Environmental Health Hazard Assessment (OEHHA), October 2021, *available at:* https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40.
[21] "SB 535 Disadvantaged Communities (2022 Update)." California Environmental Protection Agency, *available at:* https://experience.arcgis.com/experience/1c21c53da8de48f1b946f3402fbae55c/page/SB-535-Disadvantaged-Communities/




O2A-9 cont'd

SB 535 provides funding for development projects that provide a benefit to disadvantaged communities. CalEPA has been given the responsibility for identifying those communities based on "geographic, socioeconomic, public health, and environmental hazard criteria."[22] As the Project site is located in a designated disadvantaged community, and Project's census tract already exhibits a high cancer risk, development of the proposed Project would contribute to the disproportionate impact warehouses are posing to the health conditions of nearby residents.

The Data Visualization Tool for Mates V, a monitoring and evaluation study conducted by SCAQMD, demonstrates that the City already exhibits a heightened residential carcinogenic risk from exposure to air toxins. Specifically, the location of the Project site is in the 88th percentile of highest cancer risks in the South Coast Air Basin, with a cancer risk of 625 in one million (see excerpt below).[23]

[22] "Final Designation of Disadvantaged Communities." California Environmental Protection Agency, *available at:* https://calepa.ca.gov/wp-content/uploads/sites/6/2022/05/Updated-Disadvantaged-Communities-Designation-DAC-May-2022-Eng.a.hp_-1.pdf?emrc=e05e10.

[23] "Residential Air Toxics Cancer Risk Calculated from Model Data in Grid Cells." MATES V, 2018, *available at:* https://experience.arcgis.com/experience/79d3b6304912414bb21ebdde80100b23/page/Main-Page/?views=Click-tabs-for-other-data%2CGridded-Cancer-Risk; see also: "MATES V Multiple Air Toxics Exposure Study." SCAQMD, *available at:* http://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-v.

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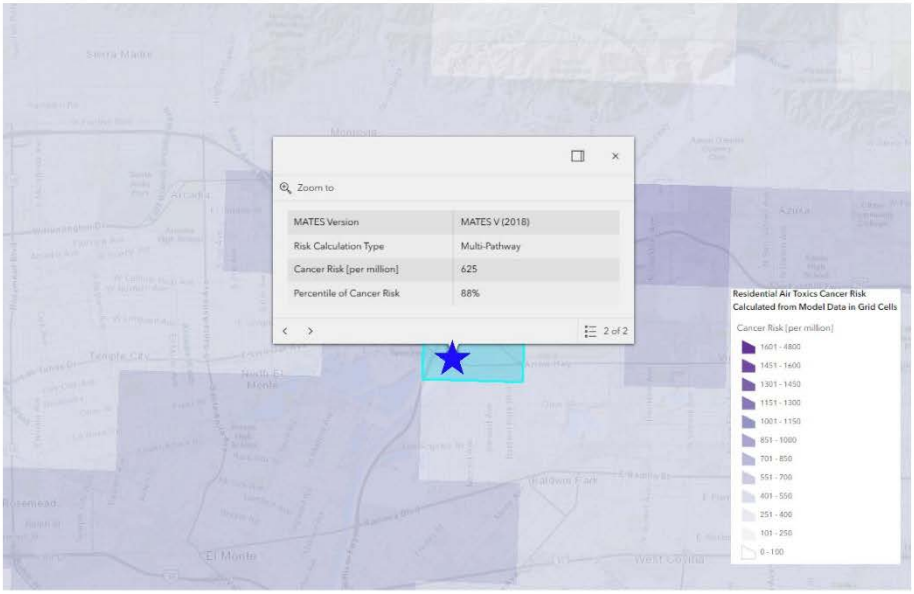


O2A-9 cont'd

Therefore, development of the proposed warehouse would contribute to the disproportionate impact warehouses are posing to the health conditions of the residents in Irwindale.

In April 2022, the American Lung Association ranked Los Angeles County as the third worst for ozone pollution in the nation.[24] This year, the County continues to face the worst ozone pollution, as it has seen the highest recorded Air Quality Index ("AQI") values for ground-level ozone in California.[25] The U.S. Environmental Protection Agency ("EPA") indicates that ozone, the main ingredient in "smog," can cause several health problems, which includes aggravating lung diseases and increasing the frequency of asthma attacks. The U.S. EPA states:

> "Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Children are also more likely than adults to have asthma."[26]

Furthermore, regarding the increased sensitivity of early-life exposures to inhaled pollutants, the California Air Resources Board states:

[24] "State of the Air 2022." American Lung Association, April 2022, *available at:* https://www.lung.org/research/sota/key-findings/most-polluted-places.
[25] "High Ozone Days." American Lung Association, 2022, *available at:* https://www.lung.org/research/sota/city-rankings/states/california.
[26] "Health Effects of Ozone Pollution." U.S. EPA, May 2021, *available at:* https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution.

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"Children are often at greater risk from inhaled pollutants, due to the following reasons:

- Children have unique activity patterns and behavior. For example, they crawl and play on the ground, amidst dirt and dust that may carry a wide variety of toxicants. They often put their hands, toys, and other items into their mouths, ingesting harmful substances. Compared to adults, children typically spend more time outdoors and are more physically active. Time outdoors coupled with faster breathing during exercise increases children's relative exposure to air pollution.
- Children are physiologically unique. Relative to body size, children eat, breathe, and drink more than adults, and their natural biological defenses are less developed. The protective barrier surrounding the brain is not fully developed, and children's nasal passages aren't as effective at filtering out pollutants. Developing lungs, immune, and metabolic systems are also at risk.
- Children are particularly susceptible during development. Environmental exposures during fetal development, the first few years of life, and puberty have the greatest potential to influence later growth and development."[27]

O2A-9 cont'd

A Stanford-led study also reveals that children exposed to high levels of air pollution are more susceptible to respiratory and cardiovascular diseases in adulthood.[28] Given children's higher propensity to succumb to the negative health impacts of air pollutants, and as warehouses release more smog-forming pollution than any other sector, it is necessary to evaluate the specific health risk that warehouses pose to children in the nearby community.

A revised EIR should be prepared to evaluate the proposed Project's contribution to the disproportionate impacts that warehouses are posing on the community adjacent to the Project site. The EIR should include an analysis of the impact on children and people of color who live and attend school in the surrounding area. Finally, to evaluate the cumulative air quality impact from the several warehouse projects proposed or built in a one-mile radius of the Project site, the EIR should also prepare a cumulative health risk assessment ("HRA") to quantify the adverse health outcome from the effects of exposure to multiple warehouses in the immediate area in conjunction with the poor ambient air quality in the Project's census tract.

O2A-10

## Diesel Particulate Matter Emissions Inadequately Evaluated

The DEIR concludes that the proposed Project would result in a less-than-significant health risk impact based on a quantified construction and operational HRA, as detailed in the Mobile Health Risk Assessment ("HRA Report"), provided as Appendix D2 to the DEIR. Specifically, the HRA Report estimates that the cumulative maximum cancer risk posed to nearby, existing residential sensitive

O2A-11

[27] "Children and Air Pollution." California Air Resources Board (CARB), *available at:* https://ww2.arb.ca.gov/resources/documents/children-and-air-pollution.
[28] "Air pollution puts children at higher risk of disease in adulthood, according to Stanford researchers and others." Stanford, February 2021, *available at:* https://news.stanford.edu/2021/02/22/air-pollution-impacts-childrens-health/.

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receptors associated with construction and operation for Option 1 would be 6.2-in one million, as well as Option 2, which is estimated to be 4.7-in one million, which would both not exceed the SCAQMD significance threshold of 10 in one million (see excerpt below) (p. D2-26, Table 4).

**Table 4 Cumulative Analysis Results for Maximum Exposed Individual Resident**

| Site Option | Maximum Exposed Individual Resident (MEIR) | Cancer Risk (per million) | Chronic Hazards |
|---|---|---|---|
| Option 1 | Project Construction | 0.3 | 0.001 |
| | Project Operation | 5.9 | 0.002 |
| | Combined Total | 6.2 | 0.003 |
| Option 2 | Project Construction | 0.3 | 0.001 |
| | Project Operation | 4.4 | 0.001 |
| | Combined Total | 4.7 | 0.002 |
| South Coast AQMD Threshold | | 10 | 1.0 |
| Exceeds Threshold? | | No | No |

O2A-11 cont'd

However, the DEIR's evaluation of the Project's potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for two reasons.

First, the DEIR's HRA is unreliable, as it relies upon emissions estimates from a flawed air model, as discussed above in the section titled "Unsubstantiated Input Parameters Used to Estimate Project Emissions." As such, the HRA is based on potentially underestimated DPM concentrations to calculate the health risk associated with Project construction. As a result, the DEIR's HRA and resulting cancer risk should not be relied upon to determine Project significance.

O2A-12

Second, the DEIR's operational HRA underestimates the Fraction of Time At Home ("FAH") values for the third trimester, infant, and child receptors. Specifically, the HRA Report utilizes an FAH value of 0.85 for the third trimester (age -0.25 to 0) and infant (age 0 to 2) receptors, an FAH value of 0.72 for the child receptors (age 2 to 16), and an FAH value of 0.73 for the adult receptors (age 16 to 30) (see excerpt below) (Appendix D2, p. D2-20).

| Age Groups | BR/BW (L/kg-day) | ED | ASF | FAH |
|---|---|---|---|---|
| Third trimester | 361 | 0.25 | 10 | 0.85 |
| 0–2 age group | 1,090 | 2 | 10 | 0.85 |
| 2–9 age group | 861 | 7 | 3 | 0.72 |
| 2–16 age group | 745 | 14 | 3 | 0.72 |
| 16–30 age group | 335 | 14 | 1 | 0.73 |

O2A-13

However, the FAH values used for the third trimester, infant, and childhood receptors are incorrect, as SCAQMD guidance clearly states:

> "For Tiers 1, 2, and 3 screening purposes, the FAH is assumed to be 1 for ages third trimester to 16. As a default, children are assumed to attend a daycare or school in close proximity to their home and no discount should be taken for time spent outside of the area affected by the

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facility's emissions. People older than age 16 are assumed to spend only 73 percent of their time at home."[29]

Per SCAQMD guidance, the HRA Report should have used an FAH of 1 for the third trimester, infant, child, and adult receptors. By relying on incorrect FAH values, the DEIR may underestimate the cancer risk posed to nearby, existing sensitive receptors as a result of Project construction and operation.

O2A-13 cont'd

## Greenhouse Gas

### Failure to Adequately Evaluate Greenhouse Gas Impacts

The DEIR estimates that Option 1 and Option 2 for the Project would generate net annual GHG emissions of 22,670 metric tons of carbon dioxide equivalents per year ("MT $CO_2e$/year") and 17,874 MT $CO_2e$/year, respectively (see excerpt below) (p. 5.6-21, Table 5.6-5; p. 5.6-22, Table 5.6-6).

**Table 5.6-5 Project-Related GHG Emissions (Option 1)**

| Source | GHG Emissions | |
|---|---|---|
| | MTCO2e per Year | Percentage |
| Mobile (Truck) | 12,649 | 54% |
| Mobile (Passenger) | 3,080 | 13% |
| Area | 20 | <1% |
| Energy | 3,410 | 15% |
| Water | 105 | <1% |
| Solid Waste | 81 | <1% |
| Refrigerants | 1,710 | 7% |
| TRUs | 597 | 3% |
| Off-Road Equipment | 1,650 | 7% |
| Amortized Construction Emissions[1] | 153 | 1% |
| Total | 22,670 | 100% |
| South Coast AQMD Bright-Line Threshold | 3,000 MTCO2e/Yr | NA |
| **Exceeds Bright-Line Threshold?** | **Yes** | NA |

Source: CalEEMod, Version 2022.1.
Notes: MTCO2e = metric ton of carbon dioxide equivalent
[1] Total construction emission are amortized over 30 years per South Coast AQMD methodology (South Coast AQMD 2009).

O2A-14

[29] "Risk Assessment Procedures." SCAQMD, August 2017, available at: http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1401/riskassessmentprocedures_2017_080717.pdf, p. 7.

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**Table 5.6-6 Project-Related GHG Emissions (Option 2)**

| Source | GHG Emissions | |
|---|---|---|
| | $MTCO_2e$ per Year | Percentage |
| Mobile (Truck) | 9,544 | 53% |
| Mobile (Passenger) | 1,949 | 11% |
| Area | 14 | <1% |
| Energy | 2,786 | 15% |
| Water | 105 | 1% |
| Solid Waste | 57 | <1% |
| Refrigerants | 1,710 | 9% |
| TRUs | 638 | 4% |
| Off-Road Equipment | 1,156 | 6% |
| Amortized Construction Emissions[1,2] | 128 | 1% |
| Total | 17,874 | 100% |
| South Coast AQMD Bright-Line Threshold | 3,000 $MTCO_2e$/Yr | NA |
| **Exceeds Bright-Line Threshold?** | Yes | NA |

Source: CalEEMod, Version 2022.1.
Notes: $MTCO_2e$ = metric ton of carbon dioxide equivalent
[1] Total construction emission are amortized over 30 years per South Coast AQMD methodology (South Coast AQMD 2009).
[2] The connection of the BESS use to the off-site interconnection facilities is assumed to utilize the same equipment as the off-site roadway improvements. Therefore, construction of these transmission lines would not result in emissions higher than already modeled under the linear construction phases.

The DEIR concludes that the Project would result in a significant-and-unavoidable GHG impact, stating:

> "Mitigation Measure GHG-3 would reduce emissions by 1,650 MTCO2e/yr for Option 1 and 1,156 MTCO2e/yr for Option 2 from utilization of all-electric off-road equipment. However, because the number of people who may utilize alternative modes of transportation is not known, the total reductions that the services provided through Mitigation Measures GHG-1, GHG-2, GHG-4, GHG-5, GHG-6, GHG-7, and other components of GHG-3 cannot be quantified. Neither the project applicant nor the lead agency (City of Irwindale) can substantively or materially affect reductions in project mobile-source emissions beyond the regulatory requirements. Because emissions would total 21,80515 MTCO2e/yr under Option 1 and 16,93216 MTCO2e/yr under Option 2, both options for the proposed project would still exceed 3,000 MTCO2e/yr, and Impact 5.7-1 would remain significant and unavoidable" (p. 5.6-27).

O2A-14 cont'd

As discussed, the DEIR concludes that the Project exceeds SCAQMD's GHG threshold of 3,000 MT $CO_2e$ for non-industrial projects, and claims there are no further available, implementable mitigation measures beyond MM AQ-1 through MM AQ-4 and MM GHG-1 through MM GHG-7. However, while we agree that the Project would result in a significant GHG impact, the DEIR's assertion that this impact is *significant-and-unavoidable* is incorrect. According to the CEQA guidelines, an impact can only be labeled as significant and unavoidable after all available, feasible mitigation is considered. Here, while the DEIR identifies mitigation measures MM AQ-1 through AQ-4 and MM GHG-1 through MM GHG-7, it fails to implement *all* feasible and available mitigation measures. We propose additional, feasible mitigation measures below that the Project can identify and incorporate into a revised EIR.

## Mitigation

### Feasible Mitigation Measures Available to Reduce Emissions

O2-A15

According to CEQA Guidelines § 15096(g)(2):

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> "When an updated EIR has been prepared for a project, the Responsible Agency shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment."

O2A-15 cont'd

The DEIR is consequently required under CEQA to implement all feasible mitigation to reduce the Project's potential impacts. As demonstrated in the sections above, the Project may result in potentially significant air quality, health risk, and GHG impacts that should be mitigated further.

First, in order to reduce the DPM emissions associated with Project construction and operation, we recommend the DEIR consider several mitigation measures (see list below).

Southern California Association of Governments ("SCAG")'s 2020 RTP/SCS PEIR's Air Quality Project Level Mitigation Measures ("PMM-AQ-1") recommends:[30]

- Minimize unnecessary vehicular and machinery activities;
- Require contractors to assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that could be used an aggregate of 40 or more hours for the construction project. Prepare a plan for approval by the applicable air district demonstrating achievement of the applicable percent reduction for a CARB-approved fleet. Daily logging of the operating hours of the equipment should also be required;
- Ensure that all construction equipment is properly tuned and maintained; and
- Minimize idling time to 5 minutes or beyond regulatory requirements —saves fuel and reduces emissions.

O2A-16

The Department of Justice ("DOJ") recommends:[31]

- Requiring tenants to use zero-emission light- and medium-duty vehicles as part of business operations;
- Forbidding trucks from idling for more than three minutes and requiring operators to turn off engines when not in use; and
- Posting both interior- and exterior-facing signs, including signs directed at all dock and delivery areas, identifying idling restrictions and contact information to report violations to CARB, the local air district, and the building manager.

Second, in order to reduce the GHG emissions associated with the Project, we recommend several mitigation measures (see list below).

O2A-17

SCAG's 2020 RTP/SCS PEIR's Greenhouse Gas Project Level Mitigation Measures ("PMM-GHG-1") recommends:

[30] *Ibid.* p. 8 – 9.
[31] *Ibid.* p. 8 – 9.

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- Incorporate bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; and planning for and building local bicycle projects that connect with the regional network;
- Improving transit access to rail and bus routes by incentives for construction and transit facilities within developments, and/or providing dedicated shuttle service to transit stations; and
- Designate a percentage of parking spaces for ride-sharing vehicles or high-occupancy vehicles, and provide adequate passenger loading and unloading for those vehicles;
- Implement preferential parking permit program;
- Encourage telecommuting and alternative work schedules, such as:
  - Staggered starting times
  - Flexible schedules
  - Compressed work weeks
  - Implement commute trip reduction marketing, such as:
  - New employee orientation of trip reduction and alternative mode options
  - Event promotions
  - Publications;
- Price workplace parking, such as:
  - Explicitly charging for parking for its employees;
  - Implementing above market rate pricing;
  - Validating parking only for invited guests; TIAL
  - Not providing employee parking and transportation allowances; and
  - Educating employees about available alternatives; and
- Adopting employer trip reduction measures to reduce employee trips such as vanpool and carpool programs, providing end-of-trip facilities, and telecommuting programs including but not limited to measures that:
  - Provide transit passes;
  - Provide incentives or subsidies that increase that use of modes other than single-occupancy vehicle;
  - Provide on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms;
  - Provide employee transportation coordinators at employment sites; and
  - Provide a guaranteed ride home service to users of non-auto modes.

O2A-17 cont'd

The Department of Justice ("DOJ") recommends: [32]

- Requiring all stand-by emergency generators to be powered by a non-diesel fuel;
- Meeting CalGreen Tier 2 green building standards, including all provisions related to designated parking for clean air vehicles, electric vehicle charging, and bicycle parking;
- Designing to LEED green building certification standards;

[32] *Ibid.* p. 9 – 10.

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- Constructing zero-emission truck charging/fueling stations proportional to the number of dock doors at the project;
- Running conduit to designated locations for future electric truck charging stations;
- Constructing and maintaining electric light-duty vehicle charging stations proportional to the number of employee parking spaces (for example, requiring at least 10% of all employee parking spaces to be equipped with electric vehicle charging stations of at least Level 2 charging performance);
- Running conduit to an additional proportion of employee parking spaces for a future increase in the number of electric light-duty charging stations;
- Providing meal options onsite or shuttles between the facility and nearby meal destinations.
- Posting signs at every truck exit driveway providing directional information to the truck route;
- Requiring tenants to enroll in the United States Environmental Protection Agency's SmartWay program, and requiring tenants who own, operate, or hire trucking carriers with more than 100 trucks to use carriers that are SmartWay carriers; and
- Providing tenants with information on incentive programs, such as the Carl Moyer Program and Voucher Incentive Program, to upgrade their fleets.

O2A-17 cont'd

CEQA Guidelines 15126.4 (c)(3) includes "offsite measures, including offsets that are not otherwise required, to mitigate a project's emissions" as an option for GHG mitigation.[33] We therefore recommend consideration of off-site reduction measures in the neighboring communities, as suggested to the Oakland Sports and Mixed-Use Project.[34]

O2A-18

As demonstrated above, we have provided several mitigation measures that would reduce Project-related GHG emissions developed from sources including SCAG, the DOJ and others. These measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently reduce emissions released during Project construction and operation.

A revised EIR should be prepared that includes *all* feasible mitigation measures, as well as updated air quality, health risk and GHG analyses to ensure that the necessary mitigation measures are implemented to reduce emissions to the maximum extent feasible. The revised EIR should also demonstrate a commitment to the implementation of these measures prior to Project approval, to ensure that the Project's potentially significant emissions are reduced to the maximum extent possible.

O2A-19

[33] "Cal. Code Regs. tit. 14 § 15126.4." CEQA Guidelines, May 2024, *available at*: https://casetext.com/regulation/california-code-of-regulations/title-14-natural-resources/division-6-resources-agency/chapter-3-guidelines-for-implementation-of-the-california-environmental-quality-act/article-9-contents-of-environmental-impact-reports/section-151264-consideration-and-discussion-of-mitigation-measures-proposed-to-minimize-significant-effects.

[34] "Cal. Pub. Resources Code § 21168.6.7." 2023, *available at*: https://casetext.com/statute/california-codes/california-public-resources-code/division-13-environmental-quality/chapter-6-limitations/section-2116867-oakland-sports-and-mixed-use-project-conditions-for-approval-certification-of-project-for-streamlining.

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# 2. Response to Comments

## Disclaimer

SWAPE has received limited discovery regarding this project. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

Matt Hagemann, P.G., C.Hg.

Paul E. Rosenfeld, Ph.D.

Attachment A: SWAPE's CalEEMod Output Files
Attachment B: Matt Hagemann CV
Attachment C: Paul Rosenfeld CV

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**Due to the large number of pages (150) and no comments, the balance of Letter O2A is provided as Appendix D of this Final Environmental Impact Report.**

# 2. Response to Comments

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## O2A Response to Comments from SWAPE, dated June 20, 2024

O2A-1 See responses for Comments O2A-2 through O2A-19.

O2A-2 Commenter indicates CalEEMod Version 2022.1 is described as a "soft release" and cites to the phrase, "CalEEMod California Emissions Estimator Model Soft Release", and the web address of https://caleemod.com as support for this statement. However, the webpage of the web address provided includes no such phrase indicating the model as a soft release (see image below). Furthermore, per the CalEEMod Release Notes (https://www.caleemod.com/release-notes), the full version of CalEEMod was released on December 21, 2022. The layout and content of the CalEEMod output files as found in the output files provided in Appendix D1 of the Draft EIR have not changed from what was provided by the initial full release version of CalEEMod. Thus, the output files can be considered the full and complete versions. The version of CalEEMod used for the project was released after December 21, 2022, and is a full release version.

The commenter is incorrect in stating that the CalEEMod Version 2022.1 output file does not include the quantitative counterparts to the default values. Commenter references to "User Changes to Default Data", which is Section 8 of a CalEEMod Version 2022.1 output file to support their assertion. In general, model inputs can be found under Section 5, Activity Data, of a CalEEMod Version 2022.1 output file. The activity data under

Section 5 are included in the output files for each of the model runs included in Appendix D1 of the Draft EIR (e.g., see pages D1-130, 139, 145, 151, and 155 of Appendix D1). Furthermore, operation and construction-related modeling inputs for CalEEMod were also provided under the Assumptions Worksheet section of Appendix D1 on pages D1-78 through D1-106. These sources can be referred to for modeling data inputs.

O2A-3 See response to Comment O2A-2.

O2A-4 Tier 4 construction equipment as mitigation under CalEEMod mitigation module was not utilized in the EIR and only included with the model run in the event Tier 4 equipment was needed to reduce emissions below the South Coast AQMD regional construction emissions thresholds, it was not. The CalEEMod outputs include both "mitigated" and "unmitigated" model run scenarios. While the CalEEMod construction emissions modeling prepared did apply Tier 4 equipment as a mitigation under CalEEMod's mitigation module, the emissions data used to determine potential project-related air quality impacts before mitigation (see Tables 5.2-9, 5.2-10, 5.2-13, 5.2-14, and 5.2-15) were based on the "unmitigated" emissions data provided in the CalEEMod output file. The "unmitigated" emissions data does not account for any Tier 4 emissions reductions.

Overall, the analysis provided in Chapter 5.2, *Air Quality*, of the Draft EIR does not rely on any emissions data that account for reductions from Tier 4 construction equipment. To avoid any confusion, all of the CalEEMod construction model runs have been updated to remove the reference to Tier 4 equipment and the updated CalEEMod output files are included in Appendix E of this Final EIR. As stated above, because the analysis in the Draft EIR did not use the emissions data that accounted for the Tier 4 emissions reductions, this update to the modeling does not affect any of the analysis and determinations in the Draft EIR.

O2A-5 The fleet mix used in the CalEEMod operations model runs in addition to the fleet mix details are included in Appendix D1 (see pages D1-103 through D1-106) of the Draft EIR.

O2A-6 Project-generated wastewater would be conveyed to the San Jose Creek Water Reclamation Plant (WRP) for treatment and would not involve the use of septic tanks. Furthermore, the San Jose Creek WRP does not employ the use of facultative lagoons.[28] Therefore, assumption that wastewater treatment would be 100 percent aerobic is supported.

In general, CalEEMod requires a user to enter a comment in the "Justification for changes" box within the model in order to change a model default value. Any changes to CalEEMod default values in the modeling are noted either in the "Justification for

[28] Los Angeles County Sanitation Districts (LACSD). 2024, July 11 (accessed). San Jose Creek Water Reclamation Plan. https://www.lacsd.org/services/wastewater-sewage/facilities/san-jose-creek-water-reclamation-plant.

changes" comment box in the model which appear in Section 8: User Changes to Default Data in the CalEEMod output file. For water, comments note changes to water inputs for only water demand and wastewater treatment percentages. Additionally, changes to CalEEMod default values and details for modeling inputs used in place of CalEEMod default values are included under the Assumptions Worksheet section of Appendix D1 (pages D1-78 through D1-121) of the Draft EIR. The CalEEMod default wastewater treatment values could be verified by entering the water demand numbers found in Section 5: Activity Data of the CalEEMod output files and the wastewater treatment percentage(s) stated in Section 8: User Changes to Default Data of the CalEEMod output files. The water sector emissions as modeled by a user can be compared to the water sector emissions found in the Draft EIR. If the resulting water sector emissions are the same, then it would verify no changes were made to the wastewater treatment values.

O2A-7 Commenter prepared a separate construction model run for the proposed Option 1 and results of this modeling yielded maximum daily construction-related VOC emissions of 167.5 pounds per day (lbs/day). While commenter prepared modeling for the proposed Option 1, commenter erroneously compares the 167.5 lbs/day to the "DEIR" result of 75 lbs/day, which is the maximum daily result for the proposed Option 2 as found in Table 5.2-10 of the Draft EIR. The maximum daily construction-related VOC emissions for the proposed Option 1 as presented in Table 5.2-9 of the Draft EIR is 93 lbs/day and is the value that should have been presented in commenter's table. By comparing the 167.5 lbs/day to the smaller 75 lbs/day value, the commenter shows a larger increase than what the increase really would be if commenter had correctly used the 93 lbs/day, which would be a smaller 79.9 percent increase.

Regardless of the commenter's error above, in review of the commenter's modeling output files, commenter incorrectly used a higher VOC content paint for nonresidential exterior and interior paints that is double the VOC content paint utilized in the Option 1 CalEEMod construction modeling prepared for the Draft EIR. As defined in State CEQA Guidelines Section 15384(a), argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate, and evidence of social or economic impacts which does not contribute to or are not caused by physical impacts on the environment do not constitute substantial evidence.

O2A-8 Comment is acknowledged and will be forwarded to the City of Irwindale decision makers.

O2A-9 The commenter is concerned about potential health impacts of siting warehousing projects near residential areas and disadvantaged communities and cites several studies to support the concern. To address these issues, the proposed project conducted a project specific health risk assess (HRA) that evaluated both the project's impact to existing off-site residents in addition to users of sports park north of the planning area (Appendix D2 of the Draft EIR). As provided in Section 5.2, *Air Quality,* Table 5.2-18, *Operational Health*

*Risk Assessment Results* on page 5.2-42, health risks at the maximum exposed individual resident (MEIR) and the maximum exposed receptor at the sports park would be below South Coast AQMD's significance thresholds.

O2A-10 As stated in response to Comment O2A-9, an operational HRA was prepared to assess potential project-related offsite health risk impacts to nearby surrounding sensitive receptors. In addition, Chapter 5.2, *Air Quality*, of the Draft EIR also discussed potential cumulative health risk impacts from toxic air contaminants associated with other approved industrial or large-scale projects within two miles of the proposed planning area. As discussed on page 5.2-53 of the Draft EIR, the identified Mitigation Measures AQ-1, AQ-2, GHG-1, GHG-3, GHG-4, and GHG-7 would contribute to reducing TAC emissions and health risk levels. However, even with implementation of the aforementioned mitigation measures, cumulative health risk impacts were determined to be significant and unavoidable.

O2A-11 As discussed in the response to Comment O2A-4, the emissions for the unmitigated scenario (i.e., project emissions before mitigation scenario) represent the unmitigated emissions data from the CalEEMod output file, which do not account any reductions from Tier 4 construction equipment. The health risks calculated from project construction were determined for the unmitigated construction scenario. As provided on page 5.2-39 of the Draft EIR, Table 5.2-15, the construction cancer risks for the maximum exposed individual resident (MEIR) and maximum exposed sports park user are below 1 in a million for both Option1 and Option 2 and are well below the significance value of 10 in a million.

As provided on page 5.2-45 of the Draft EIR, and page D2-26 of the HRA (Appendix D2 of the Draft EIR), the combined health risks for the construction plus operational phases of the project would be less than the significance threshold values for both Option 1 and Option 2. Furthermore, with implementation of Mitigation Measure GHG-3 for electric/non-diesel fueled forklifts and yard trucks, the combined cancer risks for both Option 1 and Option 2 would be further reduced below the significance threshold of 10 in a million for cancer risk.

O2A-12 See response to Comment O2A-11.

O2A-13 The HRA prepared for the project is not a Tier 1, 2 or 3 screening level health risk analysis, but rather a detailed site-specific risk assessment. This is more closely related to what is described as a Tier 4: Detailed Risk Assessment in the South Coast AQMD Risk Assessment Projects for Rules 1401, 1401.1 and 212.[29] Additionally, Rules 1401, 1401.1 and 212 do not apply to mobile source emissions, such as truck emissions and yard

[29] South Coast Air Quality Management District, 2017. Risk Assessment Procedures for Rules 1401, 1401.1 and 212, Draft Version 8.1, dated August 8, 2017, accessed July 10, 2024 at http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1401/riskassessmentprocedures_2017_080717.pdf.

equipment emissions from warehouses, such as the evaluated project. Therefore, the use of fraction of time at home adjustment factors in determining the health risks to residential receptors for the site-specific risk assessment was an appropriate methodology.

See response to Comment O2A-11. As provided on page 5.2-45 of the Draft EIR, and page D2-26 of the HRA (Appendix D2 of the Draft EIR), the combined health risks for the construction plus operational phases of the project would be less than the significance threshold values for both Option 1 and Option 2. Furthermore, with implementation of Mitigation Measure GHG-3 for electric/non-diesel fueled forklifts and yard trucks, the combined cancer risks for both Option 1 and Option 2 would be further reduced below the significance threshold of 10 in a million for cancer risk.

O2A-14 CEQA does not require adoption of every imaginable mitigation measure. CEQA's requirement applies only to feasible mitigation that will "substantially lessen" a project's significant effects. (Public Resources Code, Section 21002.) As explained by one court: A lead agency's "duty to condition project approval on incorporation of feasible mitigation measures only exists when such measures would [avoid or] 'substantially lessen' a significant environmental effect." (*San Franciscans for Reasonable Growth v. City and County of San Francisco (1989) 209 Cal.App.3d 1502, 1519*.) "Thus, the agency need not, under CEQA, adopt every … mitigation scheme brought to its attention or proposed in the project EIR." (Ibid.) Rather, an EIR should focus on mitigation measures that are feasible, practical, and effective. (*Napa Citizens for Honest Government v. Napa County Board of Supervisors (2001) 91 Cal.App.4th 342, 365*.). Each of the measures presented by the commenter are reviewed and addressed in response to Comment O2A-16.

O2A-15 CEQA Guidelines Section 15096(g)(2) referred to by commenter describes a responsibility placed on to a Responsible Agency and is not applicable to a Lead Agency. Therefore, the comment has misapplied this referenced section. commenter does not provide other reasons to support their position that the Draft EIR fails to implement all feasible mitigation.

O2A-16 Review of the commenter's requested mitigation measures is addressed below:

- *Minimize unnecessary vehicular and machinery activities*. Commenter does not provide details on what "minimizing unnecessary" activities entail. The proposed project includes Mitigation Measure GHG-7, which would require placement of signage at various points and areas of the proposed project site to inform truck drivers to shut off engines when not in use and instruct truck drivers of diesel trucks to restrict idling to no more than five minutes once the vehicle is stopped. Furthermore, Mitigation Measure GHG-6 would require the proposed project to be designed to comply with CALGreen's Tier 2 nonresidential voluntary standards for the provision of parking spaces for low-emitting, fuel-efficient, and carpool/vanpool vehicles.

- *Require contractors to assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that could be used an aggregate of 40 or more hours for the construction project*. Prepare a plan for approval by the applicable air district demonstrating achievement of the applicable percent reduction for a CARB-approved fleet. Daily logging of the operating hours of the equipment should also be required. As discussed in Chapter 5.2, *Air Quality*, of the Draft EIR, the proposed project would not result in significant and unavoidable construction-related impacts. Although Impact 5.2-2 identified that project-related construction activities for Option 1 would generate emissions that exceed the South Coast AQMD regional significance threshold for VOC from the application of architectural paints, as discussed under Section 5.2.8, *Level of Significance After Mitigation*, on page 5.2.51 of the Draft EIR, implementation of Mitigation Measure AQ-1, which would require use of paints with low VOC content, would suffice in reducing VOC emissions from project-related construction activities to below the significance threshold. Thus, regional impacts to air quality from project-related construction activities would be sufficiently reduced to a less than significant level with Mitigation Measure AQ-1.

- *Ensure that all construction equipment is properly tuned and maintained.* As discussed in Chapter 5.2, *Air Quality*, of the Draft EIR, the proposed project would not result in significant and unavoidable construction-related impacts. Although Impact 5.2-2 identified that project-related construction activities for Option 1 would generate emissions that exceed the South Coast AQMD regional significance threshold for VOC from the application of architectural paints, as discussed under Section 5.2.8, *Level of Significance After Mitigation*, on page 5.2.51 of the Draft EIR, implementation of Mitigation Measure AQ-1, which would require use of paints with low VOC content, would suffice in reducing VOC emissions from project-related construction activities to below the significance threshold. Thus, regional impacts to air quality from project-related construction activities would be sufficiently reduced to a less than significant level with Mitigation Measure AQ-1.

- *Minimize idling time to 5 minutes or beyond regulatory requirements – saves fuel and reduces emissions*. Mitigation Measure GHG-7 requires placement of signage of truck access gates, loading docks, and truck parking areas that identifies instructions for drivers of diesel trucks to restrict idling to no more than five minutes once the vehicle is stopped.

- *Requiring tenants to use zero-emission light- and medium-duty vehicles as part of business operations*. At present, requiring zero-emission vehicles is technologically infeasible. Also, such vehicles are not available on a large enough scale to be relied upon.

  For example, the International Council on Clean Transportation (ICCT) provides an overview of advancing zero-emission technologies in a report titled, "*Transitioning to*

*Zero-Emission Heavy-Duty Freight Vehicles*," (see Appendix B of this Final EIR).[30] The ICCT reports that although the technology is advancing and although at some point in the distant future non-diesel technology will likely be used in mass to power freight movement, "zero-emission vehicle technologies do present considerable challenges. They have a combination of near- and long-term barriers, issues, and questions that will have to be addressed before they can become widespread replacements for conventional trucks and tractor-trailers that are typically diesel fueled" (ICCT pg. 31). Barriers include limited range and charging time. Level 2 charging can take up to 80 to 100 hours to fully charge a 600-kWh heavy duty battery, while a 100-kW direct current (DC) fast charger could take 6 hours.[31] Another barrier could be the current number of chargers available for electric-powered trucks. As of January 2024, it is estimated that only 5,000 chargers capable of serving heavy-duty vehicles are available in the United States and only 9 are public fast charging stations capable of serving heavy trucks. While an additional 15 240-kW DC fast chargers and 3 1,200-kW megawatt chargers came online in the City of Bakersfield in May 2024, the number of chargers would still be low. The California Energy Commission estimated that California will need 114,500 chargers with 5,500 being en-route chargers by 2030 and 264,500 chargers with 8,500 being en-route chargers by 2035.[32]

Furthermore, South Coast Air Quality Management District (South Coast AQMD) noted that "some trucks will have longer wait times for zero emission technology to be commercialized (e.g., Class 8 trucks) (South Coast AQMD pg. 211).[33] South Coast AQMD also notes that the "technical feasibility of some WAIRE Menu actions are not considered technically feasible today (e.g., ZE Class 8 trucks)…" (South Coast AQMD pgs. 75-76). While it is also noted "…they are expected to become commercialized in the next two years…", this timeframe illustrates the potential limited availability of ZE Class 8 trucks. Additionally, the California Air Resources Board (CARB) also acknowledges this in response to a comment regarding generally increasing the sales requirements for Class 2b, 3, 7, and 8 categories required under CARB's Advanced Clean Trucks Regulation. CARB noted that, "The approved regulation does not achieve the same total vehicle sales goal some commenters suggest due to concerns about the feasibility of manufacturers to comply with even

30 International Council on Clean Transportation. 2017. Transitioning to Zero-Emission Heavy-Duty Freight Vehicles. https://theicct.org/wp-content/uploads/2021/06/Zero-emission-freight-trucks_ICCT-white-paper_26092017_vF.pdf

31 UC Berkeley School of Law, Energy & the Environment and UCLA School of Law's Emmett Institute on Climate Change and the Environment. 2024. August. Fueling & Financing: Addressing the Urgent Challenge Facing Electric Heavy-Duty Vehicle Deployment. https://www.law.berkeley.edu/wp-content/uploads/2024/08/Fueling-Financing.pdf

32 UC Berkeley School of Law, Energy & the Environment and UCLA School of Law's Emmett Institute on Climate Change and the Environment. 2024. August. Fueling & Financing: Addressing the Urgent Challenge Facing Electric Heavy-Duty Vehicle Deployment. https://www.law.berkeley.edu/wp-content/uploads/2024/08/Fueling-Financing.pdf

33 South Coast Air Quality Management District. 2021, April. Second Draft Staff Report Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program and Proposed Rule 316 – Fees for Rule 2305. https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/pr-2305_sr_2nd-draft_4-7-21_clean.pdf?sfvrsn=8

higher sales requirements especially for Class 2b-3 vehicles and tractors. At this time, both Class 2b-3 and Class 7-8 tractors have more focused concerns about payload, range, towing, charging/refueling infrastructure, and model availability than other vehicles. These issues will present more challenges in identifying suitable applications for their deployment in the early market. Increasing the number of ZEV sales further also increases the likelihood that manufacturers would need to produce more costly long-range vehicles, and that vehicles may need to be placed in applications where they may not be fully suitable. Therefore, the Board determined that the approved regulation is the most feasible path to meet ZEV deployment goals at this time." (CARB pg. 99)[34] Requiring the proposed project to utilize emerging technology as mandatory mitigation when the various types of technological advancements and their timeframes for common availability are not known with any certainty, is not a feasible mitigation measure.

An EIR must describe feasible measures that could minimize the project's significant adverse impacts. 14 Cal Code Regs Section 15126.4(a)(1). An EIR may decline to propose a mitigation measure that would not effectively address a significant impact. An EIR also need not identify and discuss mitigation measures that are infeasible. Nor must an EIR analyze in detail mitigation measures it concludes are infeasible. Further, South Coast AQMD adopted a Warehouse Indirect Source Rule, Rule 2305, in May 2021. Rule 2305 applies to warehouse operators and owners of warehouses greater than or equal to 100,000 square feet of indoor floor space within a single building that may be used for warehousing activities.

The proposed project would be subject to compliance with Rule 2305. See response to Comment O1-5 for details regarding this rule. Since the proposed project would not be operated by the current owner, it is not feasible to commit to specific provisions of Rule 2305; however, future tenants will be obligated to comply with its provisions. Compliance with Rule 2305 would reduce air quality effects associated with the warehouse industry, including the proposed project in the region. However, requiring zero-emission vehicles is currently economically and technologically infeasible; also, such vehicles are not available on a large enough scale to be relied upon. Therefore, the current technology required for electric truck charging stations is unknown until such time tenants have electric trucks domiciled onsite.

Additionally, the 2022 California Green Building Standards Code (CALGreen) includes mandatory electric medium-duty and heavy-duty truck charging readiness requirements for warehouses under Section 5.106.5.5.1. Pursuant to this section, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(s), or subpanel(s) must be installed at the time of construction and must meet the minimum

[34] California Air Resources Board. 2021, March. Advanced Clean Trucks Regulation: Final Statement of Reasons. https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/fsor.pdf.

power requirements to accommodate the dedicated branch circuits for the future installation of electric vehicle charging equipment and to carry the minimum additional system load to the future location of the charging for medium- and heavy-duty vehicles. The minimum power requirement is based on building type, building size, and number of off-street loading spaces.

- *Forbidding trucks from idling more than three minutes and requiring operators to turn off engines when not in use*. At the request of the commenter, this measure has been added to Mitigation Measure GHG-7 (see Chapter 3, *Revisions to the Draft EIR*, of this Final EIR).

- *Posting both interior- and exterior-facing signs, including signs directed at all dock and delivery areas, identifying idling restrictions and contract information to report violations to CARB, the local air district, and the building manager*. Mitigation Measure GHG-7 requires placement of signage of truck access gates, loading docks, and truck parking areas that identifies telephone numbers of the building facilities manager and CARB to report violations.

O2A-17 Review of the commenter's requested mitigation measures is addressed below:

- *Incorporate bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; and planning for and building local bicycle projects that connect with the regional network*. As discussed in Impact 5.13-1 on pages 5.13-23 and 5.13-24 of the Draft EIR, the proposed project would include a 750-foot-long, 5-foot-wide meandering public sidewalk and minimum 20-foot-wide landscaped parkway on the north side of the portion of Live Oak Avenue that abuts the project site. The proposed project also includes a proposed minimum 5-foot-wide sidewalk along both sides of Live Oak Lane and 10-foot-wide landscaped setbacks along the section of Live Oak Lane that abuts the project site. The existing sidewalk along the south side of Arrow Highway would be repaired as required by the City. The proposed project would also provide 23 bicycle parking spaces. Additionally, per Mitigation Measure T-2, the project applicant would be required to modify the public sidewalk and landscaping along the north side of the portion of Live Oak Avenue that abuts the project site to include accommodation of a Class IV trail consistent with the City of Irwindale Active Transportation Plan to create a portion of the connection to the San Gabriel River Trail.

- *Improving transit access to rail and bus routes by incentives for construction and transit facilities within developments, and/or providing dedicated shuttle service to transit stations*. As discussed under Impact 5.13-1 on page 5.13-22 of the Draft EIR, pursuant to Chapter 17.66.030 of the municipal code, the proposed project would also include a bulletin board, display case, or kiosk displaying transportation information located where the greatest number of employees are likely to see it. Information would include current maps,

routes, and schedules for public transit routes serving the site, and numbers for local transit operators. Additionally, the proposed project includes Mitigation Measure T-1, which requires the project applicant to coordinate with Foothill Transit and the City of Irwindale to install a bus stop at Live Oak Avenue and Live Oak Lane for the Foothill Transit Line 492. The design and installation of the bus stop would be coordinated with Foothill Transit and shall be paid for by the project applicant.

- *Designate a percentage of parking spaces for ride-sharing vehicle or high-occupancy vehicles, and provide adequate passenger loading and unloading for those vehicles*. The proposed project includes Mitigation Measure GHG-6, which requires surface parking lots to provide parking for low-emitting, fuel-efficient, and carpool/van vehicles associated with trips to the proposed project's buildings. At minimum, the number of preferential parking spaces needs to meet the standards under Section A5.106.5.1.2 of the Tier 2 Nonresidential Voluntary Measures of CALGreen.

- *Implement preferential parking permit program*. The proposed project includes Mitigation Measure GHG-6, which requires surface parking lots to provide parking for low-emitting, fuel-efficient, and carpool/van vehicles associated with trips to the proposed project's buildings. At minimum, the number of preferential parking spaces needs to meet the standards under Section A5.106.5.1.2 of the Tier 2 Nonresidential Voluntary Measures of CALGreen.

- *Encourage telecommuting and alternative work schedules, such as: staggered starting times; flexible schedules; compressed work weeks; and implement commute trip reduction marketing such as 1) new employee orientation of trip reduction and alternative mode options, 2) event promotions, and 3) publications.* The proposed project includes Mitigation Measure GHG-5, which in accordance with the City of Irwindale's Municipal Code Section 17.66, *Trip Reduction and Travel Demand Measures* requires a business to prepare, implement and demonstrate compliance with a transportation demand management (TDM) program. The TDM program may provide for alternative work or compressed work schedules.

- *Price workplace parking such as: explicitly charging for parking for its employees; implementing above market rate pricing; validating parking only for invited guests; not providing employee parking and transportation allowances; and educating employees about available alternatives.* The proposed project includes Mitigation Measure GHG-5, which requires a business to submit and implement a transportation demand management (TDM) program for reducing the use of single occupant vehicles by employees by increasing carpool/vanpool participation and transit use.

- *Adopting employer trip reduction measures to reduce employee trips such as vanpool and carpool programs, providing end-of-trip facilities, and telecommuting programs including but not limited to measures that: Provide transit passes; Provide incentives or subsidies that increase that use of modes*

*other than single-occupancy vehicle; Provide on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms; Provide employee transportation coordinators at employment sites; and Provide a guaranteed ride home service to users of non-auto modes.* The proposed project includes Mitigation Measure GHG-5, which requires a business to submit and implement a transportation demand management (TDM) program for reducing the use of single occupant vehicles by employees by increasing carpool/vanpool participation and transit use.

- *Requiring all stand-by generators to be powered by a non-diesel fuel.* The proposed project includes Mitigation Measure GHG-3, which requires generators to be non-diesel fueled.

- *Meeting CALGreen Tier 2 green building standards, including all provisions related to designated parking for clean air vehicles, electric vehicle charging, and bicycle parking.* The proposed project includes Mitigation Measure GHG-6, which requires surface parking lots to provide parking for low-emitting, fuel-efficient, and carpool/van vehicles associated with trips to the proposed project's buildings. At minimum, the number of preferential parking spaces needs to meet the standards under Section A5.106.5.1.2 of the Tier 2 Nonresidential Voluntary Measures of CALGreen. Additionally, Mitigation Measure GHG-6 also requires the proposed project to install electricity vehicle charging spaces that complies with the CALGreen Tier 2 Nonresidential Voluntary standards. Furthermore, as stated on page 5.13-22 in Chapter 5.13, Transportation, of the Draft EIR, the proposed project would also provide 23 bicycle parking spaces.

- *Designing to LEED green building certification standards.* Buildings onsite would be required to adhere to the latest CALGreen mandatory requirements as well as additional voluntary standards of CALGreen as identified in Mitigation Measures GHG-6 for electric vehicle charging. Furthermore requirements under Mitigation Measures GHG-1 through GHG-3 would contribute towards higher energy efficiency and use of renewable and carbon-free electricity.

- *Constructing zero-emission truck charging/fueling stations proportional to the number of dock doors at the project.* Mitigation Measure GHG-3 requires electrification of docking bay for cold storage facilities for trucks with TRUs. Heavy duty electric trucks do not charge at docking bays, as they serve to facilitate the loading and unloading of goods. However, the 2022 CALGreen standards include mandatory electric medium-duty and heavy-duty truck charging readiness requirements for warehouses under Section 5.106.5.5.1. Pursuant to this section, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(s), or subpanel(s) must be installed at the time of construction and must meet the minimum power requirements to accommodate the dedicated branch circuits for the future installation of electric vehicle charging equipment and to carry the minimum additional system load to the

future location of the charging for medium- and heavy-duty vehicles. The minimum power requirement is based on building type, building size, and number of off-street loading spaces. However, requiring zero-emission vehicles is currently economically and technologically infeasible; also, such vehicles are not available on a large enough scale to be relied upon. Therefore, the current technology required for electric truck charging stations is unknown until such time tenants have electric trucks domiciled onsite.

- *Running conduit to designated locations for future electric truck charging stations.* The proposed project includes Mitigation Measure GHG-4, which requires conduit to be installed from the electrical room to tractor-trailer parking spaces in logical locations on-site to facilitate future electric truck charging.

- *Constructing and maintaining electric light-duty vehicle charging stations proportional to the number of employee parking spaces (for example, requiring at least 10 percent of all employee parking spaces to be equipped with electric vehicle charging stations of at least Level 2 charging performance).* The proposed project would include Mitigation Measures GHG-6, which would require the project to comply with the CALGreen Tier 2 Nonresidential Voluntary standards for electric vehicle parking. No changes are warranted.

- *Running conduit to an additional proportion of employee parking spaces for a future increase in the number of electric light-duty charging stations.* The proposed project would include Mitigation Measures GHG-6, which would require the project to comply with the CALGreen Tier 2 Nonresidential Voluntary standards for electric vehicle parking. No changes are warranted.

- *Providing meal options onsite or shuttles between the facility and nearby meal destination*s. CEQA does not require adoption of every imaginable mitigation measure. CEQA's requirement applies only to feasible mitigation that will "substantially lessen" a project's significant effects. (Public Resources Code, Section 21002.) As explained by one court: A lead agency's "duty to condition project approval on incorporation of feasible mitigation measures only exists when such measures would [avoid or] 'substantially lessen' a significant environmental effect." (*San Franciscans for Reasonable Growth v. City and County of San Francisco (1989) 209 Cal.App.3d 1502, 1519*.) "Thus, the agency need not, under CEQA, adopt every … mitigation scheme brought to its attention or proposed in the project EIR." (Ibid.). This measure identified by commenter could potentially help reduce passenger vehicle trips and emissions from passenger vehicle trips. However, as shown in Table 5.6-5 and Table 5.6-6 on pages 5.6-21 and 5.6-22, respectively, of the Draft EIR, mobile emissions from heavy duty trucks would be the primary source of project GHG emissions and would, in and of itself, substantially exceed the South Coast Air Quality Management GHG emissions significance threshold. The next highest source of GHG emissions would be from

the energy sector followed by mobile emissions from passenger vehicles. Thus, this type of measure would not substantially lessen the project's significant effects as it pertains to GHG emissions impacts. No changes are warranted.

- *Posting signs at every truck exit driveway providing directional information to the truck route*. At the request of the commenter, this measure has been added to Mitigation Measure GHG-7 (see Chapter 3, *Revisions to the Draft EIR*, of this Final EIR).

- *Requiring tenants to enroll in the United States Environmental Protection Agency's SmartWay program, and requiring tenants who own, operate, or hire trucking carriers with more than 100 trucks to use carriers that are SmartWay carriers; and The US EPA SmartWay Program is a voluntary public-private program*. The proposed project cannot control the types of trucks accessing planning areas within the Specific Plan. Because the building occupants/tenants are not yet known, it is highly speculative to assume that the building occupants/tenants will own or control a fleet of trucks. The large majority of warehouses are served by contracted trucking companies and independent drivers, and the building occupant/tenant may have no control over the truck engine type, in which case the building occupant/tenant would need to comply with Rule 2305's requirements through a suite of equivalent measures or payment of the required fee to reduce air quality impacts as required by the Rule. See response to Comment O1-5 for details regarding this rule. However, at the request of the commenter, information on the SmartWay program has been added to Mitigation Measure GHG-3 (see Chapter 3, Revisions to the Draft EIR, of this Final EIR).

- *Providing tenants with information on incentive programs, such as the Carl Moyer Program and Voucher Incentive Program, to upgrade their fleets*. At the request of the commenter, this measure has been added to Mitigation Measure GHG-3 (see Chapter 3, *Revisions to the Draft EIR*, of this Final EIR).

O2A-18 See response to Comment O1-7.

O2A-19 See responses to Comments O2A-1 through O2A-18.

# 2. Response to Comments

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LETTER O2b – Golden State Environmental Justice Alliance, Joe Bourgeois, Executive Director (1 page)

Golden State Environmental Justice Alliance
Green Jobs & Clean Communities
P.O. Box 79222
Corona, CA 92877

August 7, 2024

Brandi Jones
Senior Planner
City of Irwindale

Re: Irwindale Gateway Specific Plan, SCH Number 2023020290

Dear Ms. Jones:

On behalf of the Golden State Environmental Justice Alliance ("GSEJA"), I am writing to you regarding the Irwindale Gateway Specific Plan, SCH Number 2023020290 ("Project").

GSEJA is withdrawing its comment letter and opposition to the Project. The Project's developer has addressed GSEJA's concerns about environmental mitigation.

O2B-1

Sincerely,

Joe Bourgeois
Executive Director

# 2. Response to Comments

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**O2B Response to Comments from Golden State Environmental Justice Alliance, dated August 7, 2024**

O2B-1 Comment acknowledged.

# 2. Response to Comments

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# 3. Revisions to the Draft EIR

## 3.1 INTRODUCTION

This section contains revisions to the DEIR based upon (1) additional or revised information required to prepare a response to a specific comment; (2) applicable updated information that was not available at the time of DEIR publication; and/or (3) typographical errors. This section also includes additional mitigation measures to fully respond to commenter concerns as well as provide additional clarification to mitigation requirements included in the DEIR. The provision of these additional mitigation measures does not alter any impact significance conclusions as disclosed in the DEIR. Changes made to the DEIR are identified here in ~~strikeout text~~ to indicate deletions and in <u>underlined text</u> to signify additions.

## 3.2 DEIR REVISIONS IN RESPONSE TO WRITTEN COMMENTS

The following text has been revised in response to comments received on the DEIR.

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Pages 5.6-26, Section_5.6.7, Mitigation Measures. The following changes are made in response to Comment O1-3 from Advocates for the Environment.

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GHG-5 In accordance with the City of Irwindale's Municipal Code Section 17.66, *Trip Reduction and Travel Demand Measures,* shall make provision for each of the TDM measures outlined in Section 17.66.030 B, *Development Standards* and shall comply with the *Monitoring* requirements in Section 17.66040. The project applicant shall demonstrate compliance with each measure in a written report submitted to the city prior to the issuance of a building permit and show compliance prior to the issuance of certificate of occupancy. The Transportation Demand Management (TDM) Program shall include detailed strategies for reducing the use of single occupant vehicles by employees by increasing carpool/vanpool participation and transit use. Additionally, the TDM program may provide for alternative work or compressed work schedules to reduce the number of days an employee commutes to work.

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Pages 5.6-25 and 5.6-26, Section_5.6.7, Mitigation Measures. The following changes are made in response to Comment O1-6, from Advocates for the Environment.

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GHG-3 Prior to issuance of an occupancy permit for a new tenant/business entity, the project developer/facility owner and tenant/business entity shall provide to the City of Irwindale Community Development Department a signed document (verification document) noting that the project development/facility owner has disclosed to the tenant/business entity the requirement to implement the following measures:

- A solar photovoltaic (PV) system associated with proposed project buildings. The PV system shall be designed to comply with Section 140.10, *Prescriptive Requirements for Photovoltaic and Battery Storage Systems*, of the 2022 Building Energy Efficiency Standards. For purposes of this mitigation measure, battery storage modules are not considered buildings.
- High-efficiency lights (>50 percent of fixtures) to reduce energy usage.
- All major end-user appliances (e.g., dishwashers and refrigerators) installed are Energy Star certified or of equivalent energy efficiency where applicable.
- All landscape equipment (e.g., leaf blower) used for property management shall be electric powered only. The property manager/facility owner shall provide documentation (e.g., purchase, rental, and/or services agreement) to the Planning Department to verify, to the City's satisfaction, that all landscaping equipment utilized will be electric powered, as allowed.
- All on-site outdoor cargo-handling equipment (including yard trucks, hostlers, yard goats, pallet jacks, forklifts, generators, pumps, and other on-site equipment) shall be electric or non-diesel fueled. All on-site indoor forklifts shall be powered by electricity.
- All truck/dock bays that serve cold storage facilities within the proposed buildings shall be electrified to facilitate plug-in capabilities and support use of electric standby and/or hybrid electric transport refrigeration units.
- Prior to the issuance of a building permit, the site plan shall include the minimum number of automobile electric vehicle charging stations in accordance with the requirements of the Tier 2 Nonresidential Voluntary Measures of CALGreen Section A5.106.5.3, Electric vehicle (EV) charging. ~~required by the California Code of Regulations Title 24.~~

In addition, the project developer/facility owner has provided the following:

- Occupants/tenants shall be provided documentation on the United States Environmental Protection Agency's SmartWay program.
- Occupants/tenants shall be provided documentation on funding opportunities, such as the Carl Moyer Program, that provide incentives for using cleaner-than—required engines and equipment.

This verification document shall be signed by authorized agents for the project developer/facility owner and tenant/business entities. In addition, if applicable, the tenant/business entity shall provide documentation (e.g., purchase or rental agreement) to the City of Irwindale Community Development Department to verify, to the City's satisfaction, compliance with these measures.

Page 5.6-26, Section_5.6.7, Mitigation Measures. The following changes are made in response to Comment O2A-16 and Comment O2A-17 from SWAPE.

GHG-7 Prior to issuance of an occupancy permit, a new tenant/business entity shall place legible, durable, weather-proof signs at truck access gates, loading docks, and truck parking areas that identify applicable California Air Resources Board (CARB) anti-idling regulations. At a minimum, each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict idling to no more than three ~~five~~ minutes once the vehicle is stopped, the transmission is set to "neutral" or "park," and the parking brake is engaged; 3) directional text on the sign shall read "To Truck Route" with a directional arrow. and ~~3)~~ 4) telephone numbers of the building facilities manager and CARB to report violations. The City shall conduct a site inspection to ensure that the signs are in place.

Page 5.9-11, Table 5.2-9, Section_5.15.1.4, Environmental Impacts, Impact 5.9-2. The following changes are made in response to Comment O2-1, from Blum, Collins, & Ho LLP.

| | |
|---|---|
| Issue Area: Resource Preservation. The City of Irwindale will maintain and preserve those natural and man-made amenities that contribute to the City's livability. | |
| RME Policy 11. The City of Irwindale supports the ethic of conservation of non-renewable resources. This includes efforts to reduce the use of energy (in any form), greenhouse gas (GHG) emissions (consistent with AB 32) and efforts to find new and more energy efficient methods for delivering services. The City supports the development of building standards that enable the community to design energy saving features such as solar energy systems, water efficient landscaping, and sustainable, green, and energy efficient building standards. | *Consistent.* Development within the Specific Plan would be required to comply with the California Green Building Standards Code (CALGreen) and incorporate additional sustainable design features that minimize water use and maximize energy efficiency. Refer to the mitigation measures recommended in Section 5.2, *Air Quality*, and Section 5.6, *Greenhouse Gas Emissions*. ~~Further, through redevelopment of a former quarry/inert landfill site that has been depleted of recoverable mineral resources to a productive employment-generating end use.~~ Development of Option 2, including the BESS, would be expected to further help facilitate renewable energy within the region. The proposed project would be consistent with this policy. |

Page 5.15-3, Section 5.15.1.1, Environmental Setting, Existing Conditions. The following changes are made in response to Comment A1-1, from the Los Angeles County Sanitation Districts.

### *Wastewater Conveyance*

An existing 10-inch sewer line and 15-inch sewer line run along Live Oak Avenue and Commerce Drive/Center Street, respectively, both to the east side of the project. These sewer lines are designed to drain south to the main 18-inch trunk line on Ramona Parkway, conveying the sewer load from the existing commercial/industrial developments on the northeast corner of Live Oak Avenue and Rivergrade Road and from the commercial/industrial development on the north side of Rivergrade Road.

# 3. Revisions to the Draft EIR

The 10-inch sewer line on Live Oak Avenue is under the jurisdiction of the City of Irwindale, and the 15-inch sewer line on Commerce Drive and Center Street is under the jurisdiction of the City of Baldwin Park. The 18-inch trunk line in ~~Romana~~ Ramona Parkway is under the jurisdiction of LACSD. The LACSD trunk sewer has a capacity of 4.8 million gallons per day (mgd) and conveyed a peak flow of 2.1 mgd when last measured in 2013.

### *Wastewater Treatment*

The LACSD's 18-inch trunk main in ~~Romona~~ Ramona Parkway conveys wastewater to be treated at the San Jose Creek WRP, adjacent to the City of Industry. The San Jose Creek WRP has a capacity of 100 mgd and currently processes an average flow of 61.2 mgd (see Appendix M2).

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Page 5.15-13, Section 5.15.1.4, Environmental Impacts, Impact 5.15-1. The following changes are made in response to Comment A1-3, from the Los Angeles County Sanitation Districts.

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### *Wastewater Treatment*

Buildout of the Specific Plan would generate 310,232 gpd (or 0.031 mgd) of wastewater that would need to be treated at the San Jose Creek WRP, which has a residual capacity of 38.8 mgd. Therefore, implementation of the Specific Plan would contribute to an increased sewage flow equivalent to less than 1 percent of the WRP's residual capacity, and thus no new or expanded water reclamation plant facilities would be needed. It should be noted that the sewer generation calculated for Option 1 is based on highly conservative factors from the Los Angeles Public Works Department. The analysis is based on the Sewer Area Study (see Appendix M2) conducted for the proposed project which is primarily concerned with the capacity of the existing sewer pipelines in the project vicinity and the need for any offsite upgrades to the system. Sewer generation factors associated with pipeline capacities are typically much more conservative than sewer generation factors related to actual sewer generation since they relate to worse case scenarios. LACSD provides a sewer factor of 0.025 gpd/sf for warehousing and 0.2 gpd/sf for office buildings (LACSD 2024). Using these factors Option 1 would produce 32,470 gpd.

Additionally, the San Jose Creek WRP is required by federal and state law to meet applicable standards of treatment plant discharge requirements subject to NPDES No. CA0053911. The permit includes the conditions needed to meet minimum applicable technology-based requirements. The NPDES permit regulates the amount and type of pollutants that the system can discharge into receiving waters. The San Jose Creek WRP is operating in compliance with and would continue to operate subject to state waste discharge requirements and federal NPDES permit requirements, as set forth in the NPDES permit and order.

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Page 5.15-50, Section 5.15.9, References. The following changes are made in response to Comment A1-3, from the Los Angeles County Sanitation Districts.

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Lockhart, Linda (environmental protection specialist II). 2023, May 10. Email Response. Waste Management Inc., El Sobrante Landfill.

Los Angeles County. 2005, October 12. Policies for Managing Available Sewer Capacity and Sewage Discharge in Excess of Design Capacity. https://pw.lacounty.gov/ldd/lddservices/sewerAreaStudy/docs/Sewer%20Capacity%20Policy%20Memo%2010-12-05.pdf.

Los Angeles County Sanitary Districts (LACSD). 2024, June 30 (accessed). Loadings for Each Class of Land Use. https://www.lacsd.org/home/showpublisheddocument/3644/637644575489800000.

Los Angeles County Public Works (LACPW). 2023. Estimated Average Daily Sewage Flow for Various Occupancies. https://pw.lacounty.gov/ldd/lddservices/sewerAreaStudy/docs/Estimated%20Average%20Daily%20Sewage%20Flow%20for%20Various%20Occupancies.pdf.

Meeka, Darenn (deputy director). 2021, June 8. Telephone Conversation. County of San Bernardino Solid Waste Management Division.

Southern California Edison (SCE). 2021. Power Content Label: 2021. https://www.sce.com/sites/default/files/custom-files/Web%20files/2021%20Power%20Content%20Label.pdf.

Valley County Water District. 2021, June. 2020 Urban Water Management Plan. https://www.vcwd.org/DocumentCenter/View/505/2020-Urban-Water-Management-Plan-PDF.

## 3.3 DEIR REVISIONS DUE TO UPDATED INFORMATION

The following text has been revised in line with applicable updated information that was not available at the time of DEIR publication.

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Page 3-7, Section 3.3.1.2, Development Plan, Infrastructure, Stormwater. The following changes are made due to a proposed second alternative for the storm drain that connects the onsite detention basin to the final storm water disposal point. This alternative was not known when the DEIR was released for public review.

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### *Stormwater*

The project site drains to off-site conveyances maintained by the Los Angeles County Flood Control District (LACFCD). The proposed project would construct a new ~~24-inch gravity~~ storm drain that connects the proposed detention basin on site to the LACFCD conveyance system with two alternatives proposed (see Figure 3-14). ~~that connects to the existing storm drain on Live Oak Avenue~~ Alternative 1 includes a storm-drain from the proposed detention basin to Live Oak Avenue which outfalls to the San Gabriel River, located to the southeast of the project site. Alternative 2 includes a storm drain that crosses beneath Live Oak Lane and outfalls into the Santa Fe Headworks/Diversion Channel northeast of the site. Development projects would connect to these facilities and would be required to comply with stormwater permitting regulations of County Flood Control. Stormwater would be collected through a network of basins and bioswales throughout the Specific Plan area. Development projects would connect to these facilities and would be required to comply with stormwater permitting regulations of County Flood Control. Individual development projects would use a variety of low-impact development (LID) measures and best management practices (BMP) to manage stormwater. The primary LID measure for the proposed project is detention basins, capable of retaining the required water volumes, designed with either soft bottoms and/or dry wells for infiltration purposes as water

quality measures. Where feasible, subsurface storage chambers, capture and reuse, biofiltration, and/or inlet fillers could also be implemented. The type and extent of the water quality infiltration measures would ultimately be determined based on the proposed project's geotechnical report findings and recommendations. All LID measures and BMPs would comply with the County of Los Angeles Building Code as adopted by the City and require grading and drainage permits from the Building and Safety Division.

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Page 5.8-1, Section 5.8, Hydrology and Water Quality. The following changes are made due to an update made to the Preliminary Hydrology Report (Appendix I1) after the DEIR was released for public review. The updated appendix is included in this FEIR.

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# 5.8 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts of the proposed Irwindale Gateway Specific Plan to hydrology and water quality conditions in the City of Irwindale. Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface- and groundwater. Surface water includes lakes, rivers, streams, and creeks; groundwater is under the earth's surface. The analysis in this section is based in part on the following technical reports:

- *Preliminary Hydrology Report*, David Evans and Associates, ~~March 20, 2023~~ June 19, 2024
- *Preliminary LID Report*, David Evans and *Associates, March 20, 2023*
- *Water Supply Assessment, Stetson Engineers, March 2023*
- *Geotechnical Engineering Exploration Update and Remedial Grading Recommendations Proposed Commercial/Retail Development Nu-Way Live Oak Landfill, Irvine Geotechnical Inc., November 23, 2010*

Complete copies of these studies are included in the Technical Appendices to this Draft EIR as Appendices I1, I2, M3, and G1, respectively.

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Pages 5.8-16 and 5.8-17, Section 5.8.4, Environmental Impacts, Impact 5.8.1, Construction. The following changes are made due to a proposed second alternative for the storm drain that connects the onsite detention basin to the final storm water disposal point. This alternative was not known when the DEIR was released for public review. Changes are also made in line with the updated Hydrology Report.

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Implementation of the Specific Plan would also require consultation with the USACE and RWQCB for the construction of ~~a~~ the proposed storm drain ~~(Line E) that would outfall to the San Gabriel River~~. The proposed project would construct a new storm drain that connects the proposed detention basin on site to the Los Angeles County Flood Control District (LACFCD) conveyance system with two alternatives proposed (see Figure 3-14). Alternative 1 includes a storm-drain from the proposed detention basin to Live Oak Avenue which

outfalls to the San Gabriel River, located to the southeast of the project site. Alternative 2 includes a storm drain that crosses beneath Live Oak Lane and outfalls into the Santa Fe Headworks/Diversion Channel northeast of the site. These activities could require authorization under Sections 404 and 401 of the CWA. If required, permits and certifications would be obtained prior to construction to ensure that the proposed development minimizes the potential for erosion and sediment discharge into the San Gabriel River and complies with water quality standards.

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Pages 5.8-17, 5.8-18, 5.8-19, and 5.8-20, Section 5.8.4, Environmental Impacts, Impact 5.8.1, Operations. The following changes are made due to a proposed second alternative for the storm drain that connects the onsite detention basin to the final storm water disposal point. This alternative was not known when the DEIR was released for public review. Changes are also made in line with the updated Hydrology Report.

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## Operations

Once the project area has been developed pursuant to the Specific Plan, urban runoff could include a variety of contaminants that could impact water quality. Runoff from buildings, streets, driveways, and parking lots typically contain oils, grease, fuel, antifreeze, and byproducts of combustion (such as lead, cadmium, nickel, and other metals) as well as fertilizers, herbicides, pesticides, and other pollutants. Precipitation at the beginning of the rainy season may result in an initial stormwater runoff (first flush) with high pollutant concentrations.

The Specific Plan is considered a "Designated Project" per the MS4 Permit since it disturbs more than one acre and adds more than 10,000 square feet of impervious surface area. As such, an LID Report is required for the proposed development to demonstrate that the Stormwater Quality Design volume (SWQDv) is treated on-site.[35]

The analysis in the Preliminary LID Report (see Appendix I2) represents the analysis for Option 1. Option 2 with the Battery Energy Storage System (BESS) is anticipated to have a similar drainage pattern and would not have any more area of impervious surface compared to Option 1. Therefore, the analysis in the Preliminary LID Report is conservative. Additionally, the proposed project would construct a new storm drain that connects the proposed detention basin on site to the LACFCD conveyance system with two alternatives proposed (see Figure 3-14). Alternative 1 includes a storm-drain from the proposed detention basin to Live Oak Avenue which outfalls to the San Gabriel River, located to the southeast of the project site. Alternative 2 includes a storm drain that crosses beneath Live Oak Lane and outfalls into the Santa Fe Headworks/Diversion Channel northeast of the site. The LID Report analyzes Alternative 1. If Alternative 2 is chosen, the final LID Report would reflect this change. The final LID Report would be submitted to the City for review and approval prior to commencing any ground disturbing activities.

Overall, the developed condition hydrology would follow the existing condition surface flow pattern, where drainage continues to flow south to the proposed detention basin. The existing pits would be hydraulically

[35] The MS4 Permit requires designated projects to treat, on-site, the Stormwater Quality Design Volume from a design storm event. The design storm event is determined using the 0.75-inch 24-hour rain event or the 85th percentile 24-hour rain event, whichever is greater.

connected through proposed storm drainpipes. The proposed drainage areas are shown on Figure 5.8-3, *Proposed Conditions Hydrology Map – Alternative 1*. The proposed on-site and off-site drainage can be described in five subdrainage areas:

- **Area A1** refers to the northerly drainage area that includes off-site drainage from the existing commercial site, proposed buildings 3 and 2, and pavement from parking stalls and drive aisles. The runoff would sheet flow to nearby catch basins, into the underground storm drain system, and into the proposed detention basin.

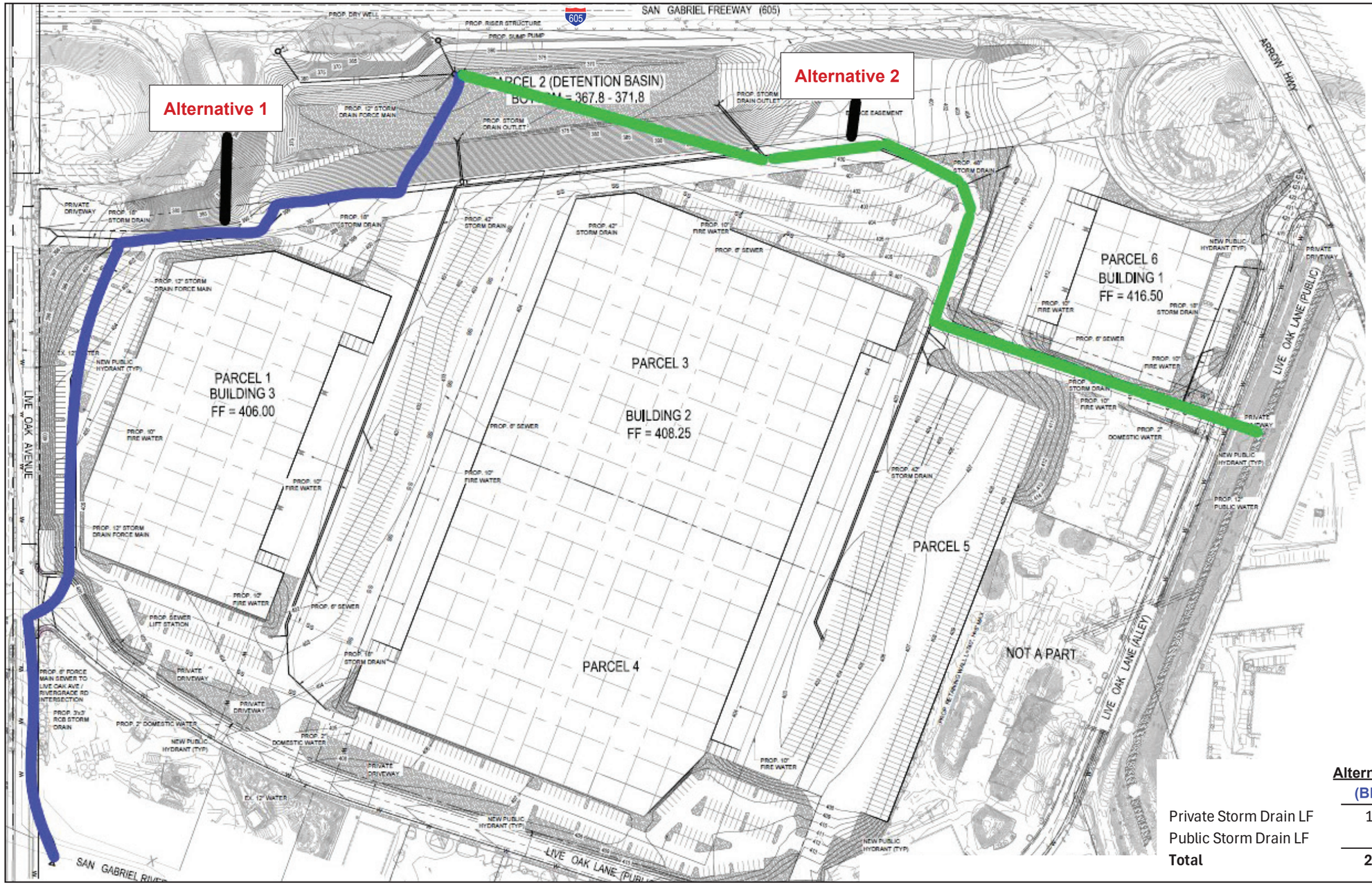
- **Area A2.1** refers to the on-site drainage in the middle of the site. This drainage area would include drainage from building 2, building 1, and pavement from the parking aisles and stalls. Stormwater will first drain to nearby catch basins, into the underground storm drain, and the into proposed detention basin.

- **Area A2.2** refers to the on-site drainage on the westerly side of the site. The drainage area includes drainage from building 1 and pavement from the parking isles and stalls. Stormwater enters the underground storm drain system through catch basins and then drains to the proposed detention basin.

- **Area A3** refers to the on-site drainage area that makes up the proposed detention basin. The basin is considered self-retaining and does not affect the on-site storm drain system. Runoff from the 85th percentile storm event would drain from the detention basins for on-site retention into two drywells[36] on the northwest boundary, adjacent to the basin and I-605. Any excess runoff associated with the 50-year storm event would be directed to a new proposed storm drain with two alternatives proposed (see Figure 3-14). ~~Line E on Live Oak Avenue, which outfalls to the San Gabriel River to the east of the project.~~

[36] A drywell is an underground cylindrical shaped container with holes in it. It is buried underground and surrounded by drain rock..

## Figure 3-14 - Storm Drain Alternatives




| | Alternative 1 (Blue) | Alternative 2 (Green) | Delta |
|---|---|---|---|
| Private Storm Drain LF | 1,560 | 1,700 | 140 |
| Public Storm Drain LF | 450 | 70 | (380) |
| **Total** | **2,010** | **1,770** | **(240)** |

0 200
Scale (Feet)

*Source: Kearny, 2024.*

# 3. Revisions to the Draft EIR

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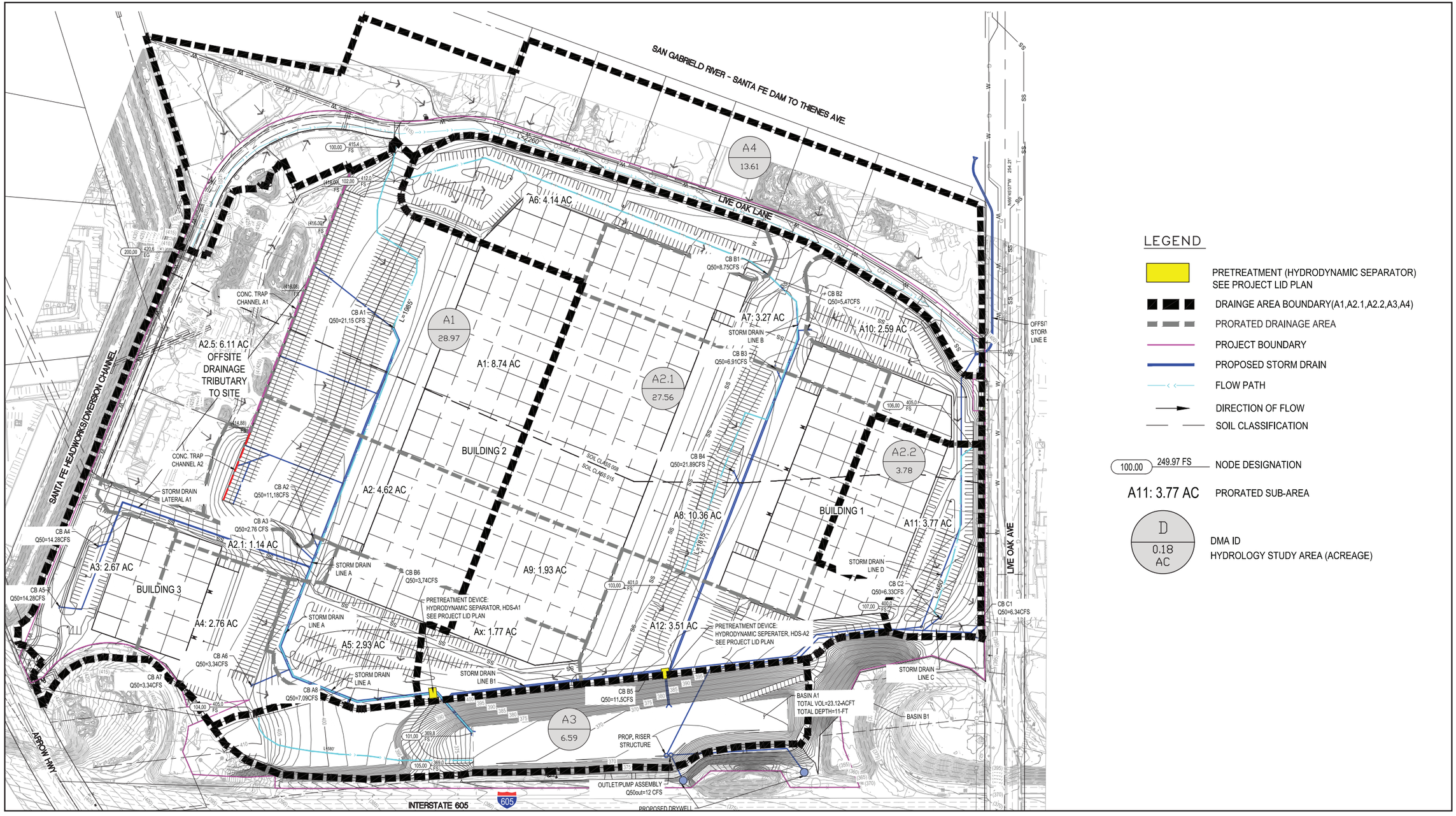
## Figure 5.8-3 - Proposed Conditions Hydrology Map–Alternative 1




*Source: David Evans & Associates, 2022.*

# 3. Revisions to the Draft EIR

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- **Area A4** refers to the off-site area to the east of the proposed project. The drainage area includes runoff from the existing businesses on Live Oak Lane and the existing street width, which includes the improved sections that are part of the Specific Plan development. Stormwater follows the existing flow path, draining south to Live Oak Avenue along the street gutters on Live Oak Lane. Under Alternative 1, ~~Stormwater~~ stormwater for this drainage area would ~~first~~ flow into ~~four modular wetlands systems (MWS) and then into~~ a catch basin~~. Water would drain into a proposed storm drain line~~ that would connect to ~~Line E~~ the proposed storm drain on Live Oak Lane and drain to the San Gabriel River. Under Alternative 2 runoff would either be routed to the onsite basin and drywells or by-pass the basin and be routed directly into the proposed storm drain that drains into the Santa Fe Headworks/Diversion Channel. The proposed project is not required to treat this offsite runoff per the requirements of MS4 Permit (Order No. R4-2021-0105, NPDES No. CAS004004) and Chapter 8.28 of the Irwindale municipal code. It should be noted that Appendix I2 analyzes routing runoff from this area to modular wetlands. The modular wetlands are no longer proposed, and the final LID Report would reflect this change.

For areas A1 through A3, the proposed LID system would take advantage of the native soils percolation rates to infiltrate the SWQDv from the 85th percentile, 24-hour storm. The on-site detention basin would be designed to accommodate the SWQDv while providing temporary storage for the two proposed drywells. The SWQDv is 203,413 cubic feet, or 4.67 acre-feet. The proposed detention basin has a volume of 22.62 acre-feet. The SWQDv for Area A4 is 45,088 cubic feet, or 1.03 acre-feet. Although not required, if Alternative 2 is chosen and runoff from drainage Area A4 is routed into the basin for treatment, the basin has enough residual capacity to accommodate this volume. Therefore, the detention basin has adequate capacity.

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Pages 5.8-21, 5.8-22, and 5.8-23, Section 5.8.4, Environmental Impacts, Impact 5.8.1, Operations. The following changes are made due a second alternative for the storm drain that connects the onsite detention basin to the final storm water disposal point. The following changes are made due to a proposed second alternative for the storm drain that connects the onsite detention basin to the final storm water disposal point. This alternative was not known when the DEIR was released for public review. Changes are also made in line with the updated Hydrology Report.

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The drywells would also take advantage of the infiltration capacity of native soils. Sizing and capacity analysis of the proposed drywell systems was calculated following the design guidelines defined in Los Angeles County Department of Public Works' (LACDPW) Low Impact Development Standards Manual for dry wells, which allows for a maximum drawdown time of 96 hours. For areas A1 through A3, ~~The~~ the proposed drywells result in a maximum drawdown time of 58 hours (see Table 5.8-2) and are therefore adequately sized. Although not required, if runoff from A4 is routed into the drywells for treatment under Alternative 2, the proposed drywells would result in a maximum drawdown time of 70 hours (see Table 5.8-2) and are therefore adequately sized.

# 3. Revisions to the Draft EIR

Table 5.8-2 Capacity Analysis for Proposed Drywells

| Area | Acreage (acres) | Drywell Disposal Rates (cfs) | Factor of Safety | Design Disposal Rate per Drywell (cfs) | Disposal Rate for Two Drywells (cfs) | SWQDv (cf) | Drawdown Time (hrs) |
|---|---|---|---|---|---|---|---|
| A-1 through A-3 | 66.9 | 1.22 | 2.5 | 0.49 | 0.98 | 203,413 | 57.9 |
| A-1 through A-4 | 80.5 | 1.22 | 2.5 | 0.49 | 0.98 | 248,504 | 70.4 |

Source: Appendix I2.
Notes: cfs = cubic feet per second; cf= cubic feet; hrs =hours; SWQDv=stormwater quality design volume

Additionally, the on-site drainage would be pretreated before entering the basin using two nutrient separating baffle boxes[37] to extend the life of the drywells. The baffle boxes are designed based on the treatment flow at maximum bypass flow, which is based on the 50-year storm event, with one baffle box for area A-1 and one for areas A-2.1 and A-2.2. As shown in Table 5.8-3, the baffle boxes have adequate capacity to accommodate the peak flows from the project site. If A4 is routed into the basin under Alternative 4, the nutrient separating baffle boxes would need to accommodate an additional 28.0 cfs. Both baffle boxes have a residual capacity that exceeds this volume and can accommodate this additional flow.

Table 5.8-3 Capacity Analysis for the Proposed Nutrient Separating Baffle Boxes

| Area | Acreage (acres) | SWQDv (cf) | $Q_{50}$ Bypass Flow (cfs) | Baffle Box Capacity (cfs) |
|---|---|---|---|---|
| A-1 | 29.0 | 96,010 | 70.1 | 102.7 |
| A2.1-A2.2 | 31.3 | 103,849 | 70.9 | 102.7 |
| A-4 | 13.6 | 45,088 | 28.0 | - |

Source: Appendix I2.
Notes: cfs = cubic feet per second; cf= cubic feet; SWQDv=Stormwater quality design volume

~~For area A4, treatment would occur through four modular wetlands systems. These areas are limited to space in the public right-of-way, and for that reason, compact biofiltration BMPs are the best option to treat stormwater from this area. The design would be based on the flow from the 85th percentile storm event. As shown in Table 5.8-4, the modular wetlands systems have adequate design capacity to treat runoff flows from area A4.~~

~~Table 5.8-4 Capacity Analysis for the Proposed Modular Wetland Systems~~

| ~~Area~~ | ~~Acreage (acres)~~ | ~~Q85 Treatment Flow (cfs)~~ | ~~Treatment Capacity (cfs)~~ |
|---|---|---|---|
| ~~A-4~~ | ~~13.6~~ | ~~2.3~~ | ~~2.4~~ |

~~Source: Appendix I2.~~
~~Notes: cfs = cubic feet per second~~

Proposed development would also implement source control measures to prevent pollutants from contacting stormwater runoff and prevent discharge of contaminated stormwater runoff to the storm drain system

[37] A nutrient separating baffle box is an advanced vault treatment system for storm water runoff. Its patented screen system is designed to capture and store debris in a dry state to minimize nutrient leaching and allow for easy servicing.

and/or receiving waters by providing physical separation of areas or careful management of activities that are sources of pollutants. The proposed source control measures include:

- Storm drain message and signage
- Outdoor trash storage/waste area
- Outdoor loading/unloading dock area
- Landscape irrigation practices

Additionally, LACDPW's Low Impact Development Standards Manual requires all projects in natural drainage systems that have not been improved (e.g., channelized or armored with concrete, shotcrete, or rip-rap) or drainage systems that are tributary to a natural drainage system to implement hydromodification controls. The project must fully mitigate off-site drainage impacts caused by hydromodification and changes in water quality, flow velocity, flow volume, and depth/width of flow. Since the proposed development would connect directly either to the San Gabriel River or the Santa Fe Headworks/Diversion Channel, which ~~is a~~ are County-engineered and -maintained facilities ~~facility~~, hydromodification impacts to natural streams would not occur, and hydromodification control measures are not required.

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Page 5.8-24, Section 5.8.4, Environmental Impacts, Impact 5.8.3, Operations. The following changes are made due a second alternative for the storm drain that connects the onsite detention basin to the final storm water disposal point. This alternative was not known when the DEIR was released for public review. Changes are also made in line with the updated Hydrology Report.

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Buildout of the Specific Plan would increase impervious areas on the project site. Per the requirements of the LACDPW, as detailed in the Los Angeles County Hydrology Manual and the Los Angeles County Hydraulic Design Manual, development under the proposed project would be required to have site-specific hydrology and hydraulic studies to determine the capacity of the existing storm drain systems and project impacts on such systems prior to approval by the LACDPW. The analysis in the Preliminary Hydrology Report (see Appendix I1), pursuant to the requirements of LACDPW, represents the hydrology and hydraulic analysis for Option 1. The proposed Option 1 contains a larger impervious area than Option 2 since the BESS site is anticipated to have a similar drainage pattern and would not have greater amount of impervious surface. Therefore, the analysis in the Preliminary Hydrology Report is conservative. Additionally, the Hydrology Report analyzes Alternative 1 for the offsite storm drain. If Alternative 2 is chosen, the final Hydrology Report would reflect this change.

LACDPW requires that the proposed basin regulates peak flows from the 50-Year 24-Hour storm event so that the post-development runoff does not exceed 1 cfs/acre. The project site, as analyzed in the Preliminary Hydrology Report under Alternative 1, is 66.9 acres, so the allowable maximum peak runoff flow is 66.9 cfs.[38] The 50-Year 24-Hour post-development flow for the Specific Plan development is 12 cfs. For Alternative 2, runoff from Area A-4 may be routed to the onsite basin. The peak flow rate for areas A1 through A4 for the

[38] The project site is 66.64 acres, so the analysis in the Preliminary Hydrology Report is conservative.

50-Year 24-Hr storm event is conservatively 39.96 cfs[39]. The total drainage area for this scenario is 80.51 acres and the post-development runoff should not exceed 80.51 cfs. Therefore, the basin has adequate capacity.

Additionally, the proposed storm drain on Live Oak Avenue (~~Line F~~ Alternative 1) would have a design capacity of 45.3 cfs and would convey runoff from the project site in addition to drainage area A4. Drainage area A4 would have a peak flow rate of 27.96 cfs for the 50-Year 24-Hr storm event. Therefore, ~~Line F~~ the storm drain would receive a total of 39.96 cfs and would be adequately designed to convey this flow. Furthermore, the storm drain under Alternative 2 would be designed using the same parameters as Alternative 1 and would result in a similar overall capacity. Once one of the two alternatives is chosen the Final Hydrology Report would reflect the chosen alternative. The Final Hydrology Report would be submitted to the City for review and approval prior to commencing any ground disturbing activities.

With the implementation of the on-site detention basin, and drywells~~, and the modular wetlands systems,~~ the Specific Plan would not substantially increase the rate or amount of surface runoff in a manner that would result in on- or off-site flooding or create stormwater runoff that would exceed the capacity of the storm drain system. The calculated stormwater runoff volume for 50-Year 24-Hour storm event under post-development conditions can be accommodated by the on-site storm drain system.

Additionally, development in accordance with the proposed project must be operated in accordance with the MS4 Permit (Order No. R4-2021-0105, NPDES No. CAS004004) and Chapter 8.28 of the Irwindale municipal code. The MS4 Permit requires new development to retain and treat a specified volume of stormwater runoff on-site, as described in Impact 5.8-1.

Therefore, development pursuant to the Specific Plan would not be anticipated to cause substantial erosion or siltation on- or off-site or substantial flooding on- or off-site. Development would also not be anticipated to create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage system. Therefore, impacts would be less than significant.

***Significance After Mitigation:*** Less than significant impact.

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Page 5.8-25 and 5.8-26, Section 5.8.4, Environmental Impacts, Impact 5.8.5, Operations. The following changes are made due a second alternative for the storm drain that connects the onsite detention basin to the final storm water disposal point. This alternative was not known when the DEIR was released for public review. Changes are also made in line with the updated Hydrology Report.

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The planning area would be connected to VCWD's public water supply. VCWD relies on groundwater from the Main Basin, which is an adjudicated basin that has been identified by DWR as a very-low-priority groundwater basin. In that regard, the basin is actively managed by the Main San Gabriel Basin Watermaster. Pursuant to the SGMA, the basin does not require a Groundwater Sustainability Plan, and the Watermaster submits annual reports to DWR. The Watermaster ensures that the basins do not exceed their safe yield.

[39] This does not account for the reduction in flow that results from routing Area A-4 to the basin.

Development accommodated by the Specific Plan would adhere to the State CGP, implement the SWPPP, and adhere to the City's stormwater management requirements, as described in detail in Impact 5.8-1, and would thereby ensure that groundwater quality is not adversely impacted during construction. No dewatering or groundwater wells are required to implement the Specific Plan, and the project site is not in an active groundwater recharge area. In addition, development pursuant to the Specific Plan would implement LID BMP measures, including drywells, baffle boxes, and detention basins~~, and modular wetland systems,~~ which would capture and filter water containments and would thereby ensure that water quality is not impacted during the operational phase of the Specific Plan. As a result, development of the planning area would not obstruct or conflict with the implementation of the Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.

Therefore, the Specific Plan would not obstruct or conflict with groundwater management, and impacts would be less than significant.

***Level of Significance Before Mitigation:*** Less than significant.

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Pages 5.15-32 and 5.15-33, Section 5.15.3.4, Environmental Impacts, Impact 5.16.5. The following changes are made due a second alternative for the storm drain that connects the onsite detention basin to the final storm water disposal point. This alternative was not known when the DEIR was released for public review. Changes are also made in line with the updated Hydrology Report.

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The analysis in the Preliminary Hydrology Report (see Appendix ~~M~~I1) represents the hydrology and hydraulic analysis for Option 1. The proposed Option 1 contains a larger impervious area than Option 2 since the BESS site is anticipated to have a similar drainage pattern with minimal to no pavement; however, the current design is preliminary and surface type may change. Therefore, the analysis in the Preliminary Hydrology Report is conservative. Additionally, the Hydrology Report analyzes Alternative 1 for the offsite storm drain. If Alternative 2 is chosen, the final Hydrology Report would reflect this change.

The project site drains to off-site conveyances maintained by the Los Angeles County Flood Control District (LACFCD). The proposed project would construct a new storm drain that connects the proposed detention basin on site to the LACFCD conveyance system with two alternatives proposed (see Figure 3-14). Alternative 1 includes a storm-drain from the proposed detention basin to Live Oak Avenue which outfalls to the San Gabriel River, located to the southeast of the project site. Alternative 2 includes a storm drain that crosses beneath Live Oak Lane and outfalls into the Santa Fe Headworks/Diversion Channel northeast of the site.

Overall, the developed condition hydrology would follow the existing condition surface flow pattern, where drainage continues to flow south to the proposed detention basin. The existing pits would be hydraulically connected through storm drainpipes. The proposed drainage areas are shown on Figure 5.8-3 ~~5.9-3~~, *Proposed Conditions Hydrology Map – Alternative 1*. The project site is subdivided into four drainage areas. Under Alternative 1, the ~~The~~ on-site drainage areas, A-1 through A-3, would drain to the detention basin. Runoff from the 85th

percentile storm event[40] would drain from the detention basins into two dry wells[41] on the northwest boundary, adjacent to the basin and I-605 for on-site retention. Under Alternative 2, runoff from drainage Area A-4 may also be routed to the onsite basin. ~~Any excess runoff would be directed to Line E on Live Oak Avenue, which outfalls to the San Gabriel River to the east of the project.~~ The proposed on-site and off-site drainage can be described in five subdrainage areas:

- **Area A1** refers to the northerly drainage area that includes off-site drainage from the existing commercial site, proposed buildings 3 and 2, and pavement from parking stalls and drive aisles. The runoff would sheet flow to nearby catch basins, into the underground storm drain system, and into the proposed detention basin.

- **Area A2.1** refers to the on-site drainage in the middle of the site. This drainage area would include drainage from building 2, building 1, and pavement from the parking aisles and stalls. Stormwater will first drain to nearby catch basins into the underground storm drain and then into proposed detention basin.

- **Area A2.2** refers to the on-site drainage on the westerly side of the site. The drainage area includes drainage from building 1 and pavement from the parking aisles and stalls. Stormwater enters the underground storm drain system through catch basins and then drains to the proposed detention basin.

- **Area A3** refers to the on-site drainage area that makes up the proposed detention basin. The basin is considered self-retaining and does not affect the on-site storm drain system. The basin manages stormwater volumes for the proposed dry wells for the 85th percentile storm.

- **Area A4** refers to the off-site area to the east of the proposed project. The drainage area includes runoff from the existing businesses on Live Oak Lane and the existing street width, which includes the improved sections that are part of the Specific Plan development. Stormwater follows the existing flow path, draining south to Live Oak Avenue along the street gutters on Live Oak Lane. Under Alternative 1, ~~Stormwater~~ stormwater for this drainage area would ~~first~~ flow into ~~four modular wetlands systems (MWS) and then into~~ a catch basin~~. Water would drain into a proposed storm drain line~~ that would connect to ~~Line E~~ the proposed storm drain on Live Oak Lane ~~and drain to the San Gabriel River~~. Under Alternative 2 runoff would either be routed to the onsite basin and drywells or by-pass the basin and be routed directly into the proposed storm drain that drains into the Santa Fe Headworks/Diversion Channel. The proposed project is not required to treat this offsite runoff per the requirements of MS4 Permit (Order No. R4-2021-0105, NPDES No. CAS004004) and Chapter 8.28 of the Irwindale municipal code. It should be noted that Appendix I2 analyzes routing runoff from this area to modular wetlands. The modular wetlands are no longer proposed, and the final LID Report would reflect this change. Both Appendix I1 and I2 analyze Alternative 1 for the proposed offsite storm drain.

[40] The MS4 Permit requires designated projects to retain, on-site, the Stormwater Quality Design Volume from a design storm event. The design storm event is determined using the 0.75-inch 24-hour rain event or the 85th percentile 24-hour rain event, whichever is greater.

[41] Dry walls are underground structures that disposes of unwanted water, most commonly surface runoff and stormwater. It is a gravity-fed, vertical underground system that can capture surface water from impervious surfaces, then store and gradually infiltrate the water into the groundwater aquifer.

The County Department of Public Works requires that the proposed basin regulate peak flows from the 50-year 24-hour storm event so that the post-development runoff does not exceed 1 cfs/acre. The project site, as analyzed in the Preliminary Hydrology Report under Alternative 1, is 66.9 acres, so the allowable maximum peak runoff flow is 66.9 cfs.[42] The 50-Year 24-Hour post-development flow for the Specific Plan development is 12 cfs. For Alternative 2, runoff from Area A-4 may be routed to the onsite basin. The peak flow rate for areas A1 through A4 for the 50-Year 24-Hr storm event is conservatively 39.96 cfs[43]. The total drainage area for this scenario is 80.51 acres and the post-development runoff should not exceed 80.51 cfs. Therefore, the basin has adequate capacity.

Additionally, the proposed storm drain on Live Oak Avenue (~~Line E~~ Alternative 1) would have a design capacity of 45.3 cfs and would convey runoff from the project site in addition to drainage area A4. Drainage area A4 would have a peak flow rate of 27.96 cfs for the 50-Year 24-Hr storm event. Therefore, ~~Line E~~ the storm drain would receive a total of 39.96 cfs and would be adequately designed to convey this flow. Furthermore, the storm drain under Alternative 2 would be designed using the same parameters as Alternative 1 and would result in a similar overall capacity. Once one of the two alternatives is chosen the final Hydrology Report would reflect the chosen alternative. The final Hydrology Report would be submitted to the City for review and approval prior to commencing any ground disturbing activities.

With the implementation of the on-site detention basin and drywells ~~the modular wetlands systems~~, the Specific Plan would not require or result in the relocation or construction of new or expanded stormwater facilities. The calculated stormwater runoff volume for the 50-year 24-hour storm event under post-development conditions can be accommodated by the on-site storm drain system. Therefore, impacts were determined to be less than significant.

***Level of Significance Before Mitigation:*** Less than significant.

# 3.4 DEIR REVISIONS FOR CLARIFICATION

## 3.4.1 Mitigation Measures Clarification

The following revision is made to provide clarity to Mitigation Measure GHG-2:

GHG-2 Prior to issuance of an occupancy permit for a new tenant/business entity, the new tenant/business entity shall provide documentation to the City demonstrating enrollment in ~~the proposed project's buildings would consume~~ a 100 percent carbon-free electricity energy plan such as Southern California Edisons's Green Rate program.., ~~when feasible~~ If a 100 percent carbon-free electricity plan is not available, the responsible party shall enroll in an energy plan with the next highest carbon-free electricity until a 100 percent carbon-free electricity energy plan becomes available. ~~and commercially available in accordance with Southern California Edison's approved programs in effect at the time the tenant/business entity seeks issuance of an occupancy permit.~~ Measures to achieve 100 percent carbon-free electricity use for the proposed project's buildings may

[42] The project site is 66.64 acres, so the analysis in the Preliminary Hydrology Report is conservative.

[43] This does not account for the reduction in flow that results from routing Area A-4 to the basin.

include, but are not limited to, plans for 100 percent renewable electricity. If such carbon-free electricity energy plans are waitlisted, the responsible party shall sign up on the waiting list until such time a plan is available.

The following revisions to Greenhouse Gas mitigation measures have been made to clarify that some of these measures are not applicable to the BESS portion under project Option 2. These measures focus on loading dock operations and employee customer parking, etc. The updated measures as shown also reflect the changes made in response to comments (see Section 3.1):

GHG-3 Prior to issuance of an occupancy permit for a new tenant/business entity, the project developer/facility owner and tenant/business entity shall provide to the City of Irwindale Community Development Department a signed document (verification document) noting that the project development/facility owner has disclosed to the tenant/business entity the requirement to implement the following measures. With the exception of the landscape equipment requirement (4th bullet), this measure shall not apply to the BESS:

- A solar photovoltaic (PV) system associated with proposed project buildings. The PV system shall be designed to comply with Section 140.10, *Prescriptive Requirements for Photovoltaic and Battery Storage Systems*, of the 2022 Building Energy Efficiency Standards. For purposes of this mitigation measure, battery storage modules are not considered buildings.
- High-efficiency lights (>50 percent of fixtures) to reduce energy usage.
- All major end-user appliances (e.g., dishwashers and refrigerators) installed are Energy Star certified or of equivalent energy efficiency where applicable.
- All landscape equipment (e.g., leaf blower) used for property management shall be electric powered only. The property manager/facility owner shall provide documentation (e.g., purchase, rental, and/or services agreement) to the Planning Department to verify, to the City's satisfaction, that all landscaping equipment utilized will be electric powered, as allowed.
- All on-site outdoor cargo-handling equipment (including yard trucks, hostlers, yard goats, pallet jacks, forklifts, generators, pumps, and other on-site equipment) shall be electric or non-diesel fueled. All on-site indoor forklifts shall be powered by electricity.
- All truck/dock bays that serve cold storage facilities within the proposed buildings shall be electrified to facilitate plug-in capabilities and support use of electric standby and/or hybrid electric transport refrigeration units.
- Prior to the issuance of a building permit, the site plan shall include the minimum number of automobile electric vehicle charging stations in accordance with the requirements of the Tier 2 Nonresidential Voluntary Measures of CALGreen Section A5.106.5.3, Electric vehicle (EV) charging. ~~required by the California Code of Regulations Title 24.~~

In addition, the project developer/facility owner has provided the following:

- Occupants/tenants shall be provided documentation on the United States Environmental Protection Agency's SmartWay program.
- Occupants/tenants shall be provided documentation on funding opportunities, such as the Carl Moyer Program, that provide incentives for using cleaner-than—required engines and equipment.

This verification document shall be signed by authorized agents for the project developer/facility owner and tenant/business entities. In addition, if applicable, the tenant/business entity shall provide documentation (e.g., purchase or rental agreement) to the City of Irwindale Community Development Department to verify, to the City's satisfaction, compliance with these measures.

GHG-4 Prior to the issuance of a building permit, the Project Applicant shall provide documentation to the City demonstrating that the project buildings' electrical room is sufficiently sized to hold additional panels that may be needed to supply power for future installation of electric charging systems for electric trucks and power transport refrigeration units (TRUs). Conduit shall be installed from the electrical room to tractor-trailer parking spaces in logical locations on-site to facilitate future electric truck charging. Conduit shall be installed between the electrical room and the loading docks to facilitate the use of electric plug-in TRUs. This mitigation measure shall not apply to the BESS.

GHG-5 In accordance with the City of Irwindale's Municipal Code Section 17.66, *Trip Reduction and Travel Demand Measures,* shall make provision for each of the TDM measures outlined in Section 17.66.030 B, *Development Standards* and shall comply with the *Monitoring* requirements in Section 17.66040. The project applicant shall demonstrate compliance with each measure in a written report submitted to the city prior to the issuance of a building permit and show compliance prior to the issuance of certificate of occupancy. Thea Transportation Demand Management (TDM) Program shall include detailed strategies for reducing the use of single occupant vehicles by employees by increasing carpool/vanpool participation and transit use. Additionally, the TDM program may provide for alternative work or compressed work schedules to reduce the number of days an employee commutes to work. This mitigation measure shall not apply to the BESS.

GHG-6 Prior to the issuance of a building permit, the site plan shall include surface parking lots to provide parking for low-emitting, fuel-efficient, and carpool/van vehicles associated with trips to the proposed project's buildings. At minimum, the number of preferential parking spaces shall equal to the Tier 2 Nonresidential Voluntary Measures of CALGreen Section A5.106.5.1.2. In addition, the site plan shall also include automobile electric vehicle charging stations equal to the Tier 2 Nonresidential Voluntary Measures of CALGreen. This mitigation measure shall not apply to the BESS.

GHG-7 Prior to issuance of an occupancy permit, a new tenant/business entity shall place legible, durable, weather-proof signs at truck access gates, loading docks, and truck parking areas that identify applicable California Air Resources Board (CARB) anti-idling regulations. At a minimum, each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict idling to no more than three ~~five~~ minutes once the vehicle is stopped, the transmission is set to "neutral" or "park," and the parking brake is engaged; 3) directional text on the sign shall read "To Truck Route" with a directional arrow. and ~~3)~~ 4) telephone numbers of the building facilities manager and CARB to report violations. The City shall conduct a site inspection to ensure that the signs are in place. This mitigation measure shall not apply to the BESS.

## 3.4.2 Project Description Clarification

The following text update is required to accurately describe the electrical tie-lines for the BESS project (Option 2):

*Electric Tie-Line*

The electrical tie-line will be undergrounded unless the applicable agency(ies), including but not limited to Southern California Edison or California Independent System Operator (CALISO), reject the proposed the underground line. If the applicable agency(ies) require an overhead tie-line, the Applicant shall be subject to a Zone Variance application per IMC Chapter 17.32. The overhead line would transition to underground at a transition pole. The underground portion of the electric tie-line would consist of conduits containing electric power cables, fiber optic communications cable, and a grounding conductor within an approximately 3'-0" wide and 3'-0" deep, high-strength concrete encasement that would be a minimum of 3'-0" feet below the surface. Impacts related to the undergrounding of the electric tie-line would not result in a net increase of impacts of the proposed projects.

If required, the overhead electric tie-line would consist of three 220 kilovolt (kV) conductor cables below an optical ground wire that serves dual purposes of grounding and fiber optic communications. The conductors and optical ground wire would be supported by steel poles that would be designed high enough to provide minimum required clearances from existing overhead power lines. Some of the poles could be up to 150 feet high where existing overhead power lines are crossed to accommodate minimum needed vertical clearances. The conductor cables and optical ground wire would extend from the collector substation H-frame structures to a pole located inside the south end of the collector substation and then to the point of interconnection (POI) in the existing 220 kV bus works area inside of the SCE substation. Four possible electric tie-line alignment routes are proposed (see Figure 3-9, *Option 2 Electric Tie-Line Alignment Options*). For all the following routes, all poles would be in developed terrain and on private property outside of public rights-of-way. All the following routes would also be designed to provide for minimum separation distances from existing overhead transmission and distribution lines along Live Oak Avenue and on the west and east sides of the project site and the SCE substation property to meet high-voltage-electric safety-code requirements. The BESS developer is working with SCE to determine which of the following routes is most practical. Any of the following routes may need to be used pending the final design by SCE.

- **Alignment A.** From the south end of the onsite substation, the tie-line may run east inside the south boundary of the project site to a turning pole near the intersection of Live Oak Avenue and Live Oak Lane, then south or southeast across Live Oak Avenue to a turning pole inside the SCE substation property, then east to the northeast portion of the SCE substation property, and then south inside the eastern boundary of the SCE property to the POI. This alignment would require up to three poles on the project site and up to five poles inside the SCE substation property.

- **Alignment B.** From the south end of the onsite collector substation, the tie-line may cross Live Oak Avenue approximately perpendicular to a turning pole where it would turn east and run along the inside of the northern boundary of the SCE substation property to another turning pole near the northeast corner of the SCE substation property, then east and south inside the SCE property to the POI. This alignment would require one pole on the project site (i.e., at the substation), and up to six poles inside the northwest portion of the SCE substation property.

- **Alignment C.** From the south end of the onsite collector substation, the tie-line may extend directly across Live Oak Avenue to a turning pole where it would turn west to another turning pole near the intersection of Live Oak Avenue and Graham Road, then extend southward near the east side of Graham Road inside the SCE property to the POI. This alignment would require one pole on the project site (i.e., at the substation), and up to five poles inside the northwest portion of the SCE substation property.

- **Alignment D.** From the south end of the onsite collector substation, the tie-line may extend southwest diagonally across Live Oak Avenue to a turning pole near the intersection of Live Oak Avenue and Graham Road, then extend southward near the east side of Graham Road inside the SCE property to the POI. This alignment would require one pole on the project site (i.e., at the substation), and up to four poles inside the northwest portion of the SCE substation property.

~~Detailed design may determine that a portion of the tie-line would need to be installed underground. If so, the overhead line would transition to underground at a transition pole. The underground portion of the electric tie-line would consist of conduits containing electric power cables, fiber optic communications cable, and a grounding conductor within an approximately three-foot-wide and three-foot-deep high-strength concrete encasement that would be a minimum of three feet below the surface.~~

Impacts related to the undergrounding of the electric tie-line would not result in a net increase in environmental impacts. Potential impacts to visual resources, as addressed in DEIR Section 5.1, *Aesthetics,* would be reduced as the potential for additional overhead lines in the vicinity would be eliminated. The impact conclusions for Air Quality and Greenhouse Gas emissions would not change. Operational impacts associated with these impacts would not change in comparison to the impacts as quantified in DEIR Sections 5.2, *Air Quality* and 5.3, *Greenhouse Gases*. The maximum construction-related emissions associated with the proposed project are based on the maximum daily emissions. These emissions would not be significant for Option 2 (BESS) and would occur during construction of Buildings 2 and 3 for Option 1. The excavation and related emissions associated with trenching to underground the electrical tie-lines would not change the significance findings in the analyses. Greenhouse gas emissions analyses do not quantify construction-related emissions as significance

thresholds are based on long-term, operational impacts. Undergrounding the electrical tie-lines would not appreciably affect the other environmental impacts addressed in the DEIR.

# Appendix A. LEA Approval of Operations Plan Letter

# Appendices

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COUNTY OF LOS ANGELES
Public Health

**BARBARA FERRER, Ph.D., M.P.H., M.Ed.**
Director

**MUNTU DAVIS, M.D., M.P.H.**
County Health Officer

**MEGAN McCLAIRE, M.S.P.H.**
Chief Deputy Director

**NICHOLE QUICK, M.D., M.P.H.**
Deputy Director for Health Protection

**LIZA FRIAS, REHS**
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Fifth District

August 24, 2023

Mr. Jeffrey A. Dritley, President
KP Irwindale Owner, LLC
11150 Santa Monica, #300
Los Angeles, CA 90025 (Via email)

**Subject: Approval of Operations Plan - Nu-Way Live Oak Reclamation – Inert Debris Engineered Fill Operation (IDEFO) - SWIS No. 19-AA-0849**

Dear Mr. Dritley,

On July 26, 2023, the Solid Waste Management Program, acting as the Local Enforcement Agency (LEA) received an IDEFO Enforcement Agency Notification Application package for Nu-Way Live Oak Reclamation pursuant to Title 14, California Code of Regulations (CCR) Section 18103 et al. The application package consisted of an operations plan (OP) dated August 29, 2022 and a request for change of ownership. The OP was prepared and submitted by Heavy Iron Contracting, LLC (Operator). The IDEFO is comprised of an area of 64 acres located at 13620 Live Oak Lane, Irwindale, California, 91706.

Nu-Way Live Oak Reclamation was previously operated and own by Mnoian Management Inc. The inert landfill was a former sand and gravel quarry that ceased operation in the late 1980s. According to the 1991 Waste Discharge Requirements Order No. 91-016 (WDRs), the solid waste permitted to be discharged at the site included uncontaminated soil, broken concrete, bricks, broken asphalt, inert aggregate mining wastes, and plasterboard. The inert landfill was filled to its capacity to street level; however, because the fill was not compacted to achieve the compaction requirements for the intended post-closure land use, the operator will excavate, process and recompact all wastes for future development.

The OP proposes to excavate the existing fill in workable areas down to predetermined depths with the oversight of a geotechnical engineer. Excavated materials will be spread out and inspected for non-compliant materials. Any non-compliant materials, including but not limited to, hazardous wastes, organics, and asbestos, will be segregated and disposed of at a legal place offsite in accordance the State Minimum Standards set forth in Title 27 CCR and Title 14 CCR.

Nu-Way Live Oak Reclamation obtained the following permits and approvals from the following agencies:

- Operations Plan dated August 29, 2022 prepared by the Operator was approved by the Los Angeles Regional Water Quality Control Board on September 14, 2022.

- Nu-Way Live Oak Remediation Rough Grading Plan prepared by Geotechnical Engineer and David Evans and Associates Inc. was approved by the Los Angeles County Department of Public Works, Geotechnical and Materials Engineering Division, Geologic and Soils Engineering on September 8, 2022. It was also approved by the Los Angeles County Department of Public Works, Building and Safety Division, Drainage and Grading on September 16, 2022.

- Los Angeles County Department of Public Works, Building and Safety/Land Development issued a Grading Permit on October 27, 2022.

The LEA has completed the review of the application package and determined that it is complete and correct as defined in Title 14 CCR Section 18101, and it meets the requirements of Title 14 CCR Section 17388.3.

Should you have any questions, please contact me at kton@ph.lacounty.gov or (626)430-5540.

Sincerely,

Kathy Ton

Kathy Ton
Solid Waste Management Program – Permitting Unit

cc: Steven Hillgren, Vice President (via email)
John Bachman, V.P. of Operations (via email)
Daniel Tran, LEA (via email)
Jeff Hackett, CalRecycle (via portal)
Nai Teurn, CalRecycle (via portal)

# Appendix B. Transitioning to Zero-Emission Heavy-Duty Freight Vehicles White Paper

# Appendices

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WHITE PAPER

SEPTEMBER 2017

# TRANSITIONING TO ZERO-EMISSION HEAVY-DUTY FREIGHT VEHICLES

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# EXECUTIVE SUMMARY

A clear path toward decarbonization of the heavy-duty freight sector has been elusive. Barriers to the growth of electric and hydrogen fuel cell heavy-duty commercial freight trucks include limited technology availability, limited economies of scale, long-distance travel requirements, payload mass and volume constraints, and a lack of refueling and recharging infrastructure. Many governments and companies are seeking to break down such barriers to help decarbonize heavy-duty freight trucks.

In this report, we assess zero-emission heavy-duty vehicle technology to support decarbonization of the freight sector. We compare the evolution of heavy-duty diesel, diesel hybrid, natural gas, fuel cell, and battery electric technologies in the 2025–2030 timeframe. We synthesize data from the research literature, demonstrations, and low-volume commercial trucks regarding their potential to deliver freight with zero tailpipe emissions. We analyze the emerging technologies by their cost of ownership and life-cycle greenhouse gas emissions for the three vehicle markets of China, Europe, and the United States.

Based on this work, we assess the relative advantages and disadvantages among the various emerging electric-drive technologies. Table ES-1 summarizes our findings regarding the zero-emission heavy-duty vehicle technology benefits and barriers to widespread adoption. The table shows results for the three main zero-emission technology areas: plug-in electric, catenary or in-road charging electric, and hydrogen fuel cell vehicles. Each technology offers the prospect of lower carbon emissions, no tailpipe emissions, and greater renewable energy use. Matching specific electric and hydrogen technologies to particular truck segments can help overcome barriers such as traveling range, infrastructure, and recharging time.

**Table ES-1.** Summary of promising segments, benefits, and barriers for zero-emission heavy-duty freight vehicle technologies.

| Technology | Benefits | Prevailing barriers to widespread viability | Promising segments for widespread commercialization |
|---|---|---|---|
| **Electric (plug-in)** | • Reduce greenhouse gas emissions<br>• Eliminate local air pollution<br>• Reduce fueling costs<br>• Reduce maintenance costs<br>• Increase energy efficiency<br>• Increase renewable energy use | • Limited electric range<br>• Vehicle cost (battery)<br>• Charging time (unless battery swapping is utilized)<br>• Cargo weight and size | • Light commercial urban delivery vans<br>• Medium-duty regional delivery trucks<br>• Refuse trucks |
| **Electric (catenary or in-road charging)** | • Reduce greenhouse gas emissions<br>• Eliminate local air pollution<br>• Reduce fueling costs<br>• Reduce maintenance costs<br>• Increase energy efficiency<br>• Increase renewable energy use<br>• Enable regional travel | • Infrastructure cost<br>• Standardization across regions<br>• Complete infrastructure network before vehicle deployment<br>• Visual obstruction (catenary) | • Medium-duty trucks and heavy-duty tractor-trailers on medium-distance routes with high freight use<br>• Drayage trucks around ports |
| **Hydrogen fuel cell** | • Reduce greenhouse gas emissions<br>• Eliminate local air pollution<br>• Increase energy efficiency<br>• Enable quick refueling time<br>• Increase renewable energy use | • Refueling infrastructure cost<br>• Renewable hydrogen cost<br>• Vehicle costs (fuel cell) | • Heavy-duty tractor-trailers in long-haul operation<br>• Drayage trucks around ports |

We also assess and discuss these factors to better understand the prospects for widespread commercialization over the 2025 and beyond timeframe. Based on the research findings, we draw the following three conclusions regarding emerging vehicle zero-emission technologies for heavy-duty vehicles.

***Electric-drive heavy-duty vehicle technologies are essential to fully decarbonize the transport sector.*** Heavy-duty freight trucks are disproportionate contributors to pollution, representing less than one tenth of all vehicles but roughly 40% of their carbon emissions, and their activity keeps growing. Electric-drive technologies, similar to those being commercialized in cars, will be essential to decarbonize the heavy-duty sector and help meet climate stabilization goals. Whereas the more efficient potential diesel technologies can reduce carbon emissions by about 40%, electric-drive technologies powered by renewable sources can achieve over an 80% reduction in fuel life-cycle emissions.

***By 2030, electric-drive heavy-duty vehicle technologies could offer cost-effective opportunities for deep emission reductions***. Major projects involving heavy-duty electric and hydrogen fuel cell vehicle technologies show great potential due to their much greater efficiency and use of available low-carbon fuel sources. We find that overhead catenary electric heavy-duty vehicles would cost approximately 25%–30% less, and hydrogen fuel cells at least 5%–30% less, than diesel vehicles to own, operate, and fuel in the 2030 timeframe. Key drivers for cost-effectiveness are battery pack costs dropping to below $150 per kilowatt-hour, hydrogen fuel costs dropping to below the per-energy-unit cost of diesel, and the cost of the associated infrastructure decreasing over time.

***Different electric-drive technologies are suitable for different heavy-duty vehicle segments, but massive infrastructure investments would be needed***. Advances in battery packs and other electrical components will enable shorter distance urban commercial vans to become plug-in electric, similar to cars. Battery electric vehicles with overhead catenary or in-road charging can enable electric zero-emission goods transport on and around heavily traveled freight corridors. Hydrogen fuel cell technology might be especially key for longer-distance duty cycles. These technologies each have formidable barriers and will require sustained and extensive infrastructure investments by government and industry (e.g., overhead transmission, in-road charging, hydrogen refueling stations).

# I. INTRODUCTION

The transition to electric-drive vehicles is widely regarded as critical for the transportation sector. Electric-drive vehicles, including battery electric, plug-in hybrid, and hydrogen fuel cell vehicles, offer the potential for a vehicle fleet to shift away from petroleum fuels and bring dramatic emission reductions that are needed to achieve long-term air quality and climate change goals. The transition to electric drive is already beginning for passenger automobiles, with millions of electric cars on roads around the world as of early 2017, and the same technology is now available for light commercial vans. In addition, hundreds of thousands of electric buses have been put into local service. Progress with heavy-duty commercial freight vehicles has been more limited, with dozens of demonstrations and prototypes, but few commercial offerings around the world.

There is growing interest in deploying advanced technologies in heavy-duty freight vehicles for a number of reasons, including climate change, energy diversification, and local air quality. The challenge of climate change provides a major overarching motivation for most major national and local governments, and the breakdown of truck activity helps underscore the imperative to focus not just on cars, but on heavy-duty freight vehicles as well.

Figure 1 summarizes the breakdown of the world vehicle population, travel activity, and greenhouse gas emissions. Freight trucks, which primarily operate on diesel (and sometimes gasoline or natural gas), account for a large and growing share of local pollutant and greenhouse gas emissions. Despite representing merely 9% of the global vehicle stock and 17% of the total vehicle miles driven, freight trucks accounted for approximately 39% of the life-cycle road vehicle greenhouse gas emissions, with the share being even higher for other pollutants (ICCT, 2017; Miller and Façanha, 2014).

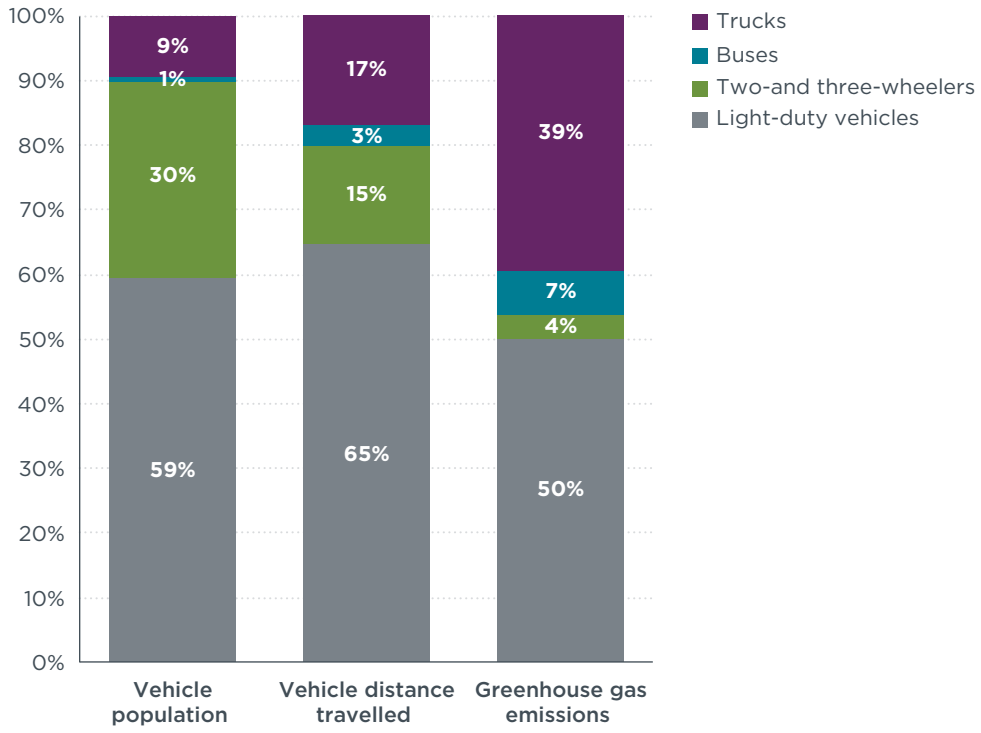


**Figure 1.** Global vehicle stock, distance traveled, and life-cycle road transport greenhouse gas emissions by vehicle type in 2015.

Heavy-duty vehicles' disproportionate contribution to global greenhouse gas emissions is expected to increase for decades to come due to a substantial increase in road freight activity. Figure 2 illustrates the global freight activity and the life-cycle greenhouse gas emissions in carbon dioxide equivalent ($CO_2e$) from 2015 projected through 2050 (ICCT, 2017; Miller and Façanha, 2014). The figure shows freight activity for light, medium, and heavy trucks in trillions of freight payload multiplied by distance traveled (corresponding to the left axis). The figure also, with the grey line, illustrates the associated life-cycle greenhouse gas emissions, including vehicle exhaust and upstream emissions to produce the trucks' fuels, based on business-as-usual vehicle efficiency trends (right axis). As shown, from 2015 to 2050, global truck freight activity and truck life-cycle greenhouse gas emissions are estimated to at least double under the business-as-usual scenario. The figure also illustrates how much of the heavy-duty freight activity is from the heaviest trucks—typically these are combination tractor-trailers with the tractors classified as Class 8 in the North America, or trucks with greater than 15-ton weight capacity in Europe. These heaviest vehicles represent over 60% of the freight truck metric ton-kilometer activity and over 75% of the freight truck carbon dioxide ($CO_2$) emissions and are the primary focus of this report.

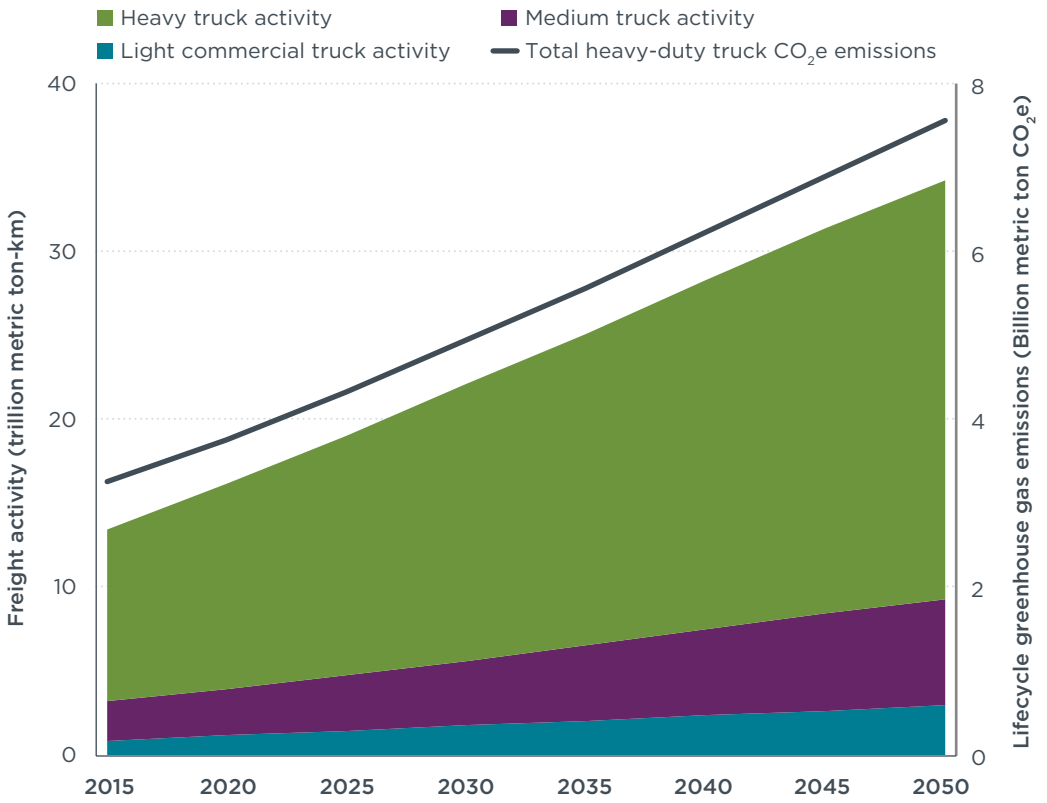


**Figure 2.** Projected global freight activity and life-cycle greenhouse gas emissions from 2015 to 2050.

In addition to the climate issues associated with the greenhouse gas emissions from freight transport, the associated local air pollution, particularly of oxides of nitrogen and particulate matter emissions, negatively impacts health and quality of life, particularly in areas near concentrated freight activity. These burdens are disproportionally experienced by the communities that live closest to freight hubs and corridors, most typically populated by low-income residents.

Although increased vehicle efficiency and modern aftertreatment technology to reduce tailpipe emissions offer the lowest-cost emissions reductions, there are a number of more advanced emerging zero-emission vehicle technologies that could bring much deeper reductions. The increasing scale of electric car production, with cumulative global electric cars sales surpassing 2 million in the beginning of 2017, brings forth major cost reductions in batteries. New longer range models are paving the way for mainstream adoption. Furthermore, charging infrastructure to support such vehicles continues to grow (Hall & Lutsey, 2017). Feeding the progress, governments around the world are setting ever-ambitious targets to phase out combustion in favor of electric cars and reinforcing efforts with supporting policy, incentives, and infrastructure (e.g., see Lutsey, 2015; Lutsey, 2017; Slowik & Lutsey, 2016).

Many governments seek to break down barriers to help decarbonize heavy-duty freight trucks by leveraging their ongoing progress on electric cars. The activity and emissions trends introduced above increasingly indicate that long-term climate and air quality goals require that all major transport modes, including those for commercial freight, move toward much lower emissions, including with the broad application of plug-in electric and hydrogen fuel cell technology. Many of these technologies, in greater use in light-duty vehicles, are also being explored for deployment in heavy-duty freight vehicles.

Zero-emission buses are being deployed in growing numbers, and this could also help pave the way for zero-emission freight. Through 2016, this market development has been dominated by China; the country had over 280,000 electric buses, or over 95% of the world electric bus market (EV sales, 2017a, 2017b). Deployments of all-electric, plug-in hybrid, and fuel cell buses in Europe and the U.S. are increasing (e.g., Eudy, Post, & Jeffers, 2016; European Alternative Fuels Observatory, 2017). These bus deployments increase the production volume of batteries, fuel cell stacks, on-vehicle power electronics, electric motors, and charging and refueling equipment. This increasing component volume helps the development of a supplier base that is also likely to support heavy-duty freight technology. Likewise, the growing experience of charging and refueling providers on these bus deployments puts them in stronger position for installations for similar zero-emission freight applications in the future.

To inform such government activities on zero-emission heavy-duty vehicles, it is important to gain a clearer understanding of the potential viability for the various zero-emission heavy-duty vehicle technologies. Especially for the heaviest long-haul tractor-trailers, the activity and emissions appear to be the most problematic, and there appears to be a number of potential technology paths. Which technologies are most appropriate for which applications? What are the potential climate benefits of these vehicles considering their various fuel sources? What are the associated vehicle technology costs? This paper seeks to address these questions and discuss the potential for an electric drive heavy-duty fleet.

To help address these questions about the potential for deep emission cuts for heavy-duty vehicles, we focus on electric and hydrogen fuel cell vehicle technologies. Various forms of these technologies would leverage electric and fuel cell developments in cars, light-commercial vans, and buses. Beyond simply plugging in to the electric grid, electric heavy-duty vehicles could use battery swapping stations or “e-roads” with inductive dynamic charging embedded in roadways or via overhead catenary electricity transmission. E-roads provide a continuous source of power to vehicles, directly transmitting electricity to the electric motor and charging an on-board battery.

When these catenary systems are deployed on various highway segments, they allow for greater range and significantly smaller batteries. The vehicles used on e-roads are equipped with either full electric drivetrains, where the pantograph or inductive coils and power electronics are combined with a battery pack, or a hybrid drivetrain, with a combustion engine. The hybrid drivetrain or additional battery capacity allow the vehicle to travel greater range from the e-roads. Fuel cells use on-board hydrogen storage and electrochemically convert hydrogen to electricity to power the vehicle to enable long-range and quick fuel times. Each of these options provides the potential for much greater on-vehicle efficiency and renewable energy sources.

In Section II, we review heavy-duty vehicle technology developments to compile data from the research literature, demonstration fleets, and low-volume commercial truck models and provide context for analysis of zero-emission technologies that follows. Then, in Section III, we assess the major vehicle technologies, comparing the evolution of diesel, diesel hybrid, natural gas, fuel cell, battery electric, dynamic induction grid, and overhead catenary in the 2025–2030 timeframe in a vehicle-related cost-of-ownership framework. In Section IV, we analyze these technologies by their life-cycle greenhouse gas emissions, including upstream fuel cycle emissions, based on the three vehicle markets of China, Europe, and the U.S. Finally, in Section V, we summarize and discuss the results.

# II. REVIEW OF HEAVY-DUTY VEHICLE TECHNOLOGY DEVELOPMENTS

To provide context and additional background for the analysis below, this section first introduces existing heavy-duty vehicle policy. In the subsequent subsections, we summarize the associated research literature, physical truck demonstrations, and announced commercial truck offerings regarding zero-emission heavy-duty vehicle technologies.

## HEAVY-DUTY VEHICLE POLICY BACKGROUND

Because of the projected increase in heavy-duty activity, and with more stringent efficiency standards implemented for light-duty vehicles compared to heavy-duty-vehicles, the portion of greenhouse gas emissions from heavy-duty vehicles is expected to continue to increase under business-as-usual conditions. A primary driver for this trend is that freight vehicle efficiency will tend to remain relatively constant without regulations that require available efficiency technologies be deployed (Davis, Williams, & Boundy, 2016; Muncrief & Sharpe, 2015). To date, only a handful of countries—Canada, China, Japan, and the U.S.—have implemented efficiency and greenhouse gas emissions standards. The European Union is widely expected to propose heavy-duty $CO_2$ regulations in the near future. Standards in the EU will likely open the doors for other countries in Asia and Latin America that pattern their standards on the European Commission's vehicle regulations. Less than half of heavy-duty new vehicle sales globally are regulated for efficiency or $CO_2$, compared to over 80% of the world's passenger vehicles (Miller and Façanha, 2014).

By improving engine efficiency, aerodynamics, and aftertreatment technology, there is the potential for substantial, highly cost-effective improvements in heavy-duty vehicle efficiency and emissions. In the U.S., the efficiency and $CO_2$ regulations will cut business-as-usual heavy-duty vehicle fuel use by over one third by 2050 (Sharpe et al., 2016). Although the necessary technology improvements to meet those standards have an associated increase in technology costs, the fuel efficiency improvements lead to expected payback periods ranging from 2 to 4 years for the various vehicle types. The efficiency regulations include special provisions for electric trucks (e.g., disregarding upstream emissions and providing multipliers to count them multiple times), but they are not expected to play significantly in regulatory compliance (Lutsey, 2017; U.S. EPA and U.S. DOT, 2016). Electric-drive truck technology is similarly not needed to comply with near-term conventional pollutant emission regulations, where technologies such as exhaust gas recirculation systems and diesel particulate filters can greatly reduce negative health impacts associated with heavy-duty diesel engines. For manageable costs of approximately $7,000 per vehicle, nitrogen oxide ($NO_x$) and particulate matter (PM) emissions could be reduced by over 95% (Posada, Chambliss, & Blumberg, 2016) for vehicles that can typically cost well over $100,000.

These technologies are attractive for near-term progress, but this incremental approach is more limited in the long-term, when much deeper emission cuts are necessary to meet government environmental goals and global climate protection commitments. In the 2030–2045 timeframe, advanced efficiency technologies are expected to offer a potential fuel consumption reduction of 40%–52% in combination tractor-trailers, and up to 30%–36% for rigid delivery trucks (Delgado, Miller, Sharpe, & Muncrief, 2016). Looking beyond truck efficiency improvements, freight transport efficiency gains through further optimization of routes and sharing trucks and warehouses between companies

could reduce $CO_2$ emissions by one third (OECD/ITF, 2017). In addition, biofuels can be a partial solution, if and when broader sustainability and indirect land use change impacts are more fully addressed. However, with the anticipated increase in heavy-duty vehicle freight shipping and with their slow fleet turnover, even widespread adoption of these approaches would still not result in a net improvement in $CO_2$ emissions and fuel consumption in 2050 compared to 2015. To meet international climate stabilization goals, more ambitious emissions-reduction approaches, including zero-emission heavy-duty vehicles using low-carbon upstream energy sources, will be necessary.

## REVIEW OF RESEARCH LITERATURE

Although few zero-emission heavy-duty commercial freight vehicles are on the road today, a variety of studies over the past 5 years have considered the feasibility of a number of technologies and their potential to reduce emissions. Table 1 lists the associated technical research studies and identifies the vehicle types, technologies, and analytical estimates in each report. Because of the uncertain and quickly changing technologies involved, cost estimates and conclusions vary greatly between the reports. In addition, the scope of each report varies greatly, including which region, truck types, duty cycles, and fuel cost assumptions were considered.

**Table 1.** Quantitative studies of medium- and heavy-duty electric-drive vehicles.

| Study | Region | Timeframe | Vehicle Types | | | Technology | | | Analysis | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LCV | MDV | HDV | Battery electric | Fuel Cell | Catenary | Cost | $CO_2$ | Fleet |
| **den Boer, Aarnink, Kleiner, & Pagenkopf, 2013** | Europe | 2030 | | X | X | X | X | X | X | X | |
| **Fulton & Miller, 2015** | California | 2050 | | | X | X | X | | X | X | X |
| **Gladstein, Neandross & Associates, 2012** | California | 2020 | | | X | X | X | X | X | | X |
| **Wood, Wang, Gonder, & Ulsh, 2013** | United States | Present | X | X | | X | X | | X | | |
| **Silver & Brotherton, 2013** | California | 2050 | | X | X | X | | | | X | X |
| **Kleiner et al, 2015** | Europe, South Korea, Turkey | Present | X | | | X | X | | X | | X |
| **CARB, 2015a** | California | 2030 | | X | X | X | | | X | | X |
| **CARB, 2015b** | California | 2025 | | X | X | | X | | X | | X |
| **Zhao, Burke, & Zhu, 2013** | United States | Present | | | X | X | X | | X | X | |
| **Connolly, 2016** | Denmark | 2050 | | | X | X | | X | X | X | |
| **Löfstrand et al., 2013** | Sweden | 2025 | | X | X | X | | | X | | |
| **Sen, Ercan, & Tatari, 2016** | United States | 2040 | | | X | X | | | X | X | |
| **Lee & Thomas, 2016** | United States | Present | | X | | X | | | X | X | |

*LCV = light commercial vehicle; MDV = medium-duty vehicle; HDV = heavy-duty vehicle*

Based on the research literature, plug-in electric vehicles are being considered for a number of applications in the medium- and heavy-duty sectors. Electric vehicles' high efficiency, generally 3 to 4 times more efficient than diesel and natural gas engines, results in a reduction in primary energy use and greenhouse gas emissions (e.g., Chandler, Espino, & O'Dea, 2016). These vehicles are most suited for applications with short ranges and duty cycles that can take advantage of regenerative braking and where required electric battery packs sizes are lower (CARB, 2015b). An analysis of duty cycles suggests urban delivery vans and delivery trucks, refuse trucks, and drayage trucks as targets for electrification (Kelly, 2016).

The potential for electric-drive medium-duty delivery trucks was analyzed in several different studies. Löfstrand et al. (2013) estimate that battery electric trucks will have the lowest total cost of ownership of any powertrain option by 2025 for scenarios with short routes and high utilization. Similarly, the California Hybrid, Efficient and Advanced Truck Research Center expects electrified delivery trucks to be ready for widespread commercial implementation, with a 3- to 5-year return-on-investment, around 2020 (Silver & Brotherton, 2013). Other assessments are even more optimistic, with one showing that battery electric delivery vehicles are already cheaper in total cost of ownership than diesel vehicles in several countries when considering tax policies (Kleiner et al., 2015).

Battery-powered drivetrains could also be used in other types of heavy-duty vehicles, including various types of vocational vehicles. Drayage trucks, which operate over shorter distances (less than 60 miles) around ports, could be an early market for heavy-duty truck electrification (Chandler et al., 2016). Refuse trucks, which have similar duty cycles to urban buses and are based out of a central location each day, are potentially well suited to be powered by batteries, reducing noise and pollution in urban environments (CARB, 2015a).

To overcome the charging time barrier of plug-in battery electric medium- and heavy-duty vehicles, battery-swapping technology could be used. Such an approach would require that truck or tractor designs accommodate multiple daily battery pack swaps, battery-swapping stations are deployed on key routes, and a larger stock of battery packs is managed as a system. The time to replace the battery would then become competitive with refueling time, but they would still require more stops daily than conventional diesel if used on long-haul operation (see den Boer et al., 2013). Because of the infrastructure and system level complexities, only a few projects have been become operational. Since 2013, a fleet of electric buses in Qingdao, China, have extensively utilized battery swapping, and testing is expected on electric trucks in Québec starting in 2018 (La Presse, 2016; Phoenix Contact, 2013). The India-based partnership between Ashok Leyland and Sun Mobility also began investigating options in 2017 for a battery-swapping system, starting with bus and delivery van applications (Mohile, 2017).

Fuel cells are also receiving significant attention as an option for medium- and heavy-duty applications. Using hydrogen as their fuel source, fuel cell electric vehicles offer longer ranges with shorter refuel times, compared to battery-electric vehicle recharging. Fuel cell stacks, capable of greater than 50% efficiency, are much more efficient than diesel systems, which typically have maximum engine efficiencies of 37%–39% (Chandler et al., 2016; Thiruvengadam et al., 2014). Several studies have identified fuel cells as a potential solution to applications like suburban delivery trucks, drayage trucks, and shuttle buses where flexibility and long range is needed. One estimate suggests that hydrogen fuel-cell range-extending motors become competitive with plug-in electric vehicles at ranges over

60 miles, although falling battery prices may affect this trade-off (Wood et al., 2013). Nonetheless, hydrogen-powered vehicles face challenges, including high hydrogen costs and a lack of refueling infrastructure, which government interventions are seeking to overcome (CARB, 2015b). Because of the high costs of fuel cells and hydrogen, Kleiner et al. (2015) calculate that fuel cell delivery vehicles have higher total cost of ownership compared to conventional, hybrid, or battery electric vehicles.

E-roads and catenary electric-drive technologies have also been proposed as a long-term solution for the heavy-duty sector. Such projects have higher infrastructure costs and are therefore primarily considered for heavily used freight corridors (e.g., near ports or highways between major cities). Despite these high up-front investments, catenary-hybrid trucks offer low fuel and maintenance costs, and one study found them to be competitive with conventional heavy-duty Class 8 vehicles (i.e., those over 15-ton weight capacity) for near-dock drayage applications (Gladstein, Neandross & Associates, 2012). This technology, whether combined with an internal combustion engine or a limited battery system, results in lower vehicle prices compared to full electric or fuel cell heavy-duty trucks, but the primary obstacle is the construction of a catenary system (den Boer et al., 2013). Other types of "e-roads" are also under consideration, including inductive charging and conductive on-road strips. These systems could potentially lower infrastructure costs and enable use by a wider variety of vehicles and be relatively cost-effective in the future, although these technologies are generally less mature than overhead catenary systems (Connolly, 2016).

## DEMONSTRATIONS AND EXAMPLES

Electric vehicles are starting to enter the medium- and heavy-duty vehicle markets through fleets and demonstration projects. Electric transit buses, school buses, shuttle buses, and medium-duty vehicles (primarily for delivery purposes) are becoming increasingly commercially available, but the transition to zero-emission heavy-duty long-haul tractor-trailers is particularly challenging and is currently only in the prototype phase. The various zero-emission vehicle technologies face cost barriers, and in some cases real-world performance barriers as well, but the demonstration projects help resolve such issues while costs are decreasing.

Tables 2 through 5 summarize available information on such zero-emission truck projects across vehicle technology types and vehicle classes. The demonstration projects are categorized according to medium-duty electric (Table 2), heavy-duty electric (Table 3), in-road and catenary electric charging (Table 4), and hydrogen fuel cell trucks (Table 5). We apply the approximate designation of "medium-duty" as U.S. weight Classes 3 through 6 (below 12-metric ton gross curb weight in Europe) and typically straight trucks, and "heavy-duty" as U.S. weight Classes 7 and 8 (above 12 metric tons in Europe) that are normally combination tractor-trailers. However, there is some ambiguity in that the demonstration truck projects do not all have clear weight specifications, and some of the projects span vehicle types. As shown, the wide-ranging zero-emission truck initiatives cover a spectrum of technologies, locations, fleet applications, manufacturer and other stakeholders, and truck fleet sizes.

**Table 2.** Medium-duty electric vehicle demonstration projects.

| Technology | Organization | Location | Time frame | Description | Source |
|---|---|---|---|---|---|
| **Class 6 electric delivery trucks** | Frito Lay | United States | 2013 | More than 250 Smith Newton electric delivery trucks. Project evaluates 10 of these delivery trucks to better understand the effectiveness of electric trucks in real-world applications. | Frito Lay, (2016); Prohaska, Ragatz, Simpson, & Kelly (2016) |
| **Fuso Canter E-Cell/ Fuso eCanter** | Daimler Trucks | Portugal | 2014–2015 | Eight vehicles used in trials for short-range delivery and inner-city transport. | FUSO (2015) |
| | | Stuttgart, Germany | 2016 | Testing of five Fuso Carter E-Cell trucks by the parcel service provider Hermes. | Daimler (2016a,b) |
| **Electric delivery vehicles for urban distribution** | CWS, Boco, UPS, Smith Electric Vehicles, EFA-S, TCDi, Busch-Jaegen | North Rhine-Westphalia, Germany | 2011–2015 | A 2-year demonstration project that took data of 107,402 km driven by battery-powered electric trucks for urban distribution. | Stütz (2015) |
| **Electric delivery trucks** | Renault Trucks | Paris, France | 2015 | Testing of the all-electric D-range on delivery rounds of over 200 km with multiple battery recharge times during a 24-hour operating cycle. | Volvo Group (2015) |
| **E-trucks—all electric trucks with refrigerated body** | Renault Trucks | Switzerland | 2016 | Renault Trucks is testing two concept trucks that combined Renault's all-electric Midlum with an electric powered refrigerated body capable of carrying 3 metric tons of refrigerated products. | Volvo Group (2015) |
| **Electric parcel and letter delivery trucks** | German Post AG, StreetScooter GmbH, Langmatz GmbH, RWTH Aachen University, BMUB | Bonn, Germany | 2012–2016 | $CO_2$ GoGreen aimed to improve the vehicle technology, infrastructure technology, energy supply, and process design for using electric vehicles in parcel and letter delivery. | Appel (2013); BMUB (2016c) |
| **Maxity electric delivery truck** | Renault Trucks | France | 2010 | Pilot customers operated between 10 and 30 pre-production all electric trucks for deliveries. | Renault Trucks (2010) |
| **Electric parcel delivery trucks** | CalHEAT, California Energy Commission, Navistar, FCCC, Smith | Southern California | 2012 | Comprehensive performance evaluation of 3 E-Truck models using in-use data collection, on-road-testing, and chassis dynamometer testing. | Gallo & Tomić (2013) |
| **Electric delivery truck** | UPS, EVI | California | 2013 | UPS deployed 100 electric medium-duty delivery trucks to their California fleet, offsetting 126,000 gallons of conventional motor fuel per year. | EVI (2011); UPS (2017) |
| **Electric delivery trucks** | BAAQMD, CARB, San Francisco Goodwill, the Center for Transp. and Environment, BYD Corp. | Bay Area, California | 2017 | Goodwill is introducing 11 all-electric trucks to its truck fleet in 3 Californian counties, a $4.4 million project funded through California's cap-and-trade program, BAAQMD, and Goodwill. | CARB (2016a, 2016b) |
| **Electric delivery trucks** | SJVUAPCD, Motiv Power Systems, AmeriPride Services, CALSTART, First Priority Bus Sales | Central Valley, California | 2016 | Deployment of 20 zero-emission electric walk-in-vans and the necessary charging infrastructure for deliveries in the Central Valley, focused on disadvantaged communities. Funded through $7.1M grant from CARB, $5.8M from partners. | CARB (2016a, 2016b); SJVUAPCD (2016) |
| **Electric parcel delivery truck** | SJVAPCD, USPS, EDI, Motiv Power Systems, Morgan Olson, CALSTART, SunEdison | Stockton & Fresno, California | 2016 | Deployment of 15 all electric USPS "step vans" and the necessary charging infrastructure to form the basis of a USPS Advanced Vehicle Cluster. The project received $4.5M in California funds. | CARB (2016a, 2016b) |
| **Electric delivery truck** | UPS, H-GAC, CTE, US DOE, Workhorse Group | Houston-Galveston area, Texas | 2015 | Deployment of 18 all electric delivery trucks, estimated to avoid the consumption of 1.1 million gallons of diesel fuel over 20 years. | UPS (2015) |
| **Electric delivery truck** | UPS Limited | Feltham, UK | 2017 | Implementation of a smart charging system with energy storage to increase the number of vehicles that can be charged at a depot. | UK (2017) |
| **Electric delivery vehicles** | Gnewt Cargo | Southwark, UK | 2017 | Lease of 33 electric vehicles for last-mile logistics. | UK (2017) |
| **Electric delivery truck** | Nordresa, Purolator | Québec, Canada | 2017 | Purolator is testing of an all-electric delivery truck developed by Nordresa. The trials show electric trucks saving an average of 0.60 $CAN per kilometer resulting in profitable operation within 2 years. | AVEQ (2017) |
| **Electric delivery truck** | UPS, FREVUE | Rotterdam, Netherlands; London, UK | 2014–2015 | Deployed and tested 16 7.5-ton electrically retrofitted P80E Mercedes T2 in London and 4 in Rotterdam with charging infrastructure. | FREVUE (2017b, 2017c) |
| **Electric logistics truck** | FREVUE, Arup, Smith Newton, The Crown Estate, Clipper Logistics | London, UK | 2014 | Deployment of a 10-ton and 12-ton all electric Smith Newton to accommodate increased delivery volume from a depot to a consolidation center. | FREVUE (2017e) |
| **Electric delivery trucks** | UPS | Amsterdam, Netherlands | 2013 | UPS deployed 6 electric parcel delivery trucks in Amsterdam. | Netherlands Enterprise Agency (2016) |

**Table 3.** Heavy-duty electric vehicle demonstration projects.

| Technology | Organization | Location | Time frame | Description | Source |
|---|---|---|---|---|---|
| **Zero-emission drayage trucks** | SCAQMD, the State of California, BYD, Kenworth, Peterbilt, and Volvo | California | 2016 | Statewide demonstration project of 43 zero-emission battery electric and plug-in hybrid drayage trucks used to transport goods over short distances from ports to distribution centers and rail yards. | SCAQMD (2016a) |
| **Electric Class 8 truck** | TransPower | California | 2015 | Demonstration of 4 Class 8 fully battery electric trucks from San Diego County 110 miles to the Los Angeles-Long Beach port region. | TransPower (2015) |
| **Electric Class 8 yard trucks & Class 5 medium-duty service trucks** | BYD, San Bernardino Associated Governments (SANBAG), & BNSF Railway | San Bernardino, Commerce, & Fontana, California | 2016–2018 | Two-year demonstration project of 23 battery-electric Class 8 yard trucks and 4 Class 5 medium-duty service trucks for use in rail yards and large-scale freight distribution centers, replacing diesel-powered heavy-duty tractors. The State of California awarded $9 million, through the California Climate Investments (CCI) program. | BYD (2016); CARB (2017) |
| **Electric heavy-duty refuse truck** | Motiv Power Systems & the City of Chicago | Chicago, Illinois | 2014 | The City of Chicago uses an all-electric refuse truck in different refuse and recycling routes up to 60 miles long. | Motiv (2014) |
| **Zero-emission distribution trucks** | EMOSS B.V., Hytruck | Netherlands | 2013–2014 | Zero-emission city distribution project- 8 hybrid and electric trucks with 2 fully electric 19-ton trucks (largest electric trucks of their kind in Europe) | EMOSS (2016) |
| **Battery electric waste disposal** | FAUN Umwelttechnik GmbH & Co. KG, DFKI, BEG, BMUB | Germany | 2017–2019 | Battery electric waste disposal with robot support (BEAR) is a project that develops and implements a fully electric refuse pilot truck to be tested by the Bremerhaven waste disposal company for 12 months. | BMUB (2016a) |
| **Electric heavy-duty refuse truck** | Waste Management NZ & EMOSS | Auckland & Christchurch, New Zealand | 2016–2017 | One electric body waste collection truck and two side-loader waste collection trucks for late 2016/ early 2017. Electricity will come from the gas emissions for a local landfill. First step in Waste Management transition to all electric. | Bradley (2016); Waste Management NZ (2016) |
| **Electric heavy-duty logistic trucks** | INTERREG, EU, LIOF, FIER Automotive, Köppen, Samskip, CTV, KLG Europe, Meulenberg Transport, Limburg | North Limburg, Netherlands & Duisburg, Germany | 2017 | Green Electric Last Mile (eGLM)—A project implementing 9 40- to 50-ton electric heavy-duty trucks in the cross-border logistics region of North Limburg-Duisburg | eGLM (2017); Weken & Kroon (2017) |
| **Electric heavy-duty trucks for beverage distribution** | FREVUE, Heineken, Simon Loos, | Amsterdam & Rotterdam, Netherlands | 2017 | Testing of 6 12-ton and 1 19-ton electric freight trucks in Heineken's delivery truck fleet. | FREVUE (2017a) |
| **Electric freight trucks** | Autobus Lion, TM4, AddÉnergie Technologies, Solution Adetel, Alcoa Canada | Québec, Canada | 2017 | Designing and manufacturing four prototypes (two freight trucks and two passenger buses). The project is valued at 17.2 million CAN with 8.6 million $CAN funding from the government. | Government of Québec (2016) |
| **Electric refuse truck** | Phoenix Danmark, Norsk Gjenvinning | Sparsborg, Norway | 2017 | Two refurbished electric refuse trucks, each truck is expected to save 60 metric tons of $CO_2$ per year | Norsk elbilforening (2017) |
| **Electric delivery truck** | ASKO | Oslo, Norway | 2016 | Norway's first electric distribution truck in operation, used to deliver food to city-center shops. 18-ton refrigeration truck with 240-kWh battery capacity, 200 km range, and cost ~$4 million NOK (~$470,000), twice that of diesel truck. | Dalløkken (2016) |
| **Electric refuse truck** | Motiv Power Systems, Crane Carrier, Loadmaster, and the City of Sacramento | Sacramento, California | 2017 | State's first all-electric garbage truck deployed in the city of Sacramento. It is expected to save 6,000 gallons of fuel per year. | PR Newswire (2017) |
| **Electric delivery truck** | EMOSS, FREVUE, BREYTNER | Rotterdam, Netherlands | | Testing of one 19-ton EMOSS truck in Rotterdam by BREYTNER Transportation. | FREVUE (2017d) |
| **Electric truck** | BMW Group, SCHERM Group, Terberg | Munich, Germany | 2015 | 40-ton electric truck for material transport from a logistic center, charged with renewable electricity | BMW Group (2015) |
| **Electric commercial vehicles** | Fraunhofer IML, TU Berlin, Hochschule Fulda, Florida Eis, Meyer Logistik, Meyer&Meyer, BMUB | Germany | 2017–2019 | "EN-WIN" is 18-month field trial of electric vehicles in the food, textile, and distribution logistics. Data to develop forecasting tool on e-commercial vehicles. Part two of project is to construct a 26 t electric vehicle for urban traffic use. | BMUB (2017a) |
| **Freight electric vehicles** | Emons Spedition, BMUB | Dresden, Germany | 2016–2018 | CitE-Truck project: Emons to deploy three electric heavy-duty vehicles (12t and 18t) | BMUB (2016b) |
| **Electric terminal truck** | Terex MHPS, Hamburger Hafen und Logisitik, Hermann Paus, Neuss Trimodal, Maschinenfabrik | Neuss & Hamburg, Germany | 2012–2017 | Terminal truck project to develop and test battery-powered terminal trucks for container handling. | BMUB (2016g) |

**Table 4.** In-road and catenary charging heavy-duty electric vehicle demonstration projects.

| Technology | Organization | Location | Time frame | Description | Source |
|---|---|---|---|---|---|
| **Conductive rail to charge all vehicles** | Elonroad and Lund University | Outside Lund, Sweden | 2017 | Developing a 200-meter test tract to demonstrate "Elonraod" (a conductive rail that is laid on top of the road to charge all vehicle types). | Elonroad (2016) |
| **Wireless power road** | INTIS | Lathen, Germany | | Currently testing a 25-meter track with contactless inductive charging of all vehicles. | INTIS, 2016 |
| **Conductive rail to charge all vehicles** | Elväg AB, NCC, KTH University, Swedish Energy Agency, & Arlandastad Holding AB | Sweden | | Demonstrated conductive underneath charging for all vehicles on a test track and currently a 2 km pilot is under construction. | Connolly, D. (2016) |
| **Conductive in-road charging for heavy-duty vehicles** | Volvo and Alstom | Hällered, Sweden | 2012 | 400-meter test track with two power lines built into the surface of the road and a current collector on the truck that connects to the road. | Volvo Trucks (2013) |
| **Catenary electric trucks** | Siemens, Volvo, SCAQMD | Los Angeles & Long Beach, California | 2017 | One-mile of highway equipped with a catenary system in both direction for freight transport near ports. | Siemens (2014, 2016b) |
| **Catenary electric system—heavy commercial** | Siemens, BASt, TU Dresden, EDAG, DLR, LBST, NOW, IFEU | Germany | 2016–2019 | ELANO project is a research and development project for catenary electric system powered by renewable energy for heavy-duty commercial vehicles. | BMUB (2016d) |
| **Catenary heavy commercial vehicles** | Siemens | Outside of Berlin, Germany | 2010–2011 | ENUBA – a study and demonstration on a private road that examined the electrification of heavy-duty commercial vehicles in conurbations with a catenary system. | BMUB (2016e) |
| **Catenary electric trucks, eHighway** | DLR, Siemens, TU Dresden, BMUB, Scania | Gross Dölln, Germany | 4/2012–12/2015 | ENUBA 2 – a 2km overhead catenary system for heavy-duty vehicles and an extension for bus applications. The project researched vehicle technology, the relevant traffic, energy, ecological, economic, and legal aspects and tested the functionality and reliability of such vehicles. | BMUB (2016f), Scania (2014) |
| **eHighway field trial—overhead catenary electric trucks** | LBV-SH, Forschungs-und Entwicklungszentrum Fachhochschule Kiel GmbH | Hamburg – Lübeck, Schleswig Holstein, Germany | 1/1/2017–12/31/2018 | FESH I – Planning and construction phase of 6 km of overhead catenary infrastructure in both directions, supported by a €14 million subsidy from BMUB. | BMUB (2017b) |
| | LBV-SH, TU Dresden, FH Keil, Spedition Bode, Stadtwerke Lübeck, Lübecker Hafengesellschaft, Scania, Siemens | | mid 2018–2021 | FESH II – Field testing of the system supported by a €3-4 million subsidy from BMUB. The goal of the system is to have trucks powered purely electrically the 25 km from the Lübeck harbor to the logistics center – 12 km (6 km each direction) through a catenary system and the remaining 38 km through an onboard battery pack. Initially diesel hybrid trucks will be included in the study to ensure reliability. | BMUB (2017b) |
| **eHighway field trial—overhead catenary electric trucks** | Hessen Mobil Strassen – und Verkehrsmanagement, TU Darmstadt | Frankfurt – Darmstadt, Hesse, Germany | 1/1/2017–12/31/2018 | ELISA I – Planning and construction of about 6 km of overhead catenary lines in both directions to allow for trucks to travel over 15 km electrically powered. The project is funded by a €14.6 million subsidy from BMUB. | BMUB (2017b) |
| | Power Supplier, Vehicle Manufacture (possibly Scania), Siemens | | mid 2018–2021 | ELISA II – Field testing of the system supported by a €3-4 million subsidy from BMUB. The goal is to allow for emission-free delivery of goods in the Frankfurt urban area and to provide a guide and basis for future system expansion. | BMUB (2017b) |
| **eHighway** | Siemens and Scania | Sweden | June 2016–2018 | World's first eHighway system on public roads. Operating two adapted diesel hybrid vehicles under a catenary system spanning two kilometers on the highway. | Siemens (2016a) |

**Table 5.** Medium- and heavy-duty hydrogen fuel cell vehicle demonstration projects.

| Technology | Organization | Location | Time frame | Description | Source |
|---|---|---|---|---|---|
| **Hydrogen fuel cell medium-duty parcel delivery truck** | FedEx, US Department of Energy, Plug Power, Workhorse Group | Memphis, Tennessee & California | May 2016–October 2019 | Demonstration of 20 hydrogen fuel cell extended-range battery electric parcel delivery trucks operating one 10-hour shift for 260 days annually for approximately 1.92 years (~5,000 hours per truck). Project received $3.0 million in funding from the DOE and $3.367 million from partners. | Griffin (2016) |
| **Maxity Electric Truck with fuel cell range extender** | Renault Trucks and French Post Office | France | 2015 | A year field test by the French Post Office of Renault's Maxity Electric Truck equipped with a hydrogen-powered fuel cell. | Renault Trucks (2015) |
| **Hydrogen fuel cell hybrid electric parcel delivery truck** | CTE, UPS, Univeristy of Texas, EVI, Hydrogenics USA, Valance Technology | California | 2014– | The project will retrofit 17 delivery vans with fuel cell hybrid technology and test them at distribution facilities in California. | CTE (2016); Satyapal (2014) |
| **Hydrogen fuel cell drayage truck** | Environmental Defense Fund, US DOE, (H-GAC), Gas Technology Institute, US Hybrid, Richardson Trucking, University of Texas | Port of Houston, Texas | 2015– | Three-year demonstration project of three zero-emission heavy-duty Class 8 drayage trucks powered by a hydrogen fuel cell – electric hybrid power system at the Port of Houston. The project received $3.4 M in federal funding and the project partners committed to funding $3.0 M. | Wolfe (2015) |
| **Fuel cell drayage truck** | Hydrogenics, Siemens, Total Transportation Services (TTSI) | Alameda Corridor, Port of Los Angeles & Long Beach, California | 2015– | The "Advanced Fuel Cell Vehicle Technology Demonstration for Drayage Truck" is a project demonstrating a hydrogen fuel cell powered Class 8 drayage truck. | Hydrogenics (2015) |
| **Hydrogen fuel cell hybrid battery electric drayage trucks** | SCAQMD, CTE, TransPower, U.S. Hybrid, Hydrogenics USA | Port of Los Angeles & Long Beach, California | June 2015–September 2018 | Development and demonstration of 6 battery electric trucks with hydrogen fuel cell range extenders for drayage applications. | SCAQMD (2014, 2016b) |
| **Hydrogen fuel cell distribution trucks** | Scania and Asko | Norway | 2016 | 3 three-axle electric distribution trucks powered by hydrogen fuel cells used for distribution services of almost 500 km. The hydrogen gas will be locally produced from solar cells. | Scania (2016) |
| **Fuel cell drayage truck** | Toyota | Ports of LA & Long Beach, California | Summer 2017 | Toyota will test fuel cell trucks system, Project Portal, to determine the feasibility of using fuel cell trucks for port drayage applications. | Toyota (2017) |

As seen in Tables 2 through 5, many of the truck demonstration projects to date have been concentrated in California, Germany, and the Netherlands, with several of the electric road charging projects being carried out in Sweden. The Californian, German, and Swedish governments have spurred demonstration projects in their respective regions with government support, both financially and through direct government involvement. For the 2014–2015 and 2015–2016 fiscal years alone, the California Air Resources Board allocated $84 million in grants for zero-emission truck and bus pilot commercial deployment projects (CARB, 2015c, 2015d). Governments have also shown support through direct involvement in carrying out research and development projects. For example, in 2016, the government of Québec supported a project for all-electric heavy-duty vehicles that included the manufacturing of four prototypes, including two passenger buses and two freight trucks. In 2017, as part of their partnership for innovation, the German and Swedish governments have been conducting a joint study on the electrification of roads to explore the various technical options and business models, as well as how to overcome cross-border interoperability questions and gain European level support (Die Bundesregierung & Government of Sweden, 2017).

Drayage applications around ports in the United States, particularly the ports of Los Angeles and Long Beach, have become a focal point for innovative heavy-duty fuel cell and catenary truck zero-emission demonstration projects. This is driven in large part by the area being a hot spot for increased pollution and public health impacts, resulting in heightened demand for greater emission reductions there. The duty cycle, short distance traveled, and heavily traveled routes of drayage trucks around ports makes them particularly suited for zero-emission technologies, as limited infrastructure (either catenary wires or hydrogen fueling stations) is required to supplied a large number of trucks. In addition, plug-in battery electric trucks have made great strides in the medium-duty delivery sector, with companies—especially those located across the United States and Europe—incorporating thousands of delivery trucks into their fleets. In terms of companies, Siemens has been at the forefront of heavy-duty catenary demonstration projects, partnering with various companies, universities, and government agencies to carry out three projects in California, Germany, and Sweden. Data collection and results from demonstration projects are crucial in leading the way to commercialization of zero-emission vehicles by helping to improve technology, drive down costs, familiarize truck owners and operators with the new technology, and determine and demonstrate best suited applications for the various technologies.

## COMMERCIAL ZERO-EMISSION TRUCKS

Many vehicle manufacturers, both those long established in the industry and new start-up companies, are developing zero emission medium- and heavy-duty vehicles, and some are already producing vehicles at low volume. Among the larger automotive companies, Daimler has announced that it expects to begin production on a fully electric heavy-duty truck in 2020 (Daimler, 2016a). Tesla has revealed that heavy-duty trucks are in the early development phase with a reveal of a prototype electric semi-tractor slated to occur in September 2017 (Musk, 2016). Toyota announced that it is exploring hydrogen fuel cells for heavy-duty drayage truck applications through a California-based feasibility study beginning in summer 2017 (Toyota, 2017). BYD is currently producing Class 5, 6, and 8 electric trucks (BYD, 2016). Renault has also released electric and fuel cell trucks (Renault Trucks, 2015). Among the start-ups that have entered the zero-emission truck market are Nikola Motor Company (a U.S.-based company developing a hydrogen fuel cell powered semi-truck), Charge (a U.K.-based company developing electric trucks), and E-Force (a Switzerland-based company producing fully electric Class 8 trucks). See the Annex for details on the various commercial zero-emission commercial vehicles in development or production.

Among the key specifications for these companies is the available range of vehicle and what vehicle segment the companies envision for these electric and fuel cell vehicles. Figure 3 shows the range of commercial electric and hydrogen fuel cell trucks that are under development, have been announced, or are being produced, according to their respective truck classes. As shown in the figure, plug-in battery electric vehicles encompass the majority of the commercial medium- and heavy-duty trucks with ranges that are generally between 100 to 200 km. Fuel cell electric vehicles allow for significantly higher range across all truck classes. The Nikola One fuel cell announcement indicated a range of over 1,200 km for a Class 8 tractor-trailer application (Nikola, 2016). Further details, including the manufacturer, technology, range, current status, and detailed technology specifications, on these medium- and heavy-duty zero-emission commercial vehicles can be found in the Annex.

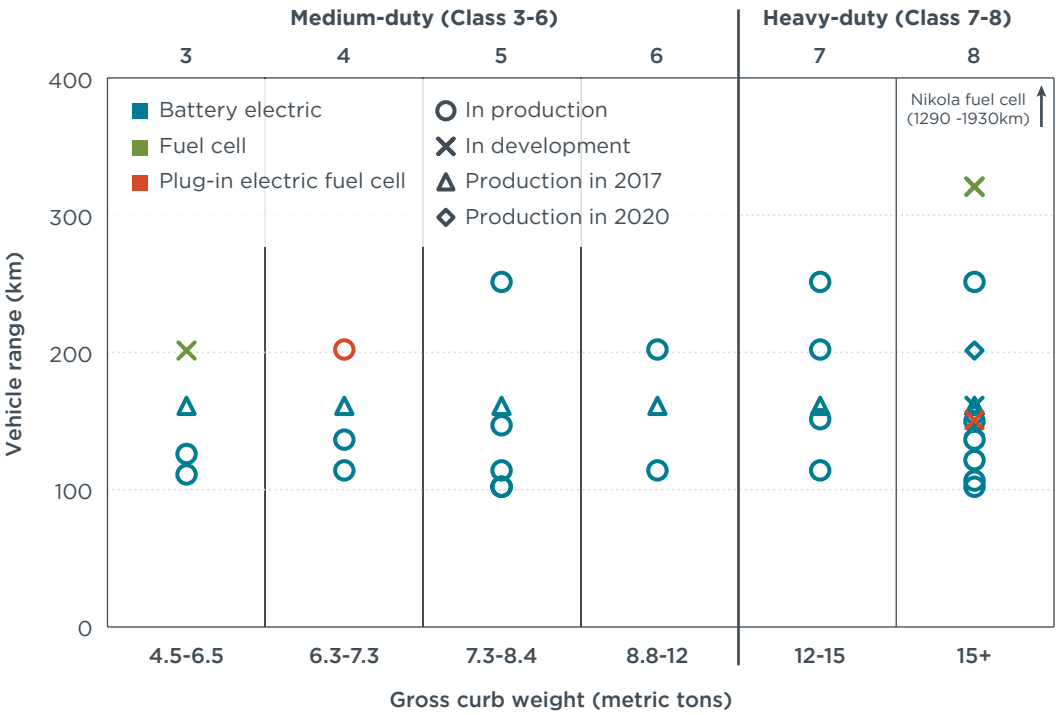


**Figure 3.** Ranges of zero-emission medium- and heavy-duty trucks currently in development or production broken down by truck class.

# III. TECHNOLOGY COST ANALYSIS

To assess zero-emission vehicle technology costs, in this section we develop a cost-of-ownership evaluation of the various vehicle technology alternatives and discuss broader infrastructure costs.

## VEHICLE COST OF OWNERSHIP

To gain an understanding of the viability of various zero-emission heavy-duty technologies for long-haul heavy-duty tractor-trailer applications, we analyzed the technologies under a vehicle-related cost of ownership framework. We base the analysis on the research and available data on vehicle technology costs, efficiency, and emissions from the projects outlined above. We report on results for 2015 through 2030 to show our best estimates of the progression of the costs over time.

The objective of the cost analysis is to illustrate the cost differences of various tractor-trailer technologies over different periods of time. The cost of ownership analysis includes capital costs (tractor-trailer purchase price), maintenance costs, and fuel costs experienced by the owner over the vehicle lifetime. The fuels and technologies considered in the analysis are diesel, diesel hybrid, compressed natural gas, liquefied natural gas, overhead catenary electric, dynamic induction electric, and hydrogen fuel cell. Due to uncertainties related to potential battery-swapping systems, including how many extra battery packs would be needed, we do not include an electric battery-swapping scenario in the analysis. All costs in the analysis are in 2015 U.S. dollars. The analysis is constrained to vehicle and fuel costs. Motor vehicle taxes, insurance costs, driver wages, tolls, and road fees are excluded. The analysis is for vehicle costs; infrastructure costs are discussed further below. We make a series of assumptions on average annual vehicle use, efficiency technology, cost, and fuel cost to develop bottom-up cost models for the various tractor-trailer technologies.

***Vehicle use.*** We analyze the costs for tractor-trailers over 10 years of long-haul freight activity. The more uncertain and varied use of the vehicle after its more intensive long-haul use (perhaps repurposed for less-mileage-intensive applications) in regional or drayage operation is excluded from the analysis, although of course there would still be fuel-saving benefits in that later stage. The vehicle miles traveled with vehicle age over the 10-year period are based on the U.S. EPA's regulatory analysis (U.S. EPA and DOT, 2011), with China and Europe adjusted downward to account for 27% and 40% lower average annual driving distances, respectively. For consistency, the alternative vehicle technologies are assumed to have comparable functionality and reliability as diesel powertrains. The catenary and dynamic inductive grid-operated trucks are assumed to run on 100% electricity and are capable of traveling approximately 80 km powered by the onboard battery pack, assuming an 80% depth of discharge (den Boer et al., 2013). The baseline tractor-trailer is assumed to have three trailers per common industry practice to account for there being three long-haul trailers, on average, in operation for every tractor (Meszler, Lutsey, & Delgado, 2015). The average annual distance traveled for each region over the lifetime of the vehicle along with additional data sources and assumptions are provided in the Annex.

***Efficiency.*** The average tractor-trailer fuel consumption for China, Europe, and U.S. diesel tractor-trailers are taken from various regulatory and research studies. The 2015 fuel economy is assumed to be 5.4 mpg (44 L/100km) in China, 6.9 mpg (34 L/100km)

in Europe, and 5.9 mpg (40 L/100km) in the U.S. (based on Delgado, 2016; Muncrief & Sharpe, 2015). The fuel efficiency for the new U.S. tractor-trailers is assumed to improve, following the Phase 2 U.S. greenhouse gas emissions and fuel efficiency standards, which result in a 2027 fuel economy of 9.1 mpg (26 L/100km) (Sharpe et al., 2016). Europe tractor-trailer fuel efficiency is based on the 2015 real-world testing of tractor-trailers of 6.9 mpg (34 L/100km) (Muncrief & Sharpe, 2015). When considering improved technology in Europe from 2021 on, we assume a 2.5% per year annual fuel consumption reduction. This is based on the average between incremental and moderate improvements analyzed in Delgado et al. (2016) and assumes that $CO_2$-reduction standards will be implemented in Europe. For China, the fuel efficiency is assumed to follow the Stage 3 China fuel consumption standards, achieving 6.3 mpg (37 L/100km) in 2020 (Delgado, 2016). After 2020, the China tractor-trailer fuel consumption is assumed to improve by 2.5% annually, similar to Europe, assuming new standards will be implemented there.

For diesel hybrid tractor-trailers, we assume a reduction in fuel consumption of 5% in the U.S. and China and 7% in Europe relative to the conventional diesel average (Rodriguez, Muncrief, Delgado, & Baldino, 2017). Natural gas engines are assumed to follow the same fuel efficiency improvements as diesel engines at a 10% and 15% efficiency loss for compression ignition (CI) and spark ignition (SI) engines, respectively (Delgado & Muncrief, 2015; Kasten et al., 2016). The energy consumption for fuel cell, catenary electric, and dynamic induction electric tractor-trailers are taken to be 9.5 megajoule per kilometer (MJ/km), 5.7 MJ/km, and 9.0 MJ/km, based on a variety of sources, and are assumed improve by 1% annually for catenary electric and 2% for fuel cell and dynamic induction electric (based on Akerman, 2016; den Boer, 2013; Kasten et al., 2016; Schmied, Wüthrich, Zah, Althaus, & Friedl, 2015. The energy consumption assumptions for these vehicle technologies are provided in the Annex.

***Technology cost.*** The base diesel tractor-trailer in the U.S. is assumed to cost $210,000, including a tractor at $135,000 with three trailers at $25,000 each (Meszler et al., 2015). The comparable base tractor-trailer cost for Europe is estimated to be approximately the same, before future efficiency technology is considered. Based on data on comparable tractor and trailer costs, the heavy-duty tractor-trailer is approximated at $90,000 for China. Battery and fuel cell system costs vary widely in the literature, depending on innovation, supplier competition, and economies of scale that are underway largely as a result of light-duty vehicle developments. We base our electric-drive vehicle costs on Slowik et al. (2016) and Wolfram & Lutsey (2016). Slowik et al. (2016) summarized a range of lithium ion battery pack costs from 2015 to 2023 for medium- and high-volume scenarios, and found costs ranging from approximately $230/kWh to $420/kWh in 2015 and $150/kWh to $225/kWh in 2023. The battery costs applied here are within that study's medium- and high-volume projections. The expected reduction in lithium-ion battery costs is attributed to the replacement of high-cost materials, economies of scale, improvements to battery design and production methods, manufacturing improvements, and competition among suppliers.

Table 6 shows our key component cost assumptions for 2015–2030. We apply estimates from Wolfram & Lutsey (2016) to estimate fuel cell system costs. Based on annual production of 1,000, fuel cell system costs are estimated at $240 per kilowatt (kW) in 2015; with increasing production to 10,000 in 2025, the cost drops to $89/kW, then to production of 50,000 in 2030 to $59/kW. Both battery pack and fuel cell systems are assumed to use similar technology in heavy-duty applications as in light-duty, and

therefore these component prices are assumed to follow price projections for light-duty vehicles. This allows greater economies of scale in heavy-duty applications. The assumption is in line with Tesla's statement that the upcoming Tesla Semi will share parts with its electric car production and Toyota's announcement that its Class 8 fuel cell tractor will use its Mirai passenger car fuel cell stacks (Lambert, 2017; Toyota, 2017). Cost of the additional required fuel cell and battery electric systems are the electric systems (power electronics, battery management systems, etc.) necessary to control the power transfer. These additional costs are anticipated to decrease over time as the technology increases in volume and continues to improve.

**Table 6.** Estimated vehicle component costs for vehicles purchased in 2015–2030.

| Component Costs | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|
| **Battery ($/kWh)** | 326 | 228 | 168 | 120 |
| **Electric motor fixed cost ($)** | 120 | 94 | 85 | 75 |
| **Electric motor ($/kW)** | 22 | 18 | 16 | 14 |
| **Fuel cell system ($/kW)** | 240 | 166 | 89 | 59 |
| **Additional fuel cell systems ($/kW)** | 38 | 34 | 31 | 28 |
| **Overhead catenary vehicle grid connection ($)** | 71,700 | 49,600 | 21,200 | 21,200 |
| **Dynamic induction vehicle grid connection ($)** | 16,700 | 11,800 | 11,500 | 10,800 |
| **Additional electric vehicle systems ($/kW)** | 55 | 52 | 46 | 41 |

*Based on den Boer et al., 2013; Slowik et al., 2016; Wolfram & Lutsey, 2016*

Internal combustion engine costs are forecasted to increase over time as additional improvements and new technologies will be required to meet tightening efficiency and exhaust after-treatment regulations (den Boer et al., 2013). The baseline cost for internal combustion engines is assumed, based a study done by CE Delft (2013), to be $118/kW. The forecasted costs associated with engine improvements and vehicle efficiencies are based on a study conducted by Meszler et al. (2015). That study estimated a wide range of technology packages that are applicable for meeting global heavy-duty vehicle efficiency standards; therefore, we apply technology costs from that study for the projected costs of advanced efficiency technologies for heavy-duty vehicles to meet the expected incremental efficiency improvements (as mentioned above) in the 2020–2030 timeframe.

Based on the above assumptions, Table 7 summarizes the tractor-trailer capital costs for 2015–2030. The total tractor-trailer capital cost is amortized over 10 years at a 10% interest rate. The analysis excludes analysis of the residual value of the tractor-trailer because previous studies have found that the residual value is insignificant to the overall outcome of the cost analysis (see Lee & Thomas, 2016). As shown, the total vehicle costs for all alternative vehicles are more expensive than diesel vehicles initially. Over time, the total costs for alternative vehicle types are forecasted to be less than diesel as the costs of new technologies decrease greatly as a result of anticipated increases in production. The alternative vehicles and their components benefit from economies of scale, technology improvements, and production optimizations, greatly reducing their overall costs. The total initial vehicle purchase cost, rounded to the nearest thousand, is shown in Table 7, and the total breakdown of costs for the components of each vehicle is shown in the Annex.

**Table 7.** Total estimated tractor-trailer capital costs (in thousands of 2015 U.S. dollars).

| | | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|
| China | Diesel | 90 | 91 | 95 | 100 |
| | Hybrid electric | 101 | 101 | 103 | 108 |
| | Liquefied natural gas (compression ignition) | 118 | 116 | 115 | 116 |
| | Liquefied natural gas (spark ignition) | 153 | 147 | 143 | 141 |
| | Compressed natural gas (spark ignition) | 113 | 110 | 108 | 109 |
| | Hydrogen fuel cell | 256 | 196 | 164 | 150 |
| | Electric overhead catenary | 220 | 178 | 138 | 131 |
| | Electric dynamic induction | 251 | 140 | 128 | 121 |
| Europe | Diesel | 204 | 204 | 208 | 218 |
| | Hybrid electric | 229 | 226 | 227 | 236 |
| | Liquefied natural gas (compression ignition) | 267 | 260 | 255 | 255 |
| | Liquefied natural gas (spark ignition) | 239 | 232 | 228 | 228 |
| | Compressed natural gas (spark ignition) | 256 | 246 | 239 | 237 |
| | Hydrogen fuel cell | 342 | 281 | 249 | 236 |
| | Electric overhead catenary | 306 | 262 | 222 | 218 |
| | Electric dynamic induction | 251 | 225 | 213 | 208 |
| United States | Diesel | 210 | 220 | 223 | 250 |
| | Hybrid electric | 234 | 242 | 242 | 268 |
| | Liquefied natural gas (compression ignition) | 270 | 270 | 260 | 273 |
| | Liquefied natural gas (spark ignition) | 242 | 242 | 233 | 246 |
| | Compressed natural gas (spark ignition) | 259 | 256 | 255 | 255 |
| | Hydrogen fuel cell | 345 | 281 | 253 | 255 |
| | Electric overhead catenary | 309 | 272 | 227 | 236 |
| | Electric dynamic induction | 254 | 234 | 218 | 226 |

*Values rounded to nearest 1,000*

***Maintenance costs.*** Baseline maintenance and repair costs are based on those from Argonne National Laboratory's GREET model. The model assumes similar incremental maintenance and repair costs across various vehicle types but considers the reduced costs for hybrid and electric drive heavy-duty vehicles (Burnham, 2016). The costs are provided on a per-kilometer basis and are assumed to remain constant for vehicles produced in 2015 through 2030. The maintenance and repair costs are assumed to be $0.12 per kilometer for diesel and natural gas tractor-trailers and $0.11 per kilometer for diesel hybrid, electric powered, and fuel cell tractor-trailers. As tractor-trailers become more efficient over time in the analysis, the maintenance costs become a higher percentage of the total vehicle operating costs.

***Fuel cost.*** We base our forecasted diesel fuel price on the International Energy Agency (IEA) World Energy Outlook (WEO) 2015 and the natural gas prices from U.S. EIA (IEA, 2015; U.S. EIA, 2017a). The differences between fuel prices in China, Europe, and the U.S. are assumed to be the same as their historical differences. The historical natural gas prices are from the Eurostat database for Europe and from a study done by the Oxford Institute for Energy Studies for China (Eurostat, 2017a; Li, 2015). Historical

diesel fuel prices are based on World Bank data (World Bank, 2017). The IEA WEO projects crude oil prices from $50 per barrel in 2015, increasing to $128 per barrel through 2040. Electricity price projections for the U.S. follow the U.S. EIA's Annual Energy Outlook 2017 transportation electricity price projections (U.S. EIA, 2017b), and prices in China and Europe are based on Eurostat and Lawrence Berkeley National Laboratory data (Eurostat, 2017b; LBNL, 2014). Our estimated hydrogen fuel price decreases from $12 per kilogram in 2017 to $4 in 2030 for natural gas-based hydrogen (based on Fulton & Miller, 2015). In addition, we assume the that the cost of hydrogen drops to $5 per kilogram for hydrogen produced from renewable energy electrolysis (Fulton & Miller, 2015). The future fuel costs are discounted using a 4% discount rate to determine the net present value for each vehicle purchase.

***Vehicle-related cost of ownership.*** Figure 4 shows the vehicle-related cost of ownership for trucks in China, Europe, and the U.S. for long-haul heavy-duty tractor-trailers for 2015 through 2030. The graphs show the breakdown of the tractor-trailer capital cost, maintenance cost, and fuel cost over 10 years of operation. The cost analysis excludes infrastructure cost for the dynamic inductive grid and overhead catenary technologies, which are discussed further below. By analyzing the 10-year operating cycle, we intend to cover at least the first phase of the tractor life while it is in long-haul operation. With uncertainties about total electricity throughput, charging–discharging cycles, and any degradation over time for catenary and in-road charging electric tractors, we do not include battery replacements. The results are summarized for the various vehicle technologies as compared to conventional diesel (which increases in efficiency over time), diesel hybrid (which retains an efficiency advantage over conventional diesel), and three natural gas technologies (liquefied compression ignition, liquefied spark ignition, and compressed spark ignition). Two fuel cell technology pathways are shown, first for natural gas-derived hydrogen and second for renewable source-derived hydrogen.

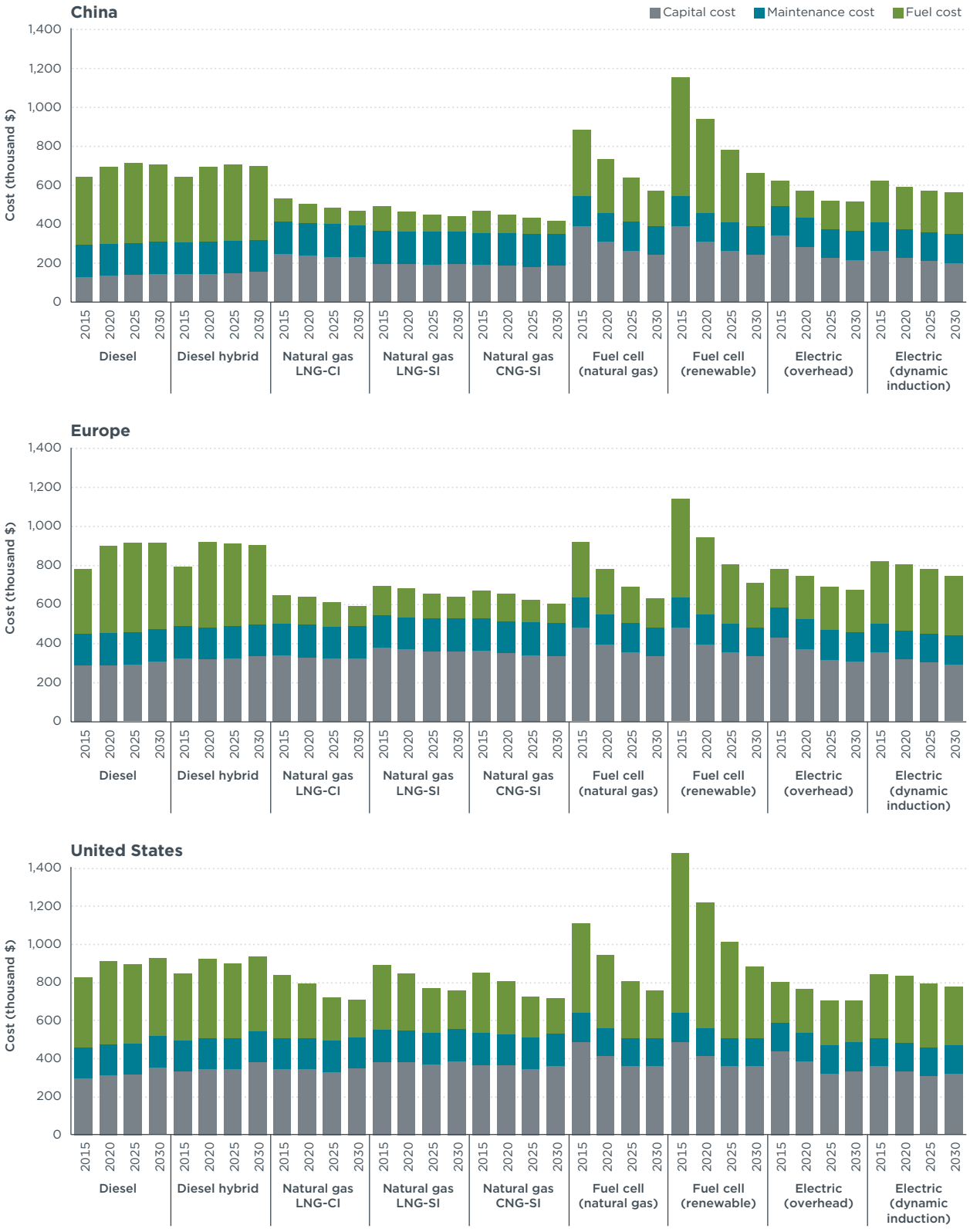


**Figure 4.** Cost of ownership in China, Europe, and the United States for each long-haul heavy-duty truck technology for a vehicle purchased in 2015–2030 broken down by capital cost, maintenance cost, and fuel cost.

Figure 4 illustrates the results on the various technologies' associated costs. The figure shows how conventional diesel vehicle costs increase incrementally, but are relatively consistent in future years, as compared to the alternative fuel technologies. Essentially all the other technologies see reduced cost of ownership over time, primarily because their capital technology costs decrease from 2015 through 2030. Natural gas, especially the liquefied natural gas with compression ignition, consistently offers among the lowest cost of ownership.

The zero-emission vehicle technologies show the greatest cost reductions from 2015 to 2030. Fuel cell technology shows the largest reduction in cost over time, due to both the expected drops in fuel cell costs and hydrogen costs. Excluding infrastructure costs, the two electric vehicle scenarios, induction and overhead catenary, ultimately arrive at among the lowest total vehicle cost in the 2025–2030 timeframe, similar to natural gas. Compared with diesel vehicles in 2030, overhead catenary results in 25%–30% lower costs, in-road induction results in 15%–25% lower costs, and hydrogen fuel cells result in 5%–30% lower costs to own, operate, and fuel. The reduced vehicle costs for electric tractor-trailers result in upfront costs that are similar to conventional diesel trailers in the 2025–2030 timeframe—aided, of course, by the distributed electric power, which allows smaller battery packs than would otherwise be needed. The gap in costs between conventional diesel and electric technology further widens across regions, as diesel tractor-trailers become incrementally more advanced and as compliance with future efficiency regulations becomes more expensive. Overall, when comparing the costs across the three major regions, the technologies show similar relative technology comparisons, although in absolute terms the costs are higher in the U.S., as a result of the U.S. having the largest annual distance traveled per truck.

## SUPPORTING INFRASTRUCTURE COSTS, VIABILITY, AND IMPLEMENTATION

Beyond the cost of ownership, the cost, availability, and implementation of the required infrastructure is also of great importance in determining the viability of zero-emission technologies in the heavy-duty sector. The required infrastructure is particularly important for the long-haul heavy-duty applications analyzed above, as these trucks cover large distances and would need extensive charging (overhead catenary wires, or in-road inductive or conductive charging) or natural gas or hydrogen refueling infrastructure. On the other hand, the required infrastructure to support regional heavy-duty, waste, and drayage trucks tends to be easier to implement and less costly as these trucks tend to follow set routes, have greater downtime, and cover much shorter distances. Required infrastructure for regional heavy-duty vehicles could be quite similar to the charging and hydrogen infrastructure for battery electric and hydrogen fuel cell buses, which have been implemented in some regions, especially in China (and also increasingly in some cities in Europe and the U.S.).

Although there is considerable uncertainty, approximate first estimates are available for the applicable charging infrastructure costs. Overhead catenary wires provide a continuous supply of power to trucks, requiring an extensive and continuous network of energy infrastructure along roadways. In addition to the catenary wires, infrastructure to support the necessary supply of electricity (substations, connection to the grid, transformer, and rectifiers) need to be added to motorways (den Boer et al., 2013). Catenary wires are estimated to cost between $0.8 million and $3.8 million per kilometer, with annual operation and maintenance costs of 1%–2.5% of the initial capital

cost of the catenary and energy infrastructure (based on den Boer et al., 2013; Gladstein, Neandross & Associates, 2012; Siemens, 2016b). Once completed in various regions, these electric charging systems would enable high utilization, which would allow for the overall system costs to be spread over many heavy-duty vehicles over time.

Similar to catenary wires, dynamic grid inductive or conductive charging requires expensive energy support infrastructure in addition to the necessary charging on top of, or under, the roadway. The installation of underground infrastructure could be more costly and invasive than overhead catenary wires, but it could have lower maintenance requirements, because there is no wear and tear on the components. Dynamic grid in-road infrastructure is estimated to cost between $2.5 million and $4 million per kilometer, with annual operation and maintenance costs of 1% of the initial installation cost of the charging infrastructure (Connolly, 2016; den Boer et al., 2013). These road charging systems would enable high utilization.

Hydrogen fueling station cost estimates have ranged from $350,000 to $5.3 million (Wolfram & Lutsey, 2016). Hydrogen refueling times are comparable to conventional diesel and gasoline vehicles. Quick refueling times allow for the possibility of high utilization of fueling stations and therefore distributes the investment costs over the use of many vehicles. Estimating the cost of hydrogen fueling stations on a per-vehicle basis is difficult because it is dependent upon the station's utilization and hydrogen throughput, which are uncertain. In the hydrogen case, how quickly the shift toward high station utilization happens could be partially dependent upon whether both passenger and heavy-duty freight vehicle approaches grow and co-evolve. Other key considerations with hydrogen cost implications are the exact production, transport, and distribution system (e.g., compressed or liquefied hydrogen, pipeline or truck distribution) involved with supplying the fuel to stations.

To help inform on infrastructure and system-level costs, we summarize results from a directly applicable study by the Öko Institut. Kasten et al. (2016) conducted a comprehensive study comparing the cost of energy supply, energy supply infrastructure (investment, maintenance and operation, and connection costs for gas stations or charging infrastructure), and vehicle purchase cost for alternative vehicle technologies to conventional fossil fuel–powered vehicles. The study compared four alternative scenarios to decarbonize and reduce air pollution from the German fleet of trucks in the long-haul freight sector. These scenarios were (a) internal combustion, with power-to-liquid fuels with very low lifecycle carbon emissions; (b) overhead catenary line electricity for hybrid diesel-electric powertrain; (c) liquefied natural gas from low-carbon power-to-gas methane; and (d) fuel cell with liquefied power-to-gas hydrogen. The study estimated the additional cost for each of the scenarios from 2010 to 2050 compared to the reference case, where the whole long-haul heavy-duty fleet would otherwise be powered by conventional diesel fuel.

The results from Kasten et al. (2016) on the energy supply, infrastructure, and vehicle costs for long-haul freight road transport are shown in Figure 5. As shown, the costs range from $100 billion to $400 billion dollars from 2010 to 2050, so any of these approaches would amount to a major transportation overhaul to help decarbonize the freight sector. Because the scenarios were set to have comparable emission-reduction benefits, the scenario with the lowest total cost (i.e., overhead catenary electric system) provides the most cost-effective long-term greenhouse gas reduction. The analysis does not consider the relative practical feasibility of implementing the different alternative

technologies. The figure shows that even though the overhead electric option is infrastructure intensive, it compares very favorably against the options to use renewable power to develop liquid combustion diesel replacements, natural gas, and hydrogen—each of which has significant energy supply, infrastructure, and vehicle costs.

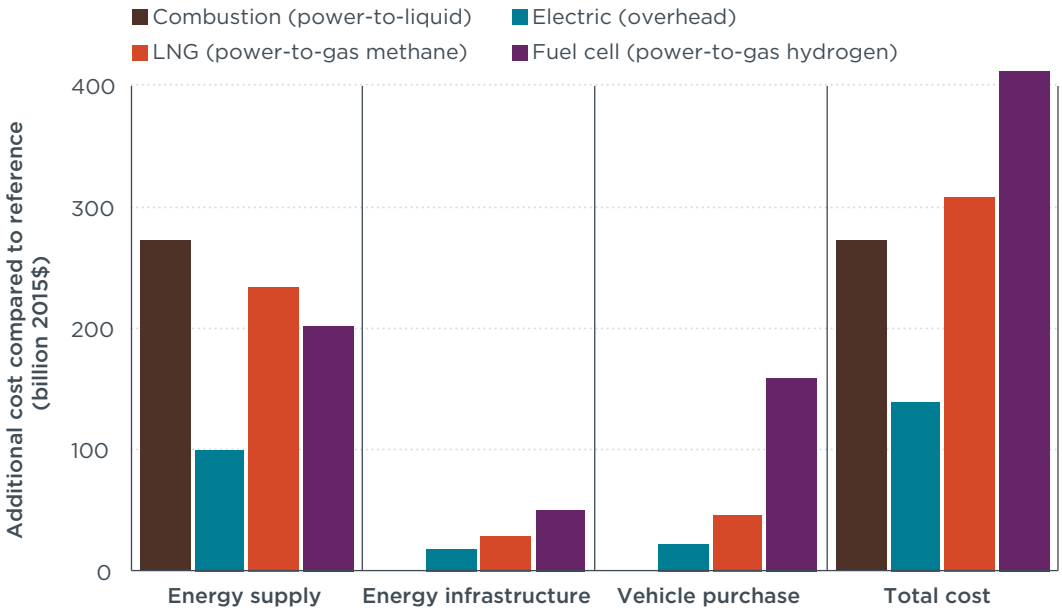


**Figure 5.** Additional cost for four different greenhouse gas reduction scenarios compared to the reference case (all fossil fuel use) for the long-haul heavy-duty freight transport sector in Germany (based on Kasten et al., 2016).

For further information on the Kasten et al. (2016) study summarized in the figure, the trucks powered by the overhead catenary system are assumed to be hybrids, powered by electric energy 75% of the time through the catenary wires or the small on-board battery and the remaining 25% of the time by an internal combustion engine powered by power-to-liquid fuel. For this case, it is assumed that 4,000 km (approximately 30%) of the German federal motorways are electrified. The market introduction of the overhead catenary trucks is assumed to begin in 2025 and ramp up to 90% of new registrations by 2050. For the power-to-gas natural gas scenario, trucks will enter the market in 2015 and reach full penetration by 2035. In the power-to-gas hydrogen case, fuel cell trucks would be introduced to the market in 2020 and reach full penetration by 2035. In the combustion scenario, the trucks would be fully powered by low-carbon power-to-liquid fuels by 2050.

Although road electrification has high upfront costs from the required energy infrastructure, these costs are dwarfed in the long term by cheaper energy supply costs compared to alternative liquid fuels. The study indicates that the cost of energy infrastructure is relatively small compared to the high cost of energy supply and vehicle costs over the long-term, leading to the result that electrification is the most cost-effective technology for freight transport in the long-term. A similar effect can be seen for the power-to-gas hydrogen case, for which the costs of the market introduction of fuel cell heavy-duty trucks drives the high costs of vehicle purchase. In this case, the cheap energy supply costs and the low system costs (both compared to the

power-to-liquid and the power-to-methane option) would become effective after the transformation process and in a longer timeframe than 2050.

Although it is the most cost-effective option, road electrification would require sustained political support to offset the upfront cost and the initially unprofitable operation of charging infrastructure. It would also need public support, high fleet participation and utilization, and international coordination. All scenarios require broad support but could be implemented, to some degree, in a modular and incremental way, focusing on one region, with one or several fuel production facilities and refueling stations and several nearby routes at a time.

# IV. ANALYSIS OF EMISSIONS IMPACTS

## VEHICLE TECHNOLOGY GREENHOUSE GAS EMISSIONS

To gain an understanding of the emissions impacts of the various tractor-trailer technologies, we analyze the lifecycle greenhouse gas emissions for each technology for a truck purchased in 2015 through 2030. In addition to the assumptions used above in the cost ownership analysis, we include the upstream fuel cycle emission impacts associated with the production of the various fuel. We apply the carbon intensities of diesel, natural gas, and hydrogen for 2015 from California's Low Carbon Fuel Standard (LCFS) across all regions.

Table 8 shows the assumed fuel carbon intensities that we apply to our lifecycle analysis. Carbon intensities for diesel and natural gas are assumed to remain constant from 2015 through 2030, whereas the carbon intensity of hydrogen is expected to decrease significantly as hydrogen transitions from being produced mainly from fossil fuels through steam-methane reformation to being produced from renewable energy sources. For hydrogen's carbon intensity, we assume a 5% annual reduction based on continued policy to ensure that fuel supply was low carbon. The carbon intensity of electricity is based on the IEA WEO 2015 electricity assumptions for each of the respective regions and similarly assumes sustained efforts to decarbonize (i.e., their 2°C climate stabilization scenario). We note that there are many regions (e.g., Norway and Québec) where the electricity carbon intensity is already near zero, as a result of electricity generation predominantly coming from renewable energy sources. In such cases, electric vehicle applications offer over a 95% reduction in carbon emissions.

**Table 8.** Fuel carbon intensities ($gCO_2e/MJ$) for 2015 and 2030 and the percent reduction in emissions from 2015 to 2030.

| Fuel | Region | Fuel carbon intensity ($gCO_2e/MJ$) | | Greenhouse gas emission reduction in 2030* |
|---|---|---|---|---|
| | | 2015 | 2030 | |
| **Diesel** | All | 102 | 102 | - |
| **Compressed natural gas** | All | 81 | 81 | - |
| **Liquefied natural gas** | All | 86 | 86 | - |
| **Hydrogen** | All | 151 | 70 | 54% |
| **Electricity** | United States | 144 | 49 | 66% |
| | Europe | 101 | 44 | 57% |
| | China | 202 | 82 | 60% |

**Greenhouse gas emission reduction includes on-vehicle efficiency improvement (i.e., relative MJ per kilometer)*

The total lifecycle wheel-to-well greenhouse gas emissions in carbon dioxide equivalents ($CO_2e$) for each long-haul heavy-duty freight truck technology for tractor-trailers purchased in 2015 through 2030 are shown in Figure 6. The three panes represent the unique assumptions and characteristics (e.g., vehicle efficiency, annual vehicle travel activity over vehicle life) for the trucks purchased and operated in China, Europe, and the U.S.

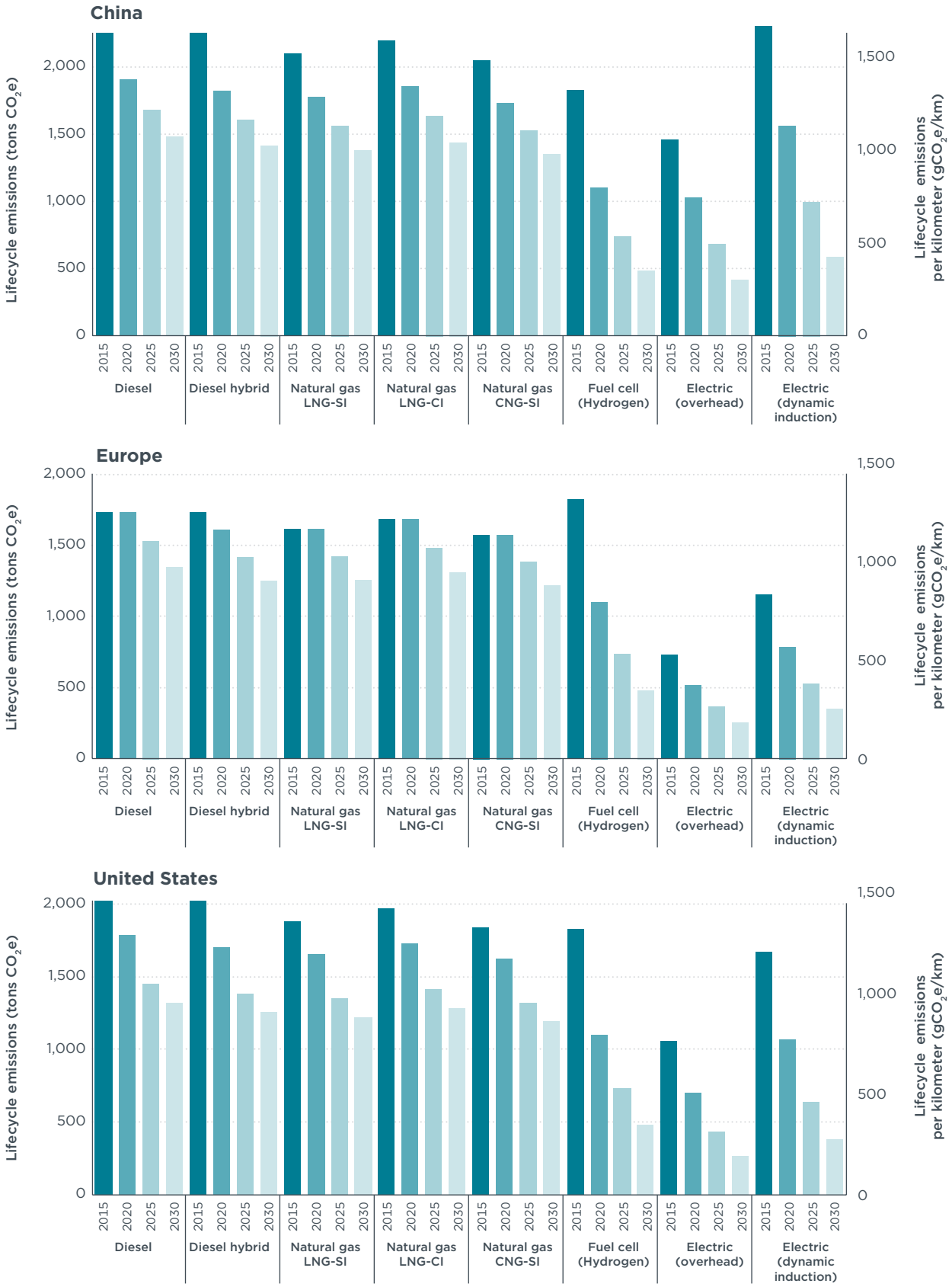


**Figure 6.** China, Europe, and U.S. lifecycle $CO_2$ emissions over vehicle lifetime (left axis) and per kilometer (right axis) by vehicle technology type.

Major emission differences across the technologies and over time are apparent from the figure. For 2015, catenary electric vehicles have 35%, 58%, and 48% lower lifetime $CO_2$e emissions than conventional diesel vehicles in China, Europe, and the U.S., respectively, while fuel cell vehicles have 19%, 5%, and 10% lower emissions. We note that in the case of China, dynamic induction electric vehicles have comparable $CO_2$e emissions to diesel in 2015 as a result of high grid emissions and reduced efficiency of dynamic grid electric vehicle in comparison to catenary electric, but the emissions significantly decrease over time as the grid decarbonizes. The diesel and natural gas technologies are relatively similar in their $CO_2$ emission levels. As shown in Figure 6, there is the potential for major reductions in all the vehicle technology types in the 2025–2030 timeframe. In the case of the diesel and natural gas technologies, the emission reductions are driven by efficiency technology on the vehicle. On the electric and fuel cell technologies, the emission reductions are driven primarily by the reduced fuel carbon intensity. The diesel tractor-trailer is shown with greatly reduced carbon intensity, with a 22%–35% reduction from 2015 to 2030. The fuel cell technology results in a 73% reduction in carbon emissions from 2015 to 2030. The catenary and dynamic induction electric vehicle technology show a reduction of 66%–76% and 61%–77%, respectively, by 2030 across the three regions.

Overhead catenary electric heavy-duty trucks have the lowest lifetime emissions in each region. In China, catenary electric trucks deliver a 72% reduction from the 2030 high-efficiency diesel emission level (an 82% reduction from the 2015 diesel baseline). In Europe, the catenary electric truck provides an 81% reduction in emissions as compared with the high-efficiency 2030 diesel truck (an 87% reduction from the 2015 baseline). In the U.S., catenary electric trucks deliver an 80% reduction over the high-efficiency 2030 diesel (an 88% reduction from the 2015 baseline). The emission benefits from the hydrogen fuel cell technology cases were also very substantial: The $CO_2$ reductions were 62%–67% as compared with the 2030 high-efficiency diesel (73%–78% reduction from the 2015 baseline diesel).

## FLEET LEVEL IMPACTS OF ZERO-EMISSION TRUCK PENETRATION

To further inform the question about how zero-emission trucks could contribute toward climate change goals, we conducted a narrower analysis of the penetration of zero-emission trucks in one particular market—Europe. As indicated earlier, many of the details of the above vehicle cost analysis are uncertain, and the analysis is driven by a series of assumptions without firm real-world data. Beyond questions about the cost and necessary infrastructure and energy supply deployment, the future penetration of the technologies is even more uncertain because it is dependent on many industry, government, and market factors. Yet, we provide an illustrative, first-order analysis of fleet emissions to assess the potential impact of greater deployment electric-drive heavy-duty vehicle technologies if the prevailing technology and institutional barriers are overcome.

The broader context for long-term climate scenarios is the Paris climate agreement, signed by nearly every nation, which establishes the goal of limiting the increase in global average temperatures to below 2°C above the pre-industrial temperature. The leaders of the European Union adopted the 2030 climate and energy framework in 2014. The framework sets a binding target for the EU to reduce total greenhouse gas emissions by at least 40% below 1990 levels in 2030 and reduce emissions from transportation by 30% relative to 2005 levels by 2030 (European Commission, 2017a). The European Commission created the Energy Roadmap 2050 to explore the options of transitioning the energy system to meet the long-term goals of cutting emissions 80%–95% from 1990 levels by 2050 in the most

competitive manner while achieving maximum energy security (European Commission, 2017a, 2017b). The transport sector is required to reduce emissions at least 60% below 1990 levels by 2050 while allowing for increased mobility and a competitive transport sector (European Commission, 2011a, 2011b).

We analyze the impact of the penetration of zero-emission heavy-duty vehicle technologies in the European fleet from 2015 to 2050 to estimate the $CO_2$ emission impact. Our analysis is focused on the tractor-trailer portion of the heavy-duty fleet. The analysis applies the International Council on Clean Transportation (ICCT) Roadmap vehicle stock-turnover model (see ICCT, 2017). This model simulates advanced technologies being phased into the fleet beginning in 2020 as new vehicles increasingly take over larger fractions of freight activity through 2050, whereas older vehicles' activity decreases over time until they are eventually retired from the fleet. The vehicle stock-turnover model provides greater perspective on how quickly the climate benefits accrue from transitioning to zero-emission technologies over time.

Figure 7 shows four scenarios for lifecycle $CO_2$ emissions of tractor-trailers in Europe, reflecting varying technology penetrating the new vehicle fleet from 2020 through 2050. The first scenario is the base case, which assumes the entire European tractor-trailer fleet remains completely composed of internal combustion engine vehicles powered by diesel fuel without adopting additional efficiency standards that promote greater efficiency. The second scenario assumes that efficiency standards are implemented, leading to advanced diesel efficiency improvements based on the best available technology. We include two zero-emission vehicle scenarios, with each reflecting the possibility that one technology becomes the leading technology over time, while the other remains in more niche applications in the fleet. The two zero-emission vehicle scenarios build upon the diesel efficiency improvements (i.e., all the scenarios other than the base case include the diesel improvements). The fuel cell–intensive scenario has initial fuel cell tractor-trailer sales starting in 2020 and ramping up to reach 50% of the sales share in 2050, and overhead catenary electric tractor-trailer sales starting in 2020 and reaching 15% of the sales share in 2050. The final electric-intensive scenario has electric sales starting in 2020 and ramping up to 50% of the sales share in 2050, and fuel cells starting in 2020 and reaching 15% in 2050.

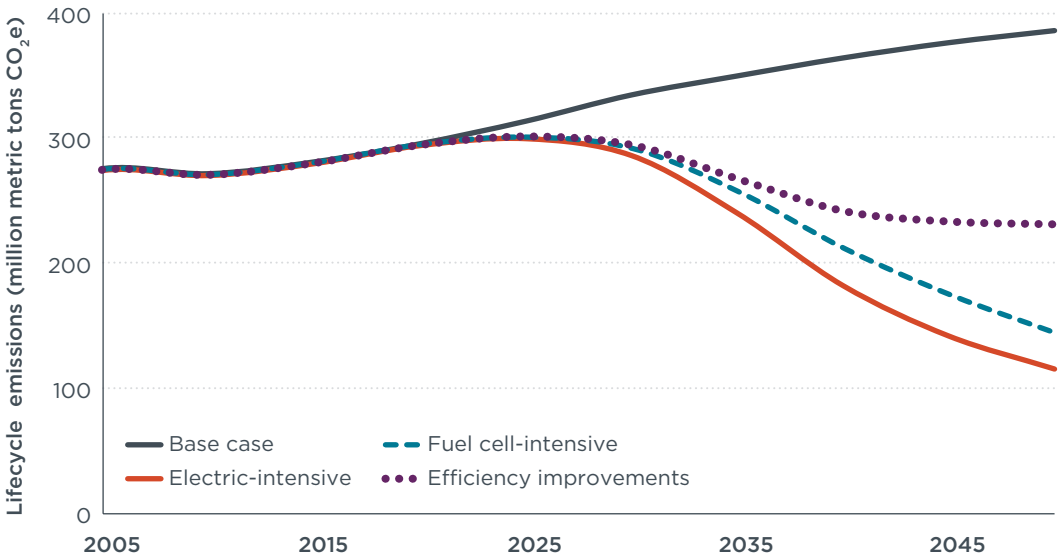


**Figure 7.** Lifecycle $CO_2e$ emissions from Europe heavy-duty tractor-trailer fleet from 2015–2050, with base case, efficiency improvements, fuel cell-intensive, and electric-intensive scenarios.

Table 9 summarizes several key greenhouse gas emission results from the vehicle deployment scenarios shown in Figure 7. Under the base case, the lifecycle emissions are estimated to increase approximately 38% from 2015 to 2050, from 281 to 386 million metric tons of $CO_2e$. With incremental diesel efficiency technology improvements linked to efficiency standards (but without any zero emission vehicles) in the fleet from 2015 to 2050, $CO_2$ emissions in the 2050 fleet would decrease by 156 million tons—a 40% reduction from the base case in 2050. As shown in the efficiency scenario, $CO_2$ emissions begin to flatline after 2035, as the incremental efficiency gains slow and freight activity continues to increase. For the fuel cell–intensive scenario, emissions are estimated to peak around 2025 at 300 million metric tons of $CO_2e$ and proceed to decrease through 2050, resulting in a 63% reduction in emissions relative to the base case in 2050. Finally, for the electric-intensive scenario, emissions are expected to peak around 2025 at 300 million metric tons of $CO_2e$ and proceed to decrease through 2050, resulting in a 70% reduction in emissions relative to the base case in 2050.

**Table 9.** GHG emissions from EU tractor-trailers for baseline, fuel cell vehicle–intensive, and electric vehicle–intensive scenarios for 2050, with associated change in emissions

| Scenario | Emissions by year (million ton $CO_2e$) | | | Change in emissions | |
|---|---|---|---|---|---|
| | 2005 | 2015 | 2050 | 2015 to 2050 | From 2050 base case |
| **Base case** | 275 | 280 | 386 | | |
| **Increased efficiency** | 275 | 280 | 230 | –18% | –40% |
| **Fuel cell intensive** | 275 | 280 | 145 | –48% | –63% |
| **Electric intensive** | 275 | 280 | 115 | –59% | –70% |

Both scenarios with substantial penetration of zero-emission vehicle technologies show substantial reduction in emissions relative to the base scenario and their overall $CO_2$ emissions in absolute terms. The fuel cell–intensive case results in 47% lower emissions in 2050 than in 2005. The electric-intensive case would cut emissions by 58%. Therefore, these scenarios underscore the great challenge at hand to decarbonize heavy-duty freight emissions. Advanced diesel efficiency technology and greatly accelerated penetration of zero emission vehicles will be required to achieve the 30% $CO_2$ emission reduction from the heavy-duty vehicle sector in 2030 and 60% reduction by 2050 relative to 2005 levels, as targeted by the European Commission.

Several recent analyses also help to estimate the potential and the implications for greater penetration of advanced heavy-duty vehicle electric drive technologies. A European Union analysis indicates that nearly 40% of highways could be electrified with overhead electric lines, up to 90% of new long-haul tractor-trailers could be electric, and up to 34% of heavy-goods vehicle activity could be powered by electric vehicles by 2050 (Ministry of the Environment, Energy, and Sea, 2016; Transport & Environment, 2016). A Germany-focused study on the increasing role of transport electrification includes a scenario for up to 80% tractor-trailer activity being powered by overhead catenary systems by 2050 (Renewbility, 2016). The IEA assesses technologies and freight-system improvements to decarbonize freight trucks and illustrates the importance of electrification to achieve deep carbon cuts (IEA, 2017). Essentially all of these studies agree with our findings that developing electric-drive pathways is key to being able to substantially decarbonize heavy-duty vehicles.

# V. FINDINGS AND CONCLUSIONS

Decarbonizing heavy-duty vehicle activity by transitioning to zero-emission vehicle technologies, including electricity and hydrogen technologies, presents an immense challenge. Yet, there are many promising technologies that have been demonstrated and announced that prove the technical viability and suggest how these technologies could eventually be deployed on a large scale. Mass deployment of zero-emission vehicles can enable greater impact on reducing emissions and energy use, while helping to enable more renewable energy use. The ongoing zero-emission truck projects around the world in 2017 inform the vision forward on where the sector can go if motivated governments and companies act to deploy the technology beginning in 2020.

Table 10 summarizes our findings regarding the potential benefits, prevailing barriers to widespread adoption, and the relatively promising market segments for various zero-emission technologies for heavy-duty freight vehicles. The table summarizes findings for the three main technology areas that were analyzed: plug-in battery electric, dynamic electric charging (catenary or in-road), and hydrogen fuel cell vehicles. Each technology offers the prospect of lower climate emissions, no tailpipe pollutant emissions, lower fueling cost, greater renewable energy use, and higher on-vehicle energy efficiency.

**Table 10.** Summary of promising segments, benefits, and barriers for zero-emission heavy-duty freight vehicle technologies

| Technology | Benefits | Prevailing barriers to widespread viability | Promising segments for widespread commercialization |
|---|---|---|---|
| **Electric (plug-in)** | • Reduce greenhouse gas emissions<br>• Eliminate local air pollution<br>• Reduce fueling costs<br>• Reduce maintenance costs<br>• Increase energy efficiency<br>• Increase renewable energy use | • Limited electric range<br>• Vehicle cost (battery)<br>• Charging time (unless battery swapping is utilized)<br>• Cargo weight and size | • Light commercial urban delivery vans<br>• Medium-duty regional delivery trucks<br>• Refuse trucks |
| **Electric (catenary or in-road charging)** | • Reduce greenhouse gas emissions<br>• Eliminate local air pollution<br>• Reduce fueling costs<br>• Reduce maintenance costs<br>• Increase energy efficiency<br>• Increase renewable energy use<br>• Enable regional travel | • Infrastructure cost<br>• Standardization across regions<br>• Complete infrastructure network before vehicle deployment<br>• Visual obstruction (catenary) | • Medium-duty trucks and heavy-duty tractor-trailers on medium-distance routes with high freight use<br>• Drayage trucks around ports |
| **Hydrogen fuel cell** | • Reduce greenhouse gas emissions<br>• Eliminate local air pollution<br>• Increase energy efficiency<br>• Enable quick refueling time<br>• Increase renewable energy use | • Refueling infrastructure cost<br>• Renewable hydrogen cost<br>• Vehicle costs (fuel cell) | • Heavy-duty tractor-trailers in long-haul operation<br>• Drayage trucks around ports |

The zero-emission vehicle technologies do present considerable challenges. They have a combination of near- and long-term barriers, issues, and questions that will have to be addressed before they can become widespread replacements for conventional trucks

and tractor-trailers that are typically diesel fueled. These challenges are somewhat different for the three different zero-emission vehicle technologies. As a result, the three technologies have different truck segments for which they offer the most promise for widespread commercialization, based on our assessment in 2017. We emphasize the high uncertainty in how these technologies could evolve over the long-term for 2030 and beyond. With sustained government and private industry investment, each of these various electric-drive technologies has the potential to overcome the various barriers faster than the others. Considering the vast scale of the problem of decarbonizing freight transport, it appears likely that many of the battery and fuel cell technologies will need to grow in parallel to meet medium- and long-distance freight demands as soon as they prove themselves.

The key barriers for plug-in battery electric vehicles include meeting the various freight vehicle specifications for daily travel range, initial vehicle cost, charging time, and maintaining vehicle cargo weight and volume capacity. The applications of light commercial urban vans, medium-duty regional vans, and other local vocational trucks (e.g., refuse trucks) offer higher potential for battery electric vehicles because they are more likely to have local usage and fleet operations that downplay or minimize the near-term technology limitations. Battery-swapping technology, although now only used in a couple isolated applications, has the potential to largely eliminate the charging time issue; however, it was not analyzed here due to lack of available information. Vehicles in urban delivery operation that offer a shorter radius from their base location, lower daily distances, less volume and mass constraints for cargo, and recharge in just one or two locations are suited for plug-in electric trucks. Many such vehicles are in local city government operations, short-distance urban cargo delivery, electric power utility service vehicles, and other applications in every major city. Several major automakers are adapting their electric car technology for light-commercial vans. The Deutsche Post StreetScooter is a recent example of the commercialization of electric truck technology for urban settings. Tesla's announced battery electric semi-tractor prototype is the only battery electric project we found in our assessment targeting long-haul heavy-duty applications without dynamic charging.

Electric vehicles that are dynamically charged—via overhead catenary transmission, on-road conductive tracks, or in-road inductive wireless charging—could play an important role in unlocking more potential advantages and market options for electric trucks. Dynamically charged trucks on dedicated e-roads could be implemented on a regional basis in a way that greatly reduces the battery electric truck barriers of battery cost, weight, size, and range. However, the dynamic electric truck charging systems have high infrastructure costs, for which only very early cost estimates are available. They also present an issue of needing some standardization of truck technology and infrastructure systems across regions (e.g., multiple countries in Europe) to be able to span long distance routes. Based on these technologies' relative advantages and barriers, promising applications include medium-duty trucks and heavy-duty tractor-trailers on short- and medium-distance routes with high freight use. This approach would require major infrastructure investments and could be rolled out initially on high-freight-traffic corridors, for examples for drayage trucks around shipping ports with key distribution to cities within several hundred miles. Examples of this technology already exist. Trolleybuses powered by overhead catenary wires are deployed in hundreds of cities worldwide, and prominent research projects in Germany and Sweden are demonstrating the technology for freight applications.

Hydrogen fuel cell heavy-duty vehicles could play a key role for low-carbon freight transport in several applications. As noted by the limitations above, an especially important opportunity for fuel cells is in applications for which plug-in and dynamic charging is difficult practically or from a cost perspective. Hydrogen fuel cell technology offers much faster refueling times compared with electric charging times, and this is of great importance to many truck fleets that cannot accommodate additional downtime within their freight activity patterns. The technology also offers the potential for much greater range from hydrogen than battery electric trucks with similar specifications. Especially strong potential is in urban fleets, where governments have prioritized hydrogen infrastructure deployment, and for long-haul tractor-trailer fleets with routes around and between those cities. A key challenge for fuel cells is in their fuel supply, specifically moving toward renewable hydrogen fuel supply, which is simultaneously lower carbon and lower cost. Perhaps the most prominent such projects in 2017 are the in-development Nikola and Toyota fuel cell hydrogen tractor-trailer demonstrations.

Based on the research analytical results and qualitative assessment of projects around the world, we close with several summary conclusions regarding emerging zero-emission technologies for heavy-duty vehicles.

First, we find that electric-drive technologies for heavy-duty vehicles will be essential to decarbonize the transport sector. Heavy-duty freight trucks are disproportionate contributors to pollution, with less than one tenth of all vehicles but roughly 40% of their carbon emissions, and their activity keeps growing. Electric-drive technologies, similar to those being commercialized in passenger cars, will be essential to decarbonize the heavy-duty sector and help meet climate stabilization goals. While the more efficient diesel technologies can reduce carbon emissions by about 40%, electric-drive technologies powered by renewable sources can achieve over an 80% reduction in lifecycle emissions. These technologies can be phased into the fleet through 2050. However, our analysis indicates that these technologies will be insufficient to achieve decarbonization of heavy-duty vehicles by 2050. This is largely a result of how long it takes the fleet to turn over as high-emission trucks are slowly retired over time. Decarbonization will also likely require broader freight sector strategies, including modal shift, logistics improvements, and demand management approaches.

Second, even though these electric-drive heavy-duty truck technologies are in their relative infancy in 2017, by 2030 these technologies are likely to offer cost-effective opportunities for deep emission reductions. Major projects involving heavy-duty electric and hydrogen fuel cell technologies show great potential as a result of their much greater efficiency and available low-carbon fuel sources. Compared with diesel heavy-duty vehicles in the approximate 2030 timeframe, when infrastructure costs are excluded, we find that overhead catenary results in 25%–30% lower costs, in-road induction results in 15%–25% lower costs, and hydrogen fuel cells result in 5%–30% lower costs to own, operate, and fuel. Key drivers for cost-effectiveness are battery pack costs dropping to below $150 per kilowatt-hour and hydrogen fuel costs dropping to below the per-energy-unit cost of diesel (i.e., below $4 per kilogram), as well as the deployment of supporting infrastructure. Beyond these cost-effectiveness considerations, any low-emission technology will have to prove that it meets the same utility, reliability, and safety demands as conventional combustion technologies.

Third, we find that different electric-drive technologies are suitable for different heavy-duty vehicle segments, but simultaneous massive infrastructure investments will be

needed for each of them. Advances in battery packs and other electrical components will enable shorter distance urban commercial vans to become plug-in electric, similar to passenger cars. By eliminating battery weight and volume constraints, overhead catenary or dynamic inductive grid technologies can enable electric zero-emission goods transport on and around heavily traveled freight corridors. Hydrogen fuel cell technology might be especially key for longer distance duty cycles. Both of these technologies will require sustained investments by government and industry. Electric highways will require extensive charging (at central stations, with overhead transmission, or inductive road charging). Investments in low-carbon and low-cost hydrogen pathways and refueling infrastructure will have to be made in parallel with vehicle technology advances.

Beyond this report's scope, there is the larger question about how to strategically develop a balanced freight system that includes the right mix of many technologies, including battery electric and fuel cells, in a system that develops over time. Eventually, in the 2020–2030 timeframe, governments and industry leaders will have to make more discrete decisions about infrastructure to serve various technologies of particular vehicle types (medium- and heavy-duty) and freight applications (medium- and long-distance). As technology solutions emerge, questions about how best to sequence the rollout of infrastructure in advance of vehicle deployment, and avoid technology lock-in or stranded assets, will become more important. For the next 5 years, there is minimal such risk, because the technologies analyzed here are all in research, exploratory, and early demonstration phases. Analyzing the expanding and evolving infrastructure systems from a longer term strategic perspective remains a rich area for future research. Studies like this and others (see IEA [2017] and Transport & Environment [2016]) will continue to help inform strategic policy development as technologies evolve.

Based on these conclusions, the challenge for decarbonizing freight transport is becoming clear. To stabilize global temperatures, many developed countries have set the goal of reducing greenhouse gas emissions 80% from 1990 levels by 2050. Efficiency improvements will be of great importance but transitioning to zero-emission vehicles and fuels will be required to achieve greenhouse gas emission reduction targets. To achieve such a transition, a large variety of policy actions will be needed to increase heavy-duty sector efficiency and advance the low-carbon fuel options. Government policies, incentives, and investments will be needed to help offset the increased technology costs until the costs are competitive with conventional vehicle technologies, as well as to set clear expectations for industry investments.

For the near term, the continued and strengthened promotion for drayage, bus, and urban delivery truck applications are important to identify the most appealing business cases for electric-drive trucks. The lessons learned from the uptake of zero emission vehicles in these heavy-duty applications and the resulting reduction in overall technology costs will help to ease the transition in the more demanding long-haul applications. While we are learning from these early projects, government-backed investments in infrastructure give fleets and manufacturers the confidence to more heavily invest in the development, production, and deployment of zero-emission heavy-duty vehicle technologies. The case of California's continued support for zero-emission buses is instructive. The state and local bus agencies continued to feed both hydrogen and electric buses with sustained infrastructure and incentives over the past decade, and now electric buses are demonstrating success and the potential become self-sustaining.

Governments have been acting in key ways to help spur this progress. Simultaneously exploring the bigger, bolder, and infrastructure-intensive options like hydrogen fuel cells and dynamic electric charging in major freight regions is necessary to better understand the costs, benefits, and viability of these technology options for widespread applications. Using available resources, for example from the Volkswagen settlement mitigation funding, for such infrastructure or demonstration projects would certainly be warranted. Key roles for governments are in setting a clear vision, making initial investments in the key technologies, and encouraging further industry development of the ultimate solutions (e.g., Brown, 2016). Because of the complexity of the freight sector, it seems highly likely that a mix of many technologies, likely including plug-in, charging systems, and fuel cells, will ultimately be needed for long-term decarbonization.

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# ANNEX

**Table A1.** Commercial medium-duty zero emission vehicles in development or production.

| Company | Name | Technology | Current Status | Technology Specifications | | | | | | | | | Source |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Range (km) | Battery Chemistry | Max Speed (km/hr) | Recharge Time/ Refuel Time | Torque (Nm) | Power output (kW) | Battery kWh (or Hydrogen Storage kg) | Vehicle Gross Weight (ton) | Load Capacity (ton) | |
| **BYD** | T5 | Electric Class 5 truck | Production | 250 | FePO4 | 97 | 1.5 h | 550 | 150 | 145 | 7.3 | 3.8 | BYD (2016b) |
| **BYD** | T7 | Electric Class 6 truck | Production | 200 | FePO4 | 90 | 1.75 h | 550 | 150 | 175 | 11 | 5.9 | BYD (2016c) |
| **Daimler** | eCanter | All-electric light-duty truck | Small-scale production | >100 | Li-Ion | | 7 h (1 h = 80%) | 380 | 185 | 70 | 7.5 | 4.6 | Daimler (2016c) |
| **Daimler Trucks** | Canter E-CELL | All-electric light-duty truck | Replaced by the eCanter | >100 | Li-Ion | 90 | 7 h (1 h) | 650 | 110 | 48.5 | 6 | 3 | FUSO (2014) |
| **Deutsche Post DHL Group** | StreetScooter Work | Battery electric delivery truck | Production | 50–80 | Li-ion | 120 | | | 48 | 20.4 | 2.1 | | Deutsche Post DHL Group (2016) |
| **EFA-S** | P80-E | Electric medium-duty delivery truck | Production | 80–130 | LI-FeYPO4 | 80 | 8–10 h | 300 | 91 | 62 | 7.5 | 3.5 | EFA-S (2010) |
| **EMOSS** | DYNA EV200 | Battery electric | Production | 160 | LI-FeYPO4 | 85 | 8 h | 700 | 120 | 62 | 7.5 | 4.6 | EMOSS (2016) |
| **EVI** | EVI-MD | Battery electric medium-duty truck | Production | 145 | LiFeMgPO4 | 105 | 6–12 h | 900 | 200 | 99 | 7.3–10 | | GreenFleet (2016) |
| **Iveco** | Electric Daily 5t | Battery electric delivery truck | Production | 90–130 | ZEBRA (NaNi/Cl2) | 70 | | 300 | 80 | 63.6 | 5 | 2 | Deutsche Post DHL Group (2013) |
| **Motiv Power Systems & Rockport** | | Electric delivery truck | Production | 109–161 | | 97 | 8 h (2–3 h 50%) | 1,200 | 150 | 85/106/127 | 6.6 | 3.6 | Motiv (2016a) |
| **ORTEN & EFA-S** | ORTEN E 75 AT | Electric medium-duty truck | Production | 100 | LiFePO4 | 80 | 4 h (22 kW) | 1,150 | 90 | 72.5 | 7.5 | 3.6 | ORTEN (2016) |
| **Paneltex** | | Electric delivery truck | Production | 200 | LiFePO4 | | | | | 80–120 | 7.5–11 | | Paneltex (2017) |
| **Renault** | Maxity | Electric with hydrogen-powered fuel cell | Field test 2015 | 200 | | 90 | | 270 | 47/ 20 | 42/ 45 | 3.5 | 1 | Renault Trucks (2015) |
| **Smith** | Edison | Battery electric (chassis cab) | Production (except U.S.) | 90–160 | Li-ion | 80 | 6–8 h (4 h fast) | | 90 | 40 | 3.5–4.6 | 1.2–2.1 | Smith (2011a) |
| **Smith** | Newton | Battery electric (chassis cab) | Production | 65–160 | Li-ion | 80 | 8 h | 600 | 120 | 40–120 | 6.4–12 | 2.8-7.6 | Smith, (2011b, 2011c) |
| **Spijkstaal** | Ecotruck 7500 | Electric garbage truck | | 70–100 | Li-ion | 40 | 6–8 h | | 20 | | 7.5 | 3.7 | Spijkstaal (2016) |
| **US Hybrid** | eCargo | Battery electric cargo truck | Production | 120 | Li-ion (18650) | 104 | | | 120 | 36 | 4.5 | | US Hybrid (2016a) |
| **US Hybrid** | H2 Cargo | Fuel cell plug-in cargo truck | Production | 200 | Li-ion | 97 | <5 min | | 120 | 28 (9.8 kg) | 6.4 | | US Hybrid (2016c) |
| **Workhorse** | E-Gen | Electric delivery with range extender | | 96 (145) | | 108 | | 2,200 | 200 | 60 | 8.8 | | Workhorse (2016) |

**Table A2.** Commercial heavy-duty zero emission vehicles in development or production.

| Company | Name | Technology | Current Status | Technology Specifications | | | | | | | | | Source |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Range (km) | Battery Chemistry | Max Speed (km/hr) | Recharge Time / Refuel Time | Torque (Nm) | Power output (kW) | Battery kWh (or Hydrogen Storage kg) | Vehicle Gross Weight (ton) | Load Capacity (ton) | |
| **Artisan** | | Battery electric Class 8 drayage | | 129–161 | | | | | | 250 | | | Artisan (2016) |
| **BYD** | Q1M | Electric terminal tractor (yard truck) | Production | 15 | FePO4 | 53 | 1–2 h | 1,500 | 180 | 209 | 46 | 9 | BYD (2016a) |
| **BYD** | T9 | Electric Class 8 truck | Production | 148 | FePO4 | 90 | 2.5 h | 2,999 | 359 | 188 | 54 | 11 | BYD (2016d) |
| **Charge** | | Electric truck | 2017 | 160 | | | | | | | 3.5-26 | | Charge (2016) |
| **Daimler** | Urban eTruck | Fully electric heavy-duty truck | Production 2020 | 200 | Li-Ion | | | 2 × 500 | 2 × 125 | 212 | 26 | | Daimler (2016a,2016b) |
| **Dennis Eagle, PVI, Phoenix** | | Electric refuse truck | Production | >150 | Li-ion | 90 | 6–8 h | | | 170/255 | 26.8 | 9.7 | Norsk elbilforening (2017) |
| **E-Force** | | Electric Class 8 truck | Production | 300 (city) 200 (highway) | LiFePO4 | 87 | 6 h (44 kW) | 630 | 300 | 240 | 18 | 10 | E-Force (2015) |
| **EMOSS** | CM 1212 | Battery electric truck | Production | 150 | LiFePO4 | | 2.8/5,5 h | 950 | 150 | 120 | 12 | 6.6 | EMOSS (2016) |
| **EMOSS** | CM 1216 | Battery electric truck | Production | 200 | LiFePO4 | | 3.6/7.3 h | 950 | 150 | 160 | 12 | 6 | EMOSS (2016) |
| **EMOSS** | CM 1220 | Battery electric truck | Production | 250 | LiFePO4 | | 4.5/9 h | 950 | 150 | 200 | 12 | 5.4 | EMOSS (2016) |
| **ESORO** | | Class 8 fuel cell truck | Production | 375–400 | LiFePO4 | | 10 mins | | 250 | 120 (35 kg) | 34 t | | ESORO (2017) |
| **Ginaf** | E 2114 | Electric delivery truck | Production | 105 | LiFePO4 | | | 1,400 (3,400) | 155 (280) | 120 | 13.5 t | 7.7 | Ginaf (2017) |
| **Ginaf** | E 2115 | Electric delivery truck | Production | 135 | LiFePO5 | | | 1,400 (3,400) | 155 (280) | 156 | 13.5 | 7.7 | Ginaf (2017) |
| **Ginaf** | E 2116 | Electric delivery truck | Production | 150 | LiFePO6 | | | 1,400 (3,400) | 155 (280) | 180 | 13.5 | 7.7 | Ginaf (2017) |
| **Motiv Power. Cumberland** | | Electric Class 8 refuse truck | | 80–130 | | 80 | 8 h (2.5 50%) | 3,000 | 280 | 170/212 | 30 | 20 | Motiv (2016b) |
| **Nikola Motor Company** | NikolaOne | Hydrogen fuel cell electric semi-truck | Production 2020 | 1290–1930 | Li-Ion | | – | 2,700 | 746 | 320 | 37-39 | 29 | Nikola (2016) |
| **Renault** | Midlum Truck | All-electric refrigerated truck | | 100 | Li-Ion | | 8 h | | 103 | 150 | 16 | 5.5 | Renault Trucks (2011) |
| **Renault** | Trucks D | All-electric truck | | 120 | Li-Ion | | 7 h | | 103 | 170 | 16.3 | 6 | Kane (2014) |
| **Symbio FCell** | Electric Dennis Eagle | Plug-in electric hydrogen waste truck | | 150 | Li-Ion | 80 | | | 40 | 85 | 26 | 17 | Symbio FCell (2016) |
| **Toyota** | | Class 8 fuel cell drayage truck | Demonstration 2017 | >320 | | | | 1800 | 500 | 12 | 36 | | Toyota (2017) |
| **TransPower** | Elec Truck | Electric drayage truck | | 110–160 | Li-Ion (LFP) | | | | 300 | 215-270 | 36 | 26 | TransPower (2015) |
| **US Hybrid** | H2 Truck | Fuel cell electric drayage truck | Development | 320 | Li-ion | 97 | <9 min | | 320 | 30 (25 kg) | 36 | | US Hybrid (2016d) |
| **US Hybrid** | ETruck | Battery electric Class 8 truck | Development | 161 (@27t) | Li-ion | 97 | | | 320 | 240 | 36 | | US Hybrid (2016b) |

**Table A3.** Long-haul heavy-duty freight truck vehicle component cost breakdown for the different vehicle technologies. The values used are the best estimates from a variety of literature sources.

| Vehicle component costs | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|
| U.S. base diesel tractor cost ($) | 135,000 | 135,000 | 135,000 | 135,000 |
| EU base diesel tractor cost ($) | 135,000 | 135,000 | 135,000 | 135,000 |
| China base diesel tractor cost ($) | 60,000 | 60,000 | 60,000 | 60,000 |
| U.S. baseline trailer costs ($) | 25,000 | 25,000 | 25,000 | 25,000 |
| EU baseline trailer costs ($) | 25,000 | 25,000 | 25,000 | 25,000 |
| China baseline trailer costs ($) | 10,000 | 10,000 | 10,000 | 10,000 |
| Number of trailers | 3 | 3 | 3 | 3 |
| U.S. base truck, "Glider" costs ($) | 78,300 | 78,300 | 78,300 | 78,300 |
| EU base truck, "Glider" costs ($) | 78,300 | 78,300 | 78,300 | 78,300 |
| China base truck, "Glider" costs ($) | 37,400 | 37,400 | 37,400 | 37,400 |
| U.S. other efficiency improvements ($) | 2,790 | 9,580 | 7,140 | 26,500 |
| EU other efficiency improvements ($) | - | - | 2,240 | 8,260 |
| China other efficiency improvements ($) | - | 1,110 | 3,170 | 7,440 |
| **Diesel** | | | | |
| Engine power (kW) | 350 | 350 | 350 | 350 |
| Fuel tank ($) | 2,120 | 2,120 | 2,120 | 2,120 |
| Battery ($) | 531 | 531 | 531 | 531 |
| Aftertreatment ($) | 6,940 | 6,940 | 6,940 | 6,940 |
| U.S. engine efficiency improvements ($) | 2,980 | 6,280 | 11,900 | 18,800 |
| EU engine efficiency improvements ($) | - | - | 1,800 | 5,530 |
| China engine efficiency improvements ($) | - | 883 | 4,270 | 5,330 |
| U.S. total diesel/ICE vehicle cost ($) | 210,000 | 220,000 | 223,000 | 250,000 |
| EU total diesel/ICE vehicle cost ($) | 204,000 | 204,000 | 208,000 | 218,000 |
| China total diesel/ICE vehicle cost ($) | 90,000 | 91,500 | 95,100 | 99,800 |
| **Hybrid Battery Electric** | | | | |
| U.S. additional costs for hybrids ($) | 24,700 | 21,800 | 18,600 | 18,100 |
| EU additional costs for hybrids ($) | 24,700 | 21,800 | 18,600 | 18,100 |
| China additional costs for hybrids ($) | 11,000 | 9,680 | 8,270 | 8,050 |
| U.S. total hybrid electric vehicle cost ($) | 235,000 | 242,000 | 242,000 | 268,000 |
| EU total hybrid electric vehicle cost ($) | 229,000 | 226,000 | 227,000 | 236,000 |
| China total hybrid electric vehicle cost ($) | 101,000 | 101,000 | 103,000 | 108,000 |
| **Natural Gas** | | | | |
| LNG SI tank ($/DGE) | 246 | 226 | 207 | 187 |
| LNG SI tank capacity (DGE) | 173 | 156 | 140 | 123 |
| LNG SI tank cost ($) | 42,500 | 35,300 | 28,800 | 23,000 |
| LNG CI tank ($/DGE) | 295 | 272 | 248 | 225 |
| LNG CI tank capacity (DGE) | 150 | 136 | 121 | 107 |
| LNG CI tank cost ($) | 44,300 | 36,900 | 30,200 | 24,100 |
| CNG SI tank ($/DGE) | 345 | 317 | 290 | 262 |
| CNG SI tank capacity (DGE) | 173 | 156 | 140 | 123 |
| CNG SI tank cost ($) | 59,500 | 49,500 | 40,400 | 32,200 |
| Battery cost ($) | 531 | 531 | 531 | 531 |
| CI engine ($) | 68,900 | 68,900 | 68,900 | 68,900 |
| SI engine ($) | 42,900 | 42,900 | 42,900 | 42,900 |
| U.S. total LNG SI vehicle cost ($) | 242,000 | 242,000 | 233,000 | 246,000 |
| EU total LNG SI vehicle cost ($) | 239,000 | 232,000 | 228,000 | 228,000 |
| China total LNG SI vehicle cost ($) | 153,000 | 147,000 | 143,000 | 141,000 |

| Vehicle component costs | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|
| U.S. total LNG CI vehicle cost ($) | 270,000 | 269,000 | 260,000 | 273,000 |
| EU total LNG CI vehicle cost ($) | 267,000 | 260,000 | 255,000 | 255,000 |
| China total LNG CI vehicle cost ($) | 118,000 | 116,000 | 115,000 | 117,000 |
| U.S. total CNG SI vehicle cost ($) | 259,000 | 256,000 | 244,000 | 255,000 |
| EU total CNG SI vehicle cost ($) | 256,000 | 246,000 | 239,000 | 237,000 |
| China total CNG SI vehicle cost ($) | 113,000 | 110,000 | 108,000 | 109,000 |
| **Dynamic Induction Grid** | | | | |
| Battery (kWh) | 165 | 155 | 143 | 133 |
| Battery cost ($) | 53,800 | 35,300 | 24,000 | 15,900 |
| Additional required BEV systems ($) | 19,300 | 18,100 | 16,000 | 14,300 |
| Electric motor (kW) | 350 | 350 | 350 | 350 |
| Electric motor ($) | 7,960 | 6,370 | 5,720 | 5,080 |
| Dynamic induction grid connection ($) | 16,700 | 11,800 | 11,500 | 10,800 |
| U.S. total dynamic induction vehicle cost ($) | 254,000 | 234,000 | 218,000 | 226,000 |
| EU total dynamic induction vehicle cost ($) | 251,000 | 225,000 | 213,000 | 208,000 |
| China total dynamic induction vehicle cost ($) | 165,000 | 140,000 | 128,000 | 121,000 |
| **Overhead Catenary** | | | | |
| Battery (kWh) | 165 | 155 | 143 | 133 |
| Battery cost ($) | 53,800 | 35,300 | 24,000 | 15,900 |
| Additional required BEV systems ($) | 19,300 | 18,100 | 16,000 | 14,300 |
| Electric motor (kW) | 350 | 350 | 350 | 350 |
| Electric motor ($) | 7,960 | 6,370 | 5,720 | 5,080 |
| Overhead catenary grid connection ($) | 71,700 | 49,600 | 21,200 | 21,200 |
| U.S. total overhead catenary vehicle cost ($) | 309,000 | 272,000 | 227,000 | 236,000 |
| EU total overhead catenary vehicle cost ($) | 306,000 | 263,000 | 222,000 | 218,000 |
| China total overhead catenary vehicle cost ($) | 220,000 | 178,000 | 138,000 | 131,000 |
| **Fuel Cell** | | | | |
| Power (kW) | 350 | 350 | 350 | 350 |
| Fuel cell system ($) | 84,000 | 58,300 | 31,000 | 20,500 |
| Compressed gaseous H2 tank ($/kWh) | 33 | 23 | 21 | 19 |
| Compressed gaseous H2 tank capacity (kWh) | 2,790 | 2,570 | 2,570 | 2,480 |
| Compressed gaseous H2 tank price ($) | 92,000 | 59,100 | 54,000 | 47,200 |
| Electric motor (kW) | 400 | 400 | 400 | 400 |
| Electric motor ($) | 9,080 | 7,270 | 6,530 | 5,800 |
| Battery capacity (kWh) | 12 | 12 | 12 | 12 |
| Battery cost ($) | 3,910 | 2,740 | 2,020 | 1,430 |
| Additional required FCHEV systems ($) | 13,300 | 11,900 | 10,800 | 9,670 |
| U.S. total fuel cell cost—gaseous hydrogen ($) | 345,000 | 290,000 | 254,000 | 255,000 |
| EU total fuel cell cost—gaseous hydrogen ($) | 342,000 | 281,000 | 249,000 | 236,000 |
| China total fuel cell cost—gaseous hydrogen ($) | 256,000 | 196,000 | 164,000 | 150,000 |

*Based on den Boer et al. (2013); Fulton & Miller (2015); Meszler et al. (2015); Posada et al. (2016); Sen et al. (2016)*

**Table A4.** Annual vehicle distance traveled (in kilometers) for U.S., EU-28, and China long-haul heavy-duty vehicles.

| Age | U.S.[a] | EU-28 | China |
|---|---|---|---|
| **1** | 130,832 | 126,332 | 153,175 |
| **2** | 119,001 | 114,908 | 139,324 |
| **3** | 108,164 | 104,444 | 126,636 |
| **4** | 97,441 | 94,090 | 114,082 |
| **5** | 87,476 | 84,467 | 102,415 |
| **6** | 78,930 | 76,215 | 92,409 |
| **7** | 70,940 | 68,500 | 83,055 |
| **8** | 63,474 | 61,291 | 74,314 |
| **9** | 56,865 | 54,909 | 66,576 |
| **10** | 50,887 | 49,137 | 59,577 |
| **10-Year Total** | 1,390,490 | 834,294 | 1,011,563 |

[a] *U.S. EPA & NHTSA, 2011*

**Table A5.** Energy consumption (MJ/km) of each vehicle technology for vehicles purchased in 2015, 2020, 2025, and 2030.

| | Region | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|
| **Diesel** | United States | 14 | 13 | 10 | 9.3 |
| | China | 16 | 13 | 12 | 10 |
| | EU-28 | 12 | 12 | 11 | 9 |
| **Diesel hybrid** | United States | 14 | 12 | 10 | 8.9 |
| | China | 15 | 13 | 11 | 10 |
| | EU-28 | 11 | 11 | 10 | 8.8 |
| **Liquefied natural gas (compression ignition)** | United States | 16 | 14 | 11 | 10 |
| | China | 17 | 15 | 13 | 11 |
| | EU-28 | 13 | 13 | 12 | 10 |
| **Liquefied natural gas (spark ignition)** | United States | 16 | 14 | 12 | 11 |
| | China | 18 | 15 | 14 | 12 |
| | EU-28 | 14 | 14 | 12 | 11 |
| **Compressed natural gas (spark ignition)** | United States | 16 | 14 | 12 | 11 |
| | China | 18 | 15 | 14 | 12 |
| | EU-28 | 14 | 14 | 12 | 11 |
| **Hydrogen fuel cell** | United States | 9.5 | 8.8 | 8.2 | 7.6 |
| | China | 9.5 | 8.8 | 8.2 | 7.6 |
| | EU-28 | 9.5 | 8.8 | 8.2 | 7.6 |
| **Electric overhead catenary** | United States | 5.7 | 5.3 | 4.9 | 4.5 |
| | China | 5.7 | 5.3 | 4.9 | 4.5 |
| | EU-28 | 5.7 | 5.3 | 4.9 | 4.5 |
| **Electric dynamic induction** | United States | 9.0 | 8.2 | 7.5 | 6.9 |
| | China | 9.0 | 8.2 | 7.5 | 6.9 |
| | EU-28 | 9.0 | 8.2 | 7.5 | 6.9 |

*Diesel conversion: 36.66 MJ/l*

**Table A6.** Fuel cost projections from 2015 to 2040

| Vehicle | Region | Fuel Prices | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
| **Diesel ($/gallon)** | United States | 2.14 | 3.42 | 4.27 | 4.83 | 5.15 | 5.47 |
| | China | 2.53 | 4.00 | 5.00 | 5.73 | 6.03 | 6.40 |
| | EU-28 | 3.72 | 5.94 | 7.43 | 8.40 | 8.95 | 9.51 |
| **CNG ($/MMBTU)** | United States | 15.08 | 17.12 | 16.28 | 15.71 | 15.18 | 14.94 |
| | China | 7.22 | 7.59 | 7.22 | 6.97 | 6.73 | 6.63 |
| | EU-28 | 13.92 | 14.65 | 13.94 | 13.44 | 12.99 | 12.79 |
| **LNG ($/MMBTU)** | United States | 17.62 | 18.54 | 17.64 | 17.01 | 16.44 | 16.19 |
| | China | 7.82 | 8.23 | 7.83 | 7.55 | 7.30 | 7.18 |
| | EU-28 | 15.06 | 15.87 | 15.10 | 14.57 | 14.08 | 13.86 |
| **Hydrogen from Natural Gas ($/dge)** | United States | 6.00 | 5.46 | 4.93 | 4.39 | 3.85 | 3.32 |
| | China | 6.00 | 5.46 | 4.93 | 4.39 | 3.85 | 3.32 |
| | EU-28 | 6.00 | 5.46 | 4.93 | 4.39 | 3.85 | 3.32 |
| **Hydrogen from Renewable Pathways ($/dge)** | United States | 11.00 | 9.66 | 8.31 | 6.97 | 5.63 | 4.28 |
| | China | 11.00 | 9.66 | 8.31 | 6.97 | 5.63 | 4.28 |
| | EU-28 | 11.00 | 9.66 | 8.31 | 6.97 | 5.63 | 4.28 |
| **Electricity ($/kWh)** | United States | 0.10 | 0.12 | 0.13 | 0.14 | 0.13 | 0.13 |
| | China | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 |
| | EU-28 | 0.14 | 0.19 | 0.21 | 0.22 | 0.22 | 0.21 |

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# Appendix C. South Coast AQMD Interim CEQA GHG Significance Threshold

# Appendices

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# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

## Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold

October 2008


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# P R E F A C E

**This Draft Guidance Document provides preliminary information on the development of staff's proposed greenhouse gas significance threshold proposal. Please note that this document has not undergone full review by SCAQMD management or counsel, so it is still considered to be a work in progress. SCAQMD staff continues to seek input on the draft proposal from members of the Greenhouse Gas Significance Threshold Stakeholder Working Group, the California Air Pollution Control Officers Association (CAPCOA), the staff of the California Air Resources Board, public agencies, and the public in general.**

# LIST OF ACRONYMS AND ABBREVIATIONS

# List of Acronyms and Abbreviations

| Acronym/ Abbreviation | Definition |
|---|---|
| AB 32 | Assembly Bill 32 Global Warming Solutions Act of 2006 |
| AER | Annual Emission Reporting |
| AG | Attorney General |
| ARB | Air Resources Board |
| BACT | Best Available Control Technology |
| BARCT | Best Available Retrofit Control Technology |
| BAU | Business as Usual |
| CAPCOA | California Air Pollution Control Officers Association |
| CARB | California Air Resource Board |
| CAT | Climate Action Team |
| CCAR | California Climate Action Registry |
| CEC | California Energy Commission |
| CEQA | California Environmental Quality Act |
| $CH_4$ | Methane |
| CO | Carbon Monoxide |
| $CO_2$ | Carbon Dioxide |
| CPUC | California Public Utilities Commission |
| EIR | Environmental Impact Report |
| EPA | U.S. Environmental Protection Agency |
| FY | Fiscal Year |
| GHG | Greenhouse Gas |
| GGRP | Greenhouse Gas Reduction Plan |
| GP | General Plan |
| GWP | Global Warming Potential |
| IGR | Intergovernmental Review |
| IPCC | International Panel on Climate Change |
| ITE | Institute of Transportation Engineers |
| km | Kilometer |
| LNG | Liquefied Natural Gas |
| MMBTU | Million British Thermal Units |
| MND | Mitigated Negative Declaration |
| MMT $CO_2e$ | Million Metric Tons Carbon Dioxide Equivalent |
| MW | Megawatts |
| $N_2O$ | Nitrous Oxide |
| ND | Negative Declaration |
| $NO_X$ | Oxides of Nitrogen |
| OPR | State Office of Planning and Research |
| PFC | Perfluorocarbon |

## List of Acronyms and Abbreviations (Concluded)

| Acronym/ Abbreviation | Definition |
|---|---|
| PM | Particulate Mater |
| ROG | Reactive Organic Gas |
| RPS | Renewable Portfolio Standards |
| S-3-05 | Executive Order S-3-05 |
| SB | Senate Bill |
| SCAQMD | South Coast Air Quality Management District |
| SIP | State Implementation Plan |
| SOx | Sulfur Oxides |
| TAC | Toxic Air Contaminants |
| URBEMIS | Urban Emissions Model |
| VMT | Vehicle Miles Traveled |

# CHAPTER 1

# INTRODUCTION AND EXECUTIVE SUMMARY

**Introduction**

**Purpose of This Guidance Document**

**California Environmental Quality Act and GHGs**

**Legal Authority**

**Contents of This Guidance Document**

# INTRODUCTION

The California Environmental Quality Act (CEQA) requires public agencies in California to analyze potential adverse impacts for proposed projects undertaken by a public agency, funded by a public agency, and requiring discretionary approval by a public agency. The fundamental purposes of CEQA are to inform governmental decision-makers and the public about the significant environmental effects of proposed activities, identify ways to avoid or significantly reduce environmental damage, use feasible alternatives or mitigation measures to avoid significant damage, and disclose to the public why a governmental agency approved a project if significant effects are involved (CEQA Guidelines §15002[a]). To disclose potential adverse impacts from a proposed project, pursuant to CEQA lead agencies typically prepare multidisciplinary environmental impact analysis and make decisions based on the analysis regarding the environmental effects of the proposed project (CEQA Guidelines §15002[a]).

In the past, air quality analyses tended to focus on potential adverse impacts from criteria pollutants and toxic air contaminants. Subsequent to the adoption of Assembly Bill (AB) 32 – The California Global Warming Solutions Act of 2006, lead agencies have increasingly faced legal challenges to their CEQA documents for failure to analyze greenhouse gases (GHGs) or making a determination of significance regarding GHG emission impacts.

Greenhouse gases are those gases that have the ability to trap heat in the atmosphere, a process that is analogous to the way a greenhouse traps heat. GHGs may be emitted as a result of human activities as well as through natural processes. As a result of human activities, such as electricity production, vehicle use, etc., GHGs have been accumulating in the earth's atmosphere at a faster rate than has occurred historically, i.e., prior to the Industrial Age starting approximately 150 years ago. Increasing GHG concentrations in the atmosphere are leading to global climate change.

The Intergovernmental Panel on Climate Change (IPCC) provided the first unequivocal evidence that global climate temperatures are increasing (2007a). Further, the primary driver of global climate change is increased emissions of GHGs due to human activities. According to the IPCC, there is very high confidence, based on more evidence from a wider range of species, that recent warming is strongly affecting terrestrial, marine, freshwater biological systems.

Carbon dioxide (CO2) is the most important anthropogenic GHG because it comprises the majority of total GHG emissions emitted per year and it is very long-lived in the atmosphere. Annual emissions of CO2 have increased approximately 80 percent between 1970 and 2004. In addition to CO2, other GHG pollutants emitted directly as a result of human activities include methane (CH4), nitrous oxide (N2O) and halocarbons (a group of gases containing fluorine, chlorine or bromine). Without changes in current climate change mitigation policies and related sustainable

development practices, GHG emissions and global climate temperatures will continue to increase.

To prevent or minimize further increases in global temperatures resulting from increases in GHG emissions due to human activities, it is necessary to stabilize the concentration of GHGs in the atmosphere. Stabilizing GHGs in the atmosphere can only occur through reducing GHG emissions. Without further reductions in GHGs, increased global temperatures will surpass humans' and ecosystems' ability to adapt to these changing conditions (IPCC, 2007b).

In response to the increasing body of evidence that GHGs will continue to affect global climate, Governor Schwarzenegger issued executive order (EO S-3-05), which established the following greenhouse gas emission reduction targets for California: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Subsequent to the Governor's issuance of EO S-3-05, the California State Legislature adopted Assembly Bill (AB) 32 – The California Global Warming Solutions Act of 2006. With the adoption of AB 32, the California State Legislature recognized the growing concern regarding changes to global climate resulting from increasing emissions of greenhouse gases (GHGs). AB 32 establishes a cap on statewide greenhouse gas emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emissions levels. Specifically, (AB 32) recognizes the serious threat to the "economic wellbeing, public health, natural resources, and the environment of California" that results from global warming. Consequently, AB 32 mandates a significant reduction in GHGs in order to contribute to efforts to stabilize atmospheric concentrations of GHGs. Under AB 32, greenhouse gases are defined as: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

In general, there is currently an absence of regulatory guidance with regard to analyzing GHG emission impacts in CEQA documents. Similarly, no public agency in California has formally adopted GHG significance thresholds. Recognizing the absence of guidance regarding analyzing and determining the significance of GHGs, the California Air Pollution Control Officers Association (CAPCOA) prepared a White Paper reviewing policy choices, analytical tools, and mitigation strategies for GHGs. In particular, the White Paper identifies a number of options for establishing GHG significance thresholds, but makes no formal recommendation of one approach over another.

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution impacts under CEQA. This may include recommendations regarding significance thresholds, analytical tools to estimate emissions and assess impacts, and mitigations for potentially significant impacts. Although districts will also address some of these issues on a project-specific basis as responsible agencies, they may provide general guidance to local governments on these issues.

Because of its expertise in establishing air quality analysis methodologies and comprehensive efforts to establish regional and localized significance thresholds for criteria pollutants, local public agencies are looking to South Coast Air Quality Management District (SCAQMD) for guidance in quantifying GHG impacts and recommending GHG significance thresholds to assist them with determining whether or not GHG impacts in their CEQA documents are significant. As a result, SCAQMD staff has received requests from a number of public agencies and other stakeholders to provide guidance on analyzing GHG impacts and establishing a GHG significance threshold. In response to these requests from the various stakeholders, SCAQMD established a stakeholder working group to receive input on establishing a GHG significance threshold. In the meantime, SCAQMD staff has joined many other stakeholders urging CARB to establish a statewide threshold for GHGs. In the absence of a statewide threshold, SCAQMD staff will recommend its approach to the Governing Board for consideration and it will also become the SCAQMD's input to the statewide process.

## PURPOSE OF THIS GUIDANCE DOCUMENT

The purpose of this Guidance Document, therefore, is to provide information on GHG legislation relative to CEQA, a brief summary of the Working Group process, development of the resulting staff-recommended interim GHG significance threshold proposal, and how to use it. This Guidance Document also provides information on the SCAQMD's authority to establish a GHG significance threshold pursuant to CEQA and some background information on GHGs and global climate change. This Guidance Document also discusses future efforts to further refine the interim GHG significance threshold as necessary, includes recommendations for analyzing GHG impacts using current modeling tools, and describes measures to mitigate GHG emission impacts.

## CALIFORNIA ENVIRONMENTAL QUALITY ACT AND GHGS

### California Attorney General's Office

Subsequent to adopting AB 32, the California Attorney General's Office determined that GHG emissions contributing to global climate change also contribute to potential adverse environmental impacts that should be evaluated pursuant to the California Environmental Quality Act (CEQA). The Attorney General's Office has submitted numerous comment letters to lead agencies on their CEQA documents for failure to analyze GHG emissions, failure to make a significance determination, and failure to implement feasible mitigation measures to reduce GHG emissions to the maximum extent feasible.

For example, the California Attorney General, on behalf of the people of California, filed a legal challenge against the County of San Bernardino for failure to analyze "reasonably foreseeable" GHG emissions in the CEQA document prepared for its

General Plan update. The County reached a settlement with the Attorney General by committing to developing a GHG inventory and a plan for reducing GHGs.

Similarly, the California Attorney General submitted comments on the CEQA document for a refinery in northern California. Although GHG emissions were quantified, the Attorney General cited the failure of the lead agency to make a determination of significance relative to GHG emissions stating, "[E]ven if there is no established threshold in law or regulation, lead agencies are obligated by CEQA to determine significance. Neither CEQA, nor the regulations, authorize reliance on the lack of an agency-adopted standard as the basis for determining that a project's potential cumulative impact is not significant." In other words, the absence of a threshold does not in any way relieve lead agencies of their obligations to address GHG emissions from projects under CEQA. By not concluding whether or not a project is significant, the lead agency may be avoiding its responsibility to implement GHG mitigation measures.

### Senate Bill (SB) 97 – CEQA: Greenhouse Gas Emissions

In August 2007, Governor Schwarzenegger signed into law Senate Bill (SB) 97 – CEQA: Greenhouse Gas Emissions stating, "This bill advances a coordinated policy for reducing greenhouse gas emissions by directing the Office of Planning and Research (OPR) and the Resources Agency to develop CEQA guidelines on how state and local agencies should analyze, and when necessary, mitigate greenhouse gas emissions." Specifically, SB 97 requires OPR, by July 1, 2009, to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy consumption. The Resources Agency would be required to certify and adopt those guidelines by January 1, 2010. OPR would be required to periodically update the guidelines to incorporate new information or criteria established by the State Air Resources Board pursuant to the California Global Warming Solutions Act of 2006. SB 97 also identifies a limited number of types of projects that would be exempt under CEQA from analyzing GHG emissions. Finally, the legislation will be repealed on January 1, 2010.

### Office of Planning and Research Technical Advisory

Consistent with SB 97, on June 19, 2008, OPR released its *Technical Advisory on CEQA and Climate Change*, which was developed in cooperation with the Resources Agency, the California Environmental Protection Agency (Cal/EPA), and the California Air Resources Board (CARB). According to OPR, the *Technical Advisory* offers the informal interim guidance regarding the steps lead agencies should take to address climate change in their CEQA documents, until CEQA guidelines are developed pursuant to SB 97 on how state and local agencies should analyze, and when necessary, mitigate greenhouse gas emissions.

According to OPR, lead agencies should determine whether greenhouse gases may be generated by a proposed project, and if so, quantify or estimate the GHG emissions by

type and source. Second, the lead agency must assess whether those emissions are individually or cumulatively significant. When assessing whether a project's effects on climate change are "cumulatively considerable" even though its GHG contribution may be individually limited, the lead agency must consider the impact of the project when viewed in connection with the effects of past, current, and probable future projects. Finally, if the lead agency determines that the GHG emissions from the project as proposed are potentially significant, it must investigate and implement ways to avoid, reduce, or otherwise mitigate the impacts of those emissions.

**SB 375 (Steinberg) Transportation, Land Use, and the California Environmental Quality Act (CEQA)**

On September 30, 2008, Governor Schwarzenegger signed into law SB 375 (Steinberg). SB 375 focuses on housing and transportation planning decisions to reduce fossil fuel consumption and conserve farmlands and habitat. This legislation is important to achieving AB 32 goals because greenhouse gas emissions associated with land use, which includes transportation, are the single largest sector of emissions in California. Further, SB 375 provides a path for better planning by providing incentives to locate housing developments closer to where people work and go to school, allowing them to reduce vehicle miles traveled (VMT) every year. The following bullet points summarize some of the main provisions of the bill.

- Require the regional governing bodies in each of the state's major metropolitan areas to adopt, as part of their regional transportation plan, a "sustainable community strategy" that will meet the region's target for reducing GHG emissions. These strategies would get people out of their cars by promoting smart growth principles such as: development near public transit; projects that include a mix of residential and commercial use; and projects that include affordable housing to help reduce new housing developments in outlying areas with cheaper land and reduce vehicle miles traveled (VMT).

- Create incentives for implementing the sustainable community strategies by allocating federal transportation funds only to projects that are consistent with the emissions reductions.

- Provide various forms of CEQA relief by allowing projects that are shown to conform to the preferred sustainable community strategy through the local general plans (and therefore contribute to GHG reduction) to have a more streamlined environmental review process. Specifically, SB 375 will change CEQA in two ways:

  - If a development is consistent with the sustainable community's strategy and incorporates any mitigation measures required by a prior EIR, then the environmental review does not have to consider: a) growth-inducing impacts, or b) project-specific or cumulative impacts from cars on global warming or the regional transportation network.

- A narrowly-defined group of "transit priority projects" will be exempt from CEQA review.

# LEGAL AUTHORITY

CEQA Guidelines §15022(a) states that a public agency shall adopt objectives, criteria, and specific procedures consistent with CEQA and these [State] Guidelines for administering its responsibilities under CEQA. CEQA Guidelines §15022(d) states further, "In adopting procedures to implement CEQA, a public agency may adopt the State CEQA Guidelines through incorporation by reference. The agency may then adopt only those specific procedures or provisions described in subsection [15022] (a) which are necessary to tailor the general provisions of the guidelines to the specific operations of the agency." At the December 11, 1998 Public Hearing the SCAQMD's Governing Board formally incorporated by reference the State CEQA Guidelines as the implementing guidelines for the SCAQMD's CEQA program. Adopting GHG significance thresholds would be consistent with CEQA Guidelines §15022 provision to tailor a public agency's implementing guidelines by adopting criteria relative to the specific operations of the SCAQMD.

Specifically with regard to thresholds of significance, CEQA Guidelines §15064.7(a) states, "Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects." Subsection (b) of the same section states further, "Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule or regulation, and developed through a public review process and be supported by substantial evidence." Staff's recommended GHG significance threshold has undergone a public review process as part of stakeholder working group meetings that are open to the public. This Guidance Document provides the substantial evidence relative to the methodology for developing the interim GHG significance threshold. After completion of the public process, the proposed interim GHG significance threshold will be brought to the SCAQMD's Governing Board at a public meeting, where it will be considered for adoption by resolution, consistent with CEQA Guidelines §15064.7(b). Staff's proposed interim GHG significance threshold is a recommendation only for lead agencies and not a mandatory requirement. The GHG significance threshold may be used at the discretion of the local lead agency. However, if adopted the SCAQMD will use the interim GHG significance threshold for projects where it is the lead agency.

## Considerations When Establishing Significance Thresholds

No significance thresholds for GHG emissions have been developed, adopted, or endorsed statewide or at the local level[1]. Air districts have primary authority under

[1] In response to comments submitted by the Attorney General's Office on a dairy project, the San Joaquin Valley Air Pollution Control District (SJVAPCD) identified a significance threshold of 38,477 metric tons of

state law for "control of air pollution from all sources, other than emissions from motor vehicles" (H&SC §40000). The term air contaminant or "air pollutant" is defined extremely broadly, to mean "any discharge, release, or other propagation into the atmosphere" and includes, but is not limited to, soot, carbon, fumes, gases, particulate matter, etc. Greenhouse gases and other global warming pollutants such as black carbon would certainly be included in this definition. The U.S. Supreme Court held in Massachusetts v. EPA 549 U.S. 497 (2009) that greenhouse gases were clearly within the Federal Clean Air Act's broad definition of air pollutants. Therefore, air districts have the authority to regulate global warming pollutants primarily from non-vehicular sources, while pursuant to AB 32 CARB has authority over a wide range of sources, including vehicular sources.

Appendix G of the CEQA Guidelines provides a checklist of suggested environmental topics that should be addressed in a CEQA document. Questions under each environmental topic area are designed to elicit information on whether a project has the potential to generate significant adverse environmental impacts to that environmental topic area. However, neither the CEQA statutes nor the implementing Guidelines discuss or identify thresholds of significance or particular methodologies for performing an impact analysis. These tasks are left to a lead agency's judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable.

The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area (CEQA Guidelines §15064(b)). Further, in evaluating the significance of the environmental effect of a project, the Lead Agency shall consider direct physical changes in the environment which may be caused by the project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project (§15064(d)). Significance conclusions must be based on substantial evidence, which includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (CEQA Guidelines §15064(f)(5)).

Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is essentially a regulatory standard or set of criteria that represent the level at which a lead agency finds a particular environmental effect of a project to be significant. Specifically, a threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant

carbon dioxide equivalent per year (MT CO2eq./yr). According to SJVAPCD staff, the agency currently has no plans to formally adopt this significance threshold through a public process.

by the agency and compliance with which means the effect normally will be determined to be less than significant (§15064.7(a)).

Even in the absence of clearly defined significance thresholds for GHG emissions, the California Attorney General has advised that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact.

## CONTENTS OF THIS GUIDANCE DOCUMENT

The following subsections provide brief summaries of the chapters contained in this guidance document.

### Summaries of Chapter 1

Chapter 1 is the introductory chapter of this document that contains general background information on GHGs and the determination that GHGs must be analyzed in CEQA documents. There is also information on CEQA legislation related to GHGs and global climate change. Finally, the chapter contains information on the legal authority that allows the SCAQMD to adopt significance thresholds for the purpose of determining the severity of impacts analyzed in CEQA documents

### Summaries of Chapter 2

Chapter 2 contains more detailed background information on GHG emissions relative to global climate change, both internationally and nationally. This chapter also provides more detailed information on legislation to reduce GHG house gas emissions, e.g., Assembly Bill 32 – the Global Warming Solutions Act of 2006, etc. Finally, Chapter 2 contains information on early guidance on evaluating GHG emissions in CEQA documents.

### Summaries of Chapter 3

Chapter 3 contains information on the working group established by the SCAQMD to provide feedback to staff on the development of an interim GHG significance threshold. The chapter also includes discussions on considerations in establishing an interim GHG significance threshold and describes the current staff proposal for an interim GHG significance threshold.

### Summaries of Chapter 4

Chapter 4 contains general recommendations for analyzing GHG emissions in CEQA documents.

**Summaries of Chapter 5**

In Chapter 5 it is assumed that the SCAQMD Governing Board will adopt staff's proposed interim GHG significance threshold. Therefore, this chapter discusses future action items, including outreach to interested stakeholders, compiling lists of applicable GHG design features and mitigation measures, and periodic review and update, as necessary of the interim GHG significance threshold.

# CHAPTER 2

# BACKGROUND INFORMATION ON GHGS

**General Background Information**

**Legislative Background – California**

**Initial Guidance on Evaluating GHGs Pursuant to CEQA**

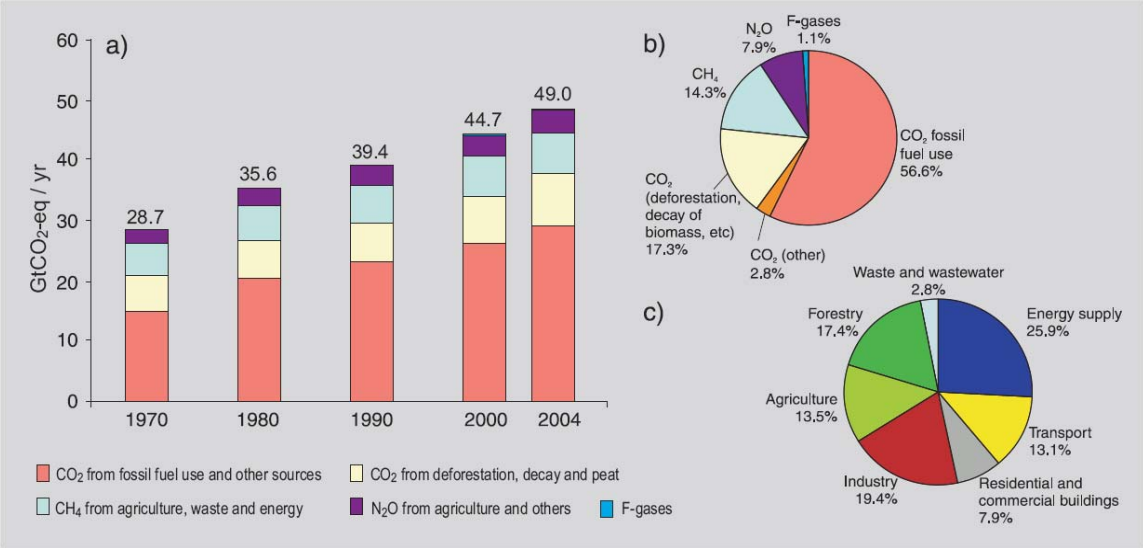
# GENERAL BACKGROUND INFORMATION ON GHGS

## Intergovernmental Panel on Climate Change

In the last few years information and data have been compiled that demonstrate unequivocally that increases in average global air and ocean temperatures are occurring (IPCC, 2007a). For example, 11 of the last 12 years (1995-2006) rank among the 12 warmest years in the instrumental record of global surface temperature (since 1850). The temperature increase is widespread over the globe and is greater at higher northern latitudes. Further, increases in sea level are consistent with global warming. For example, global average sea level rose at an average rate of 1.8 [1.3 to 2.3]mm per year over 1961 to 2003 and at an average rate of about 3.1 [2.4 to 3.8]mm per year from 1993 to 2003. According to the IPCC (2007b), there is very high confidence, based on more evidence from a wider range of species, that recent warming is strongly affecting terrestrial, marine, and freshwater biological systems.

One of the major drivers in global climate change has been directly linked to the increase in greenhouse gas (GHG) emissions due to human activities worldwide (Figure 2-1). Carbon dioxide (CO2) is the most important anthropogenic GHG. Annual CO2 emissions have increased approximately 80 percent between 1970 and 2004 (IPCC, 2007b)

**Figure 2-1**
Global Anthropogenic GHG Emissions




**Source – IPCC, 2007b:** (a) Global annual emissions of anthropogenic GHGs from 1970 to 2004.5 (b) Share of different anthropogenic GHGs in total emissions in 2004 in terms of CO2-eq. (c) Share of different sectors in total anthropogenic GHG emissions in 2004 in terms of CO2-eq. (Forestry includes deforestation.) {WGIII Figures TS.1a, TS.1b, TS.2b}

Human activities have been responsible for substantial increases in four long-lived GHGs, including: CO2, methane (CH4), nitrous oxide (N2O) and halocarbons (a group of gases

containing fluorine, chlorine or bromine). Global increases in CO2 concentrations are due primarily to fossil fuel use, with land-use change providing another significant but smaller contribution. It is very likely that the observed increase in CH4 concentration is predominantly due to agriculture and fossil fuel use. The increase in N2O concentration is primarily due to agriculture (IPCC, 2007).

According to the IPCC (2007), for the next couple of decades global temperatures are expected to rise approximately 0.2$^{o}$ C per decade under a variety of scenarios. Further, global temperatures are expected to continue for centuries as a result of human activities due to the time scales associated with climate processes and feedbacks, even if GHG concentrations are stabilized. As a result, based on the current understanding of climate-carbon feedback, model studies show that substantial GHG emission reductions are necessary to avoid substantial increases in global air and ocean temperatures.

## LEGISLATIVE BACKGROUND – CALIFORNIA

California has taken a leadership role in not only recognizing the future impacts to global climate change from anthropogenic sources of GHG emissions, but in establishing policies and adopting laws to substantially reduce GHG emissions by 2050. In addition to the GHG legislation related to CEQA described in Chapter 1, California has adopted the following policies and laws that specifically address reducing GHG emissions.

### Governor Schwarzenegger's Executive Order (June 2005)

In June 2005, Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05, which establishes greenhouse gas emission reduction targets in response to projected increases in global air and ocean temperatures. Specifically, EO S-3-05 establishes the following three GHG emission reduction targets:

- Reduce GHG emissions to 2000 emission levels by 2010;
- Reduce GHG emissions to 1990 emission levels by 2020; and
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

Further, EO S-3-05 charges the California Environmental Protection Agency (CalEPA) secretary to coordinate with the Secretary of the Business, Transportation and Housing Agency, Secretary of the Department of Food and Agriculture, Secretary of the Resources Agency, Chairperson of the CARB, Chairperson of the Energy Commission and President of the Public Utilities Commission to develop a Climate Action Plan. EO S-3-05 also charges the Secretary of CalEPA with the oversight of efforts to meet the above GHG emission reduction targets and the responsibility to prepare biannual reports on progress in meeting the GHG emission reduction targets.

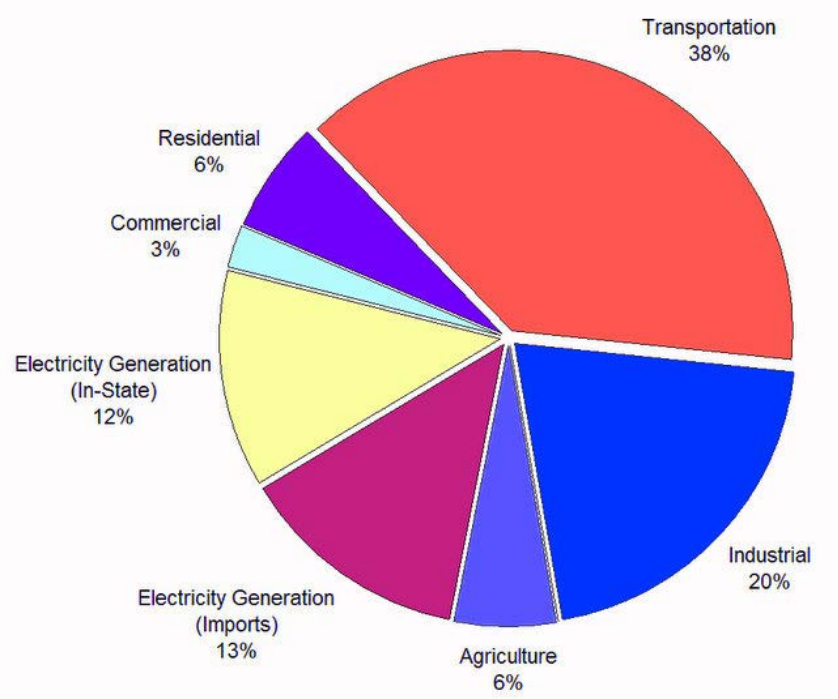
**Global Warming Solutions Act of 2006 (Assembly Bill (AB) 32)**

The Global Warming Solutions Act of 2006 (AB 32) was adopted by the California State Legislature in 2006. AB 32 assigns CARB the responsibilities of monitoring and reducing GHG emissions. Specifically, AB 32 requires CARB to:

- Establish a statewide greenhouse gas emissions cap for 2020, based on 1990 emissions, by January 1, 2008;
- Adopt mandatory reporting rules for significant sources of greenhouse gases by January 1, 2009;
- Adopt a plan by January 1, 2009, indicating how emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions;
- Adopt regulations by January 1, 2011, to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas, including provisions for using both market mechanisms and alternative compliance mechanisms;
- Convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to advise CARB;
- Ensure public notice and opportunity for comment for all CARB actions;
- To adopt rules for "sources" including non-vehicular; and
- Prior to imposing any mandates or authorizing market mechanisms, CARB must evaluate several factors, including but not limited to impacts on California's economy, the environment and public health; equity between regulated entities; electricity reliability; conformance with other environmental laws, and must ensure that the rules do not disproportionately impact low-income communities.

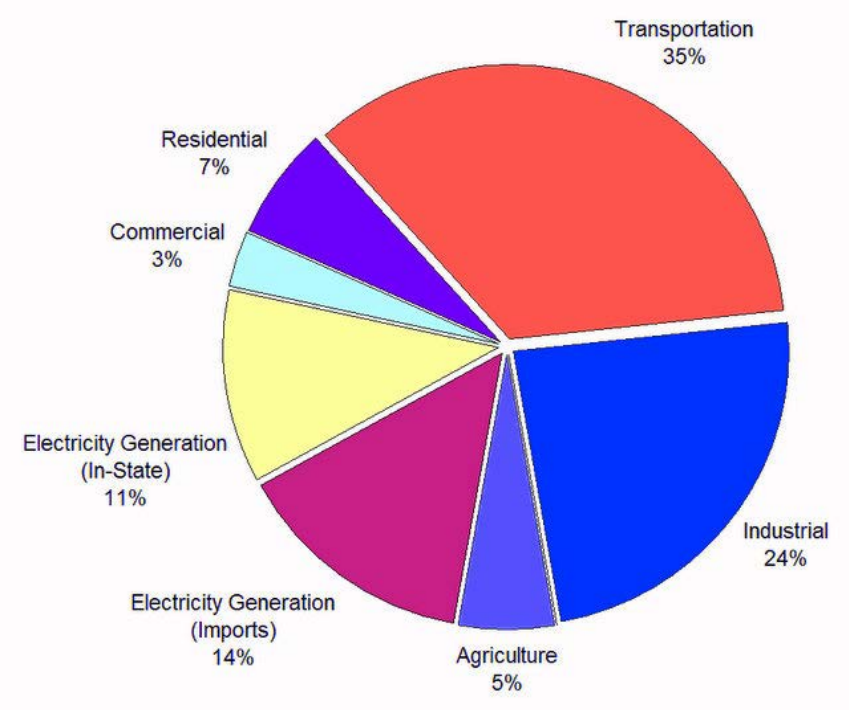
According to the schedule of milestones laid out in AB 32, CARB has made progress in the following areas. Consistent with AB 32's requirement to establish a GHG emission inventory, in December 2007 CARB adopted the California Greenhouse Gas Emission Inventory. The Inventory accounts for all GHG emissions within the state of California and supports the AB 32 Climate Change Program. Figure 2-2 shows CARB's inventory for the year 2004. The Inventory also serves as the basis for developing future year GHG emission forecasts necessary to support measure development and Scoping Plan recommendations. ARB staff has developed a year 2020 "business-as-usual" (BAU) forecast of GHG emissions for use in developing the Draft Scoping Plan. Figure 2-3 shows CARB's inventory for the year 2020, which is AB 32's target inventory.

**Figure 2-2**
2004 GHG Emissions by Sector (Gross Emissions: 484.4 MMT CO2eq.)




Source: CARB, 2007

**Figure 2-3**
1990 GHG Emissions by Sector (Gross Emissions: 433.3 MMT CO2eq.)




Source: CARB, 2007

On December 6, 2007, the Air Resources Board (ARB) approved a regulation for the mandatory reporting of greenhouse gas emissions from major sources, pursuant to AB 32. The mandatory reporting regulation specifies the types of facilities that must report their GHG emissions, requirements for reporting and estimating the GHG emissions, and requirements for emissions verification. Upon adoption, the CARB Board directed staff to make other conforming modifications, as may be appropriate, based on comments received. Subsequent to adoption, the mandatory reporting regulation has undergone two sets of modifications.

Consistent with the requirement to develop a scoping plan indicating how GHG emission reductions will be achieved through regulations, market mechanisms, and other actions, the Draft Scoping Plan was released for public review and comment on June 26, 2008, followed by workshops in July and August, 2008.

The Draft Scoping Plan calls for achievable GHG emission reduction in California's carbon footprint to 1990 levels. Reducing greenhouse gas emissions to 1990 levels means cutting approximately 30 percent from BAU emission levels projected for 2020, or about 10 percent from today's levels. Key elements of CARB's preliminary recommendation for reducing California's greenhouse gas emissions to 1990 levels by 2020 contained in the Draft Scoping Plan include the following:

- Expansion and strengthening of existing energy efficiency programs and building and appliance standards;
- Expansion of the Renewables Portfolio Standard for electricity generation to 33 percent;
- Development of a California cap-and-trade program that links with other WCI Partner programs to create a regional market system;
- Implementation of existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Targeted fees to fund the State's long-term commitment to AB 32 administration.

The Scoping Plan is expected go to the CARB Board for adoption in November, 2008.

## INITIAL GUIDANCE ON EVALUATING GHGS PURSUANT TO CEQA

As noted in Chapter 1, both the California Attorney General's Office and the OPR determined that GHG emissions contributing to global climate change have the potential to generate adverse environmental impacts that should be evaluated pursuant to CEQA. Until recently, however, there has been little or no guidance relative to analyzing GHG emissions in CEQA documents or determining significance. The first explicit guidance was provided by the Association of Environmental Professionals (AEP) in its White Paper on Global Climate Change (AEP, 2007) and the White Paper on CEQA and Climate Change prepared by the California Air Pollution Control Officers Association (CAPCOA, 2008). The content of each of these White Papers is summarized in the following subsections.

**Association of Environmental Professionals – White Paper on Global Climate Change**

AEP's White Paper (AEP) was one of the first attempts to discuss GHGs in the context of CEQA. The intent of the White Paper was to provide practical, interim information to CEQA practitioners and to help Lead Agencies determine how to address GHGs and global climate change in CEQA documents prior to the development and adoption of guidance by appropriate government agencies. Further, AEP's White Paper provided a summary of the current regulatory environment surrounding GHG emissions, and the various approaches that a Lead Agency may select in a CEQA document to address the potential impacts of global climate change and a project's cumulative contribution to GHG. The White Paper described several approaches for addressing GHGs and global Climate Change in CEQA documents, but did not recommend a single approach or methodology, leaving that decision to local Lead Agencies. The AEP White Paper identified eight approaches for analyzing GHGs and global climate change, which are summarized in the following bullet points.

- **Approach 1 – No Analysis:** under this approach the Lead Agency would not mention or discuss GHGs or global climate change.
- **Approach 2 – Screening Analysis:** under this approach the Lead Agency would establish a process to screen projects and determine that they would not make significant contributions to GHG emissions or GCC and, therefore, would not need to mitigate accordingly.
- **Approach 3 – Qualitative Analysis without Significance Determination:** this approach involves a qualitative discussion of GHGs and global climate change and potential ways the project will contribute to the generation of GHG emissions, but does not provide any significance conclusions.
- **Approach 4 – Qualitative Analysis with Significance Determination:** under this approach the Lead Agency would qualitatively discuss GHGs and climate change impacts and conclude that the project impacts are significant.
- **Approach 5 – Quantitative Analysis without Significance Determination:** under this approach the Lead Agency would quantify GHG emissions from the proposed project, but the results are not compared to a quantitative significance threshold.
- **Approach 6 – Quantitative Analysis with Net Zero Threshold:** this approach involves quantifying GHG emissions and using zero net carbon dioxide equivalent increase as the threshold.
- **Approach 7 – Quantitative Analysis Relative to California GHG Emission Reduction Strategies:** this approach employs both quantitative and qualitative components. The quantitative analysis contains an inventory of project GHG emissions. The qualitative component involves project compliance with the emission reduction strategies contained in the California Climate Action Team's (CAT) Report to the Governor, which contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met.
- **Approach 8 – Use of Partial Exemption, "Within the Scope" of a Program EIR, or Tiering:** this option relies on the preparation of a broad EIR on a plan, program, or zoning action that is certified and contains a cumulative GHG and global climate change

impact analysis and mitigation. A later project that is consistent with the actions, goals, and/or policies in that plan, program, or zoning action need not again evaluate the cumulative impact regarding the project's GHG contribution to global climate change. In this situation, the later project may use the "partial exemption" provision of Public Resources Code §21083.3 and CEQA Guidelines §15183.

Since the date that the AEP White Paper was finalized (June, 2007), it has become clear that any of the above eight options that do not include quantification of GHG emissions and a determination of significance would be vulnerable to legal challenge. In addition, with the exception of the net zero approach in option 6, none of the options evaluated identify potential GHG significance thresholds. Approaches to developing GHG significance thresholds were specifically addressed in CAPCOA's White Paper (CAPCOA, 2008).

**California Air Pollution Control Officers Association – White Paper: CEQA and Climate Change**

The intent of CAPCOA's White Paper is to serve as a resource for public agencies as they establish procedures for reviewing GHG emissions from projects under CEQA. It considers the application of thresholds and offers three alternative programmatic approaches toward determining whether GHG emissions are significant. Although the White Paper considers an option of not establishing a GHG significance threshold, as already noted this option is not considered to be a viable approach and will not be considered further. Ultimately, the White Paper is intended to provide consistent approaches for public agencies to ensure that GHG emissions are appropriately considered and addressed under CEQA.

The CAPCOA White Paper identifies three programmatic approaches to establishing GHG significance thresholds and also discusses the benefits and problems associated with each approach. Each approach has inherent advantages and disadvantages. The three basic approaches are:

- No significance threshold for GHG emissions (not discussed further);
- GHG emissions threshold set at zero; or
- GHG threshold set at a non-zero level, two approaches.

The following subsections briefly summarize two of the three major programmatic approaches developed by CAPCOA.

*Zero Threshold*

An air district or lead agency may determine that any degree of project-related increase in GHG emissions would contribute considerably to climate change which, therefore, would be considered a significant impact. As a result, the air district or lead agency could adopt a zero-emission GHG threshold. If the zero threshold option is chosen, the lead agency would be required to quantify and mitigate GHG emissions for all projects subject to CEQA, regardless of the size of the project or the availability of GHG reduction measures available to reduce the project's emissions. Projects that could not meet the zero-emission threshold would be required to undergo an environmental impact report (EIR) CEQA process to disclose the unmitigable significant impact, and develop the justification for a statement of overriding consideration to be adopted by the lead agency.

CAPCOA notes in the White Paper that if an air district or lead agency elects to adopt a zero threshold approach, it should consider the administrative costs and the environmental review system capacity. Some projects that previously would have qualified for an exemption could require further substantial analysis, including preparation of a Negative Declaration (ND), a Mitigated Negative Declaration (MND) or an EIR. Moreover, the trade-offs between the volume of projects requiring review and the quality of consideration given to reviews should be considered. It may also be useful to consider whether meaningful mitigation can be achieved from smaller projects.

*Approach 1: Non-Zero Threshold – Statute and Executive Order Approach*

According to CAPCOA, a non-zero GHG significance threshold could minimize the resources spent reviewing environmental analyses that do not result in real GHG reductions or to prevent the environmental review system from being overwhelmed. The practical advantages of considering non-zero thresholds for GHG significance determinations can fit into the concept regarding whether the project's GHG emissions represent a "considerable contribution to the cumulative impact" and therefore warrant analysis.

The first non-zero GHG significance threshold approach is based on achieving the objectives of AB 32 or executive order EO S-3-05 and explores four possible options under this scenario. A project would be required to meet the target objectives, or reduce GHG emissions to the target objectives, to be considered less than significant. The options under this approach are variations of ways to achieve the 2020 goals of AB 32 from new development, which is estimated to be about a 30 percent reduction from business-as-usual. Table 2-1 summarizes the four statute and executive order approaches identified by CAPCOA. SCAQMD staff has identified and included in Table 2-1 potential pros and cons identified for each option.

*Approach 2: Non-Zero Threshold – Tiered Threshold Options*

The second non-zero GHG significance threshold approach is comprised of a number of tiered GHG significance threshold options. Within this option, the CAPCOA White Paper discusses seven variations. The tiered threshold options offer both quantitative and qualitative approaches to setting a threshold, as well as different metrics for establishing the various tiers. Variations range from setting the first tier at zero to second tiers set at defined emission levels or based on the size of a project. This approach would then prescribe a set of GHG mitigation strategies that would have to be incorporated into the project in order for the project to be considered less than significant. CAPCOA notes that some applications of the tiered threshold approach may require inclusion in a General Plan or adoption of enabling regulations or ordinances to render them fully effective and enforceable. The various tiered threshold options are summarized in Table 2-2. SCAQMD staff has identified and included in Table 2-2 potential pros and cons identified for each option.

**Table 2 – 1**
Statute and Executive Order Approach

| Threshold Number | Description of Threshold | Pros* | Cons* |
|---|---|---|---|
| 1.1 | Project must reduce emissions compared to business as usual to be less than significant, two approaches:<br>a. Project must reduce GHG emissions 33 percent compared to business-as-usual (BAU) (2020 target), or<br>b. Project must reduce GHG emissions 80 percent compared to business-as-usual (2050 target). | • Could reduce resource impacts compared to zero threshold, as not every project would require an EIR<br>• Would achieve GHG reductions consistent with AB 32<br>• A single threshold is easier to apply and understand | • Could be viewed as setting a de minimis level<br>• Fewer projects would trigger significance, thus, less mitigation<br>• BAU should be defined by CARB<br>• BAU may be difficult to define for all projects |
| 1.2 | All new projects must reduce GHG emissions compared to BAU by a uniform percentage to be considered less than significant, e.g., 50 percent. | • Same as 1.1<br>• May produce greater percent reduction of GHGs<br>• Single threshold easier to apply & understand | • Could produce substantially greater GHG reductions than 1.1, but may be difficult to achieve<br>• BAU should be defined by CARB<br>• BAU may be difficult to define for all projects |

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

**Table 2 – 1 (Concluded)**
Statute and Executive Order Approach

| Threshold Number | Description of Threshold | Pros* | Cons* |
|---|---|---|---|
| 1.3 | Projects must reduce GHG emissions compared to business-as-usual by a uniform percentage based on economic sector to be less than significant, i.e., different reductions required for different market sectors. | • Sector-specific approach may be more appropriate approach<br>• Would take into account costs & available control technologies<br>• Avoids over- or under-regulation of GHGs per sector | • Requires extensive information on emission inventories<br>• Requires extensive information on control technologies<br>• Difficult to determine percent reduction by sector<br>• Because of information requirements, may be more viable in the long term |
| 1.4 | Uniform GHG emission reduction by region. Regional GHG reduction plan developed consistent with AB32 emission reductions, e.g., reduce GHG emissions 33% or 80% compared to BAU. A project is not significant if its GHG emissions are consistent with plan. | • Could tailor GHG reductions to specific regional needs<br>• GHG reduction strategies could be integrated into regional plans | • Would need to establish GHG regions<br>• Requires extensive information on regional emission inventories<br>• Because of the need to develop a regional plan, may be a more viable interim approach |

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

**Table 2 – 2**
Tiered Threshold Options

| Threshold Number | Description of Threshold | Pros* | Cons* |
|---|---|---|---|
| 2.1 | This threshold employs a decision tree approach. Tier 1, no increase in GHG emissions, not significant (zero threshold). If GHG emissions greater than zero, tier two, use one of the following threshold options. | • Tiered approach allows flexibility by establishing multiple thresholds to cover a wide range of projects<br>• Tier 2 may minimize administrative burden & costs<br>• Tiers could be set at different levels depending on GHGs, size & other project characteristics<br>• Projects exceeding tier 2 must implement mitigation | • Tier 1 may increase administrative burdens & costs<br>• There may not be meaningful mitigation for small projects<br>• Available mitigation may consist of purchasing offsets<br>• EJ concerns of purchasing offsets because of associated criteria pollutant emissions<br>• Offset markets not well established |
| 2.2 | Establish a quantitative threshold based on capturing a percentage, e.g., 90%, of future discretionary projects, CAPCOA's threshold is 900 metric tons CO2eq per year (equivalent to 50 houses or 30,000 square feet of commercial space, i.e., CAPCOA assumes 90% of all projects are this size or greater). Projects less than this would not be significant. | • Would capture a larger percentage of projects in the district than is currently the case<br>• Would exclude small projects from further GHG analysis<br>• Single threshold easier to apply & understand | • Would increase administrative & cost burden, especially in developing & moderate growth areas<br>• May not be amenable to industrial projects because of the diversity of these projects<br>• There may not be meaningful mitigation for small projects |

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

**Table 2 – 2 (Continued)**
Tiered Threshold Options

| Threshold Number | Description of Threshold | Pros* | Cons* |
|---|---|---|---|
| 2.3 | This threshold is based on CARB's proposed mandatory reporting threshold of 25,000 metric tons of CO2eq per year. Alternatively, use the Market Advisory Committee of 10,000 metric tons of CO2eq per year. Projects less than either would not be significant. | • CARB estimates this threshold would capture 90 % of all industrial projects<br>• Single threshold easier to apply & understand | • May not be amenable to industrial projects because of the diversity of these projects<br>• There may not be meaningful mitigation for small projects |
| 2.4 | This approach establishes a GHG threshold based on and analogous to a NOx/VOC criteria pollutant CEQA significance threshold and is established using the following four steps:<br>a. Define NOx/VOC CEQA thresholds in tons per year (e.g., 10 t/yr)<br>b. Define the regional NOx/VOC inventory in tons per year (e.g., annual NOx inventory for 2005 from 2007AQMP ~ 375,585 t/yr)<br>c. Calculate percentage of NOx/VOC inventory the significance threshold represents (10 / 375,585 = 0.00003) to obtain "minimum percentage of regulated inventory" for NOx/VOC. | • Single threshold easier to apply & understand | • Threshold cumbersome to derive<br>• Threshold would change periodically as inventory goes up or down<br>• Could have widely divergent thresholds by air basin because of varying inventories |

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

**Table 2 – 2 (Continued)**
Tiered Threshold Options

| Threshold Number | Description of Threshold | Pros* | Cons* |
|---|---|---|---|
| 2.4 (Cont.) | d. Define California GHG emission inventory for 2004 in tons CO2eq per year (499 MMT CO2eq). Apply minimum percentage of regulated inventory to California GHG inventory for 2004 to develop a GHG threshold analogous to the CEQA Threshold (e.g., 0.00003 x 499 MMT = 14,970 metric tons CO2eq per year = significance threshold). | • | • |
| 2.5 | Establish quantitative unit-based thresholds based on capturing a percentage, e.g., 90%, of future discretionary projects in specific market sectors (similar to 2.2 above). CAPCOA examples include:<br>• 30,000 square-foot (SF) office =800 metric tons CO2eq per year;<br>• 30,000 SF retail = 2,500 metric tons CO2eq per year;<br>• 30,000 SF supermarket = 43,000 metric tons CO2eq per year. | • Would capture a larger percentage of projects in the district than is currently the case<br>• Would exclude small projects from further GHG analysis<br>• Single threshold easier to apply & understand | • Would increase administrative & cost burden, especially in developing & moderate growth areas<br>• May not be amenable to industrial projects because of the diversity of these projects<br>• There may not be meaningful mitigation for small projects |

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

**Table 2 – 2 (Concluded)**
Tiered Threshold Options

| Threshold Number | Description of Threshold | Pros* | Cons* |
|---|---|---|---|
| 2.6 | This threshold would include tiered CEQA thresholds based on CEQA's definition of "projects with statewide, regional or areawide significance (§15206(b)), which include:<br>• Residential development > 500 dwellings<br>• Shopping center or business establishment employing > 1,000 persons or > 500,000 SF<br>• Commercial office building employing >1,000 persons or > 250,000 SF<br>• Hotel/motel > 500 rooms<br>• Industrial, manufacturing or processing plant or industrial park employing > 1,000 persons or > 600,000 SF | • Could capture up to 50% of all future commercial development | • May capture substantially less than 50% if future development, resulting less GHG mitigation<br>• Percentage capture of industrial/manufacturing projects currently unknown |
| 2.7 | Efficiency-based thresholds would be based on measurements of efficiency compared to intensity. Must be based on reasonable GHG emissions compared to business-as-usual. | • Would benchmark GHG intensity against target levels of efficiency<br>• Thresholds established to provide future foreseeable GHG reductions compared to BAU<br>• Would support AB 32 target objectives | • Would require substantial data & possibly modeling<br>• May be more appropriate as a threshold in the long term |

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

# CHAPTER 3

# INTERIM GHG SIGNIFICANCE THRESHOLD STAFF PROPOSAL

**Introduction**

**GHG Analysis Considerations**

**Current Staff Interim GHG Significance Threshold Proposals**

# INTRODUCTION

Because GHG emissions affect global climate, some have argued that it may be more appropriate for national or state agencies to establish significance thresholds or GHG emission reduction target objectives. However, no agency has established GHG significance thresholds that could assist Lead Agencies with determining the significance of GHG emissions in CEQA documents. In the absence of statewide guidance on this issue and in response to requests from a variety of stakeholders, the SCAQMD established a GHG Significance Threshold Stakeholder Working Group (Working Group) to establish an interim GHG significance threshold until such time as the state establishes a GHG significance threshold or provides recommended guidance on establishing a GHG significance threshold. Staff's goal is to reach consensus regarding an interim GHG significance threshold to the extent possible and take the staff proposal to the SCAQMD Governing for consideration and approval.

The Working Group is comprised of a wide variety of stakeholders including: state agencies, OPR, CARB, and the Attorney General's Office; local agencies, city and county planning departments, utilities such as sanitation and power, etc.; regulated stakeholders, industry and industry groups; and organizations, both environmental and professional. Stakeholders were chosen based on their participation in other related stakeholder working groups and their expressed interest in participating in the developing a GHG significance threshold. Working group meetings are open to the public and have been well attended. The members of the Working Group and other interested parties who have requested to be notified of the meetings are listed in Appendix A. Information on the progress of the Working Group, including agendas, overhead presentations, and letters received from the various stakeholders can be found at the following website:
https://www.aqmd.gov/ceqa/handbook/GHG/GHG.html.

Part of the purpose of the Working Group is to provide a forum to solicit comments and suggestions from the various stakeholders to assist SCAQMD staff with developing an interim GHG significance threshold that is consistent with CEQA requirements for developing significance thresholds, is supported by substantial evidence, and provides flexibility with regard to determining whether GHG emissions from a proposed project are significant.

SCAQMD staff held the first Working Group meeting in April 2008. Except for September, Working Group meetings have been held on a monthly basis since April. Brief summaries of each Working Group meeting and the topics and staff GHG significance threshold proposals discussed to date are provided in Appendix B. Staff's initial proposed has been modified over time based on comments and concerns raised at Working Group meetings or in written comments. The following sections summarize staff's latest recommended interim GHG significance threshold proposal and some of the concepts necessary to understanding the various components of staff's proposal. The latest staff proposal is considered to be a work-in-progress as staff is continuing to solicit further public input and suggestions.

The following subsections briefly summarize the GHG significance threshold design criteria concepts included as part of staff's proposed interim GHG significance threshold proposal. Following the discussion of design concepts, SCAQMD staff's current interim proposal is described.

## GHG ANALYSIS CONSIDERATIONS

Before discussing quantification methodologies, it is necessary to consider design criteria that establish the parameters upon which the actual GHG analysis is based. The following subsections include discussions from the Working Group of some of the most important design criteria to be considered when quantifying GHG emissions. The following topics include some of the most important parameters that should be considered when quantifying GHG emissions and, therefore, should not be considered an exhaustive list of considerations as individual projects may include characteristics that may require additional considerations.

### GHG Pollutants

Gases that trap heat in the atmosphere are often called greenhouse gases. The Kyoto Protocol, adopted in December 1997, is an agreement under which industrialized countries will reduce their collective emissions of greenhouse gases by specified percentages, depending on the country, compared to 1990 levels. The goal is to lower overall emissions of six greenhouse gases - carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons, averaged over the period of 2008-2012.

Similarly, AB 32 defines GHGs as including the following: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (Health and Safety Code, section 38505(g)). The most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide.

Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are:

- **Carbon Dioxide (CO2):** Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH4):** Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other

agricultural practices and by the decay of organic waste in municipal solid waste landfills.

- **Nitrous Oxide (N2O):** Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

- **Fluorinated Gases:** Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). Fluorinated gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as high global warming potential gases (high GWP gases).

    - Hydrofluorocarbons are manmade chemicals that have historically replaced Chlorofluorocarbons used in refrigeration and semiconductor manufacturing.

    - Perfluorocarbons are manmade chemicals that are by-products of aluminum smelting and uranium enrichment.

    - Sulfur hexafluoride is a manmade chemical that is largely used in heavy industry to insulate high voltage equipment and to assist in the manufacturing of cable cooling systems.

GWP is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale that compares the gas in question to the same mass of carbon dioxide (whose GWP is by definition 1). A GWP is calculated over a specific time interval and the value of this must be stated whenever a GWP is quoted or else the value is meaningless. A substance's GWP depends on the time span over which the potential is calculated. A gas which is quickly removed from the atmosphere may initially have a large effect but for longer time periods as it has been removed becomes less important. For the purposes of a CEQA analysis, especially an analysis of operation emissions, the maximum GWP is typically used, regardless of the actual atmospheric lifetime. This approach simplifies the analysis and provides a very conservative analysis, especially for the fluorinated gases. The GWP of the six Kyoto GHGs is shown in Table 3-1.

The SCAQMD staff recommends that a GHG analysis include the six Kyoto GHGs, to the extent emission factors are available primarily because there is more information on these GHGs than other potential GHGs. Other GHGs would be added to the list as scientific information becomes available and agreed to by national or international protocols and agreements.

**Table 3-1**
Global Warming Potential of Kyoto GHGs

| Gas | Atmospheric Lifetime | GWP |
|---|---|---|
| Carbon dioxide (CO2) | 50 – 200 | 1 |
| Methane (CH4) | 12 ± 3 | 21 |
| Nitrous oxide (N2O) | 120 | 310 |
| HFC-23 (Hydrofluorocarbons) | 264 | 11,700 |
| HFC-32 | 5.6 | 650 |
| HFC-125 | 32.6 | 2,800 |
| HFC-134a | 14.6 | 1,300 |
| HFC-143a | 48.3 | 3,800 |
| HFC-152a | 1.5 | 140 |
| HFC-227ea | 36.5 | 2,900 |
| HFC-236fa | 209 | 6,300 |
| HFC-4310mee | 17.1 | 1,300 |
| CF4 (Perfluorocarbons) | 50,000 | 6,500 |
| C2F6 | 10,000 | 9,200 |
| C4F10 | 2,600 | 7,000 |
| C6F14 | 3,200 | 7,400 |
| Sulfer hexafluoride (SF6) | 3,200 | 23,900 |

Source: U.S. EPA (http://www.epa.gov/)

Carbon black, a form of particulate air pollution most often produced from biomass burning, cooking with solid fuels and diesel exhaust, may also have a warming effect in the atmosphere. It is estimated that carbon black's contribution to climate change is second only to carbon dioxide. Carbon black contributes to global warming by absorbing heat while airborne in the atmosphere. Carbon black is of particular concern in the arctic because it settles on ice and snow, reducing its reflectivity and increasing the rate of melting.

Based on a survey of available information, there are little data available for calculating carbon black effects on global warming. As a result, SCAQMD staff is not recommending analyzing carbon black effects on global warming. As information becomes available, staff will reconsider adding carbon black to the list of GHGs to be analyzed in CEQA documents.

**Business-As-Usual (BAU)**

In CARB's Scoping Plan (CARB, 2008) CARB states that the BAU case is a representation of what the state of the California economy will be in the year 2020 assuming that none of the measures recommended in the Scoping Plan are implemented. CARB's projected BAU GHG emissions in 2020 are shown in Table 3-2.

**Table 3-2**
2002-2004 Average Emissions and 2020 Projected Emissions (Business-as-Usual)
(MMTCO2E)

| Sector | 2002-2004 Average Emissions | Projected 2020 Emissions [BAU] |
|---|---|---|
| Transportation | 179.3 | 225.4 |
| Electricity | 109.0 | 139.2 |
| Commercial and Residential | 41.0 | 46.7 |
| Industry | 95.9 | 100.5 |
| Recycling and Waste | 5.6 | 7.7 |
| High GWP | 14.8 | 46.9 |
| Agriculture | 27.7 | 29.8 |
| Forest Net Emissions - | 4.7 | 0.0 |
| **Emissions Total** | **469** | **596** |

Source: CARB, 2008 – Scoping Plan, Table 1

CARB's Scoping Plan states further that continuing increases in global greenhouse gas emissions at BAU rates would result, by late in the century, in California losing 90 percent of the Sierra snow pack, sea level rising by more than 20 inches, and a three to four times increase in heat wave days, flood damage, etc. To avoid future foreseeable environmental impacts to California, the Scoping plan calls for an ambitious but achievable reduction in California's carbon footprint. Reducing greenhouse gas emissions to 1990 levels means reducing approximately 30 percent from BAU emission levels projected for 2020, or about 15 percent from today's levels. On a per-capita basis, that means reducing our annual emissions of 14 tons of carbon dioxide equivalent for every man, woman and child in California down to about 10 tons per person by 2020.

Although CARB's Scoping Plan calls for reducing GHG emissions 30 percent from BAU levels, it does not explicitly define BAU. There is, however, a brief definition of BAU in CARB's GHG inventory document (CARB, 2007). In that document CARB describes BAU as:

- BAU is based on GHG emissions estimates in the absence of policies and reduction measures, and
- BAU is based on forecasted demographic and economic growth.

In its White Paper, CAPCOA provides a more detailed definition of BAU compared to the above definition in CARB's inventory document. In the White Paper BAU is defined as follows:

- The projection of GHGs into the future based on current technologies and regulations;
- The adoption of new GHG reduction regulations, e.g., CARB's Scoping Plan measures, in the future establishes new BAU, i.e., the definition of BAU evolves over time; and
- BAU will normally define the CEQA no project alternative, but does not necessarily form the project baseline.

Based on the above definitions and discussions from the Working Group, SCAQMD staff defines BAU as the following

- Is used to project project's future emissions (consistent with CAPCOA and CARB definitions), i.e., level from which GHG reductions must occur;
- Is based first and foremost on current regulatory requirements (consistent with CAPCOA and CARB definitions);
- Regulatory requirements may determine current technology, e.g., advanced technology may be available, but not required, such as combined cycle gas turbine;
- Will normally define the no project alternative (consistent with CAPCOA and CARB definitions); and
- May be used to establish a project's CEQA baseline, only if consistent with CEQA Guidelines §15125.

The importance of BAU lies not only in the fact that it is a methodology for calculating a project's future emissions, is also forms the emission level from which GHG emission reductions must occur. SCAQMD staff's current GHG significance threshold proposal includes the Tier 4 compliance option 1 that establishes a performance standard of reducing GHG emissions 30 percent below the project's projected BAU emissions through design features and/or mitigation measures. A 30 percent reduction from BAU is consistent with the target objectives of AB 32 and CARB's Scoping Plan. The intent of the Tier 4 compliance option 1 is to provide a feasible target objective, that will not only contribute to achieving the AB 32 target objective, but will also contribute to achieving the 2050 target of the Governor's Executive Order S-3-05, which establishes of target objective of reducing GHG emissions 80 percent below 1990 levels or a 90 percent reduction from current BAU estimates.

As recognized by CAPCOA and SCAQMD, BAU will evolve over time as the current regulatory framework changes to implement GHG reduction strategies, either statewide strategies, e.g., CARB's Scoping Plan, or any future federal strategies. Evolving BAU creates two issues for the CEQA practitioner. First, staff's proposed

Tier 4 compliance option 1 target objective is unchanged from 30 percent, then over time as BAU changes to incorporate GHG reduction strategies, achieving the target objective will become more difficult. Second, any GHG significance thresholds that rely on BAU will have higher uncertainties because they rely on a constantly changing BAU, which may be difficult to define.

To resolve some of these issues of an evolving definition of BAU, SCAQMD staff recommends that a statewide definition be developed by CARB that is updated periodically. Until such time as a statewide definition of BAU is developed, the SCAQMD staff will rely on the above definition. Because the SCAQMD's staff's GHG significance proposal is considered to be an interim proposal, future updates or revisions to staff's proposal would also include updates to BAU or the target objective as BAU levels decline over time. It may be that a target objective percent reduction from BAU levels is a short-term GHG threshold proposal and may become less important in the future as other concepts are evaluated and more fully developed.

## GHG Source Categories to Analyze

### Life Cycle Analysis

CEQA requires that the lead agency analyze direct and indirect impacts from a proposed project, giving due consideration to short-term and long-term effects (CEQA Guidelines 15126.2(a)). In the case of GHG pollutants a systems approach to evaluating the consequences of a particular product, process or activity may be more appropriate because of the long atmospheric lifetimes of the various GHGs (see Table 3-1). One of the most effective ways of evaluating GHGs using a systems approach is through the preparation of a life cycle analysis (LCA).

The goal of a life cycle analysis is to compare the full range of environmental damages assignable to products and services, to be able to choose the least burdensome one. The term 'life cycle' refers to the concept that a fair, holistic assessment requires the assessment of raw material production, manufacture, distribution, use and disposal including all intervening transportation steps necessary or caused by the product's existence. The sum of all those steps - or phases - is the life cycle of the product.

Performing a life cycle analysis may be difficult for a number of projects or processes because life cycle emission factors may not be well established for many activities or projects and the life cycle process itself may not be known or well-defined. SCAQMD staff, however, recommends that life cycle analyses be prepared for all projects undergoing a CEQA analysis, as this will produce a more defensible approach. If, however, any component of the life cycle analysis is unavailable, unknown, or not supported by scientific evidence, the lead agency should note such an analysis would be speculative pursuant to CEQA Guidelines §15145 and terminate discussion of that impact.

**Direct/Indirect Impacts**

Consistent with CEQA, indirect and direct impacts of the project, typically within California, are required to be analyzed in the CEQA document for a proposed project. The analysis of direct GHG impacts is relatively straightforward as onsite GHG sources or directly related offsite GHG sources, such as worker commute trips, are generally readily identifiable. Indirect GHG emission sources are less obvious, but may include some of the sources identified in the following paragraphs. In general, for most projects information on direct and indirect emissions may be available, rather than a full life-cycle analysis of emissions. The lead agency has typically been expected to address emissions that are closely related and within the capacity of the project proponent to control and/or influence.

**Direct Impacts -** are primary effects that are caused by a project and occur at the same time and place, such as emissions from boilers, heaters, or other onsite emissions sources. Direct impacts generated by a project may include offsite sources directly related to the project such as emissions from worker commute trips, haul truck trips to import raw materials and/or export finished products or other goods.

Direct GHG emission impacts will include both construction and operation activities. Because impacts from construction activities occur over a relatively short-term period of time, they contribute a relatively small portion of the overall lifetime project GHG emissions. In addition, GHG emission reduction measures for construction equipment are relatively limited. Therefore, SCAQMD staff is recommending that construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies.

**Indirect Impacts -** The CEQA Guidelines define indirect impacts as the following: an indirect physical change in the environment…which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect change in the environment (CEQA Guidelines §15064 (d)(2)). Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems (CEQA Guidelines §15358)(a)(2)).

## DRAFT STAFF INTERIM GHG SIGNIFICANCE THRESHOLD PROPOSAL

As indicated by the evolution of the staff proposal over time, SCAQMD has generally recommended a tiered decision tree approach to establishing a GHG significance threshold. In CAPCOA's White Paper, eight of the 12 significance threshold options are based on a tiered threshold approach (see also Table 2-2 in Chapter 2). A tiered GHG significance threshold approach is an appealing approach because it provides

flexibility in determining whether or not GHG emissions from a project are significant typically using a single methodology to establish various tiers that can be based on the physical size of the project, land use type, or other characteristics. The tiered approach envisioned by SCAQMD staff would require quantification of GHG emissions for all projects that are subject to CEQA and quantification of the GHG reduction effectiveness of design parameters incorporated into the project and any mitigation measures imposed by the lead agency. It may even be necessary to quantify GHG emissions, if any, for projects that would otherwise qualify for a categorical exemption to document that no "cumulative impact of successive projects of the same type in the same place, over time is significant" (CEQA Guidelines §15300.2(b), or that there is no "reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances." (CEQA Guidelines §15300.2(c)).

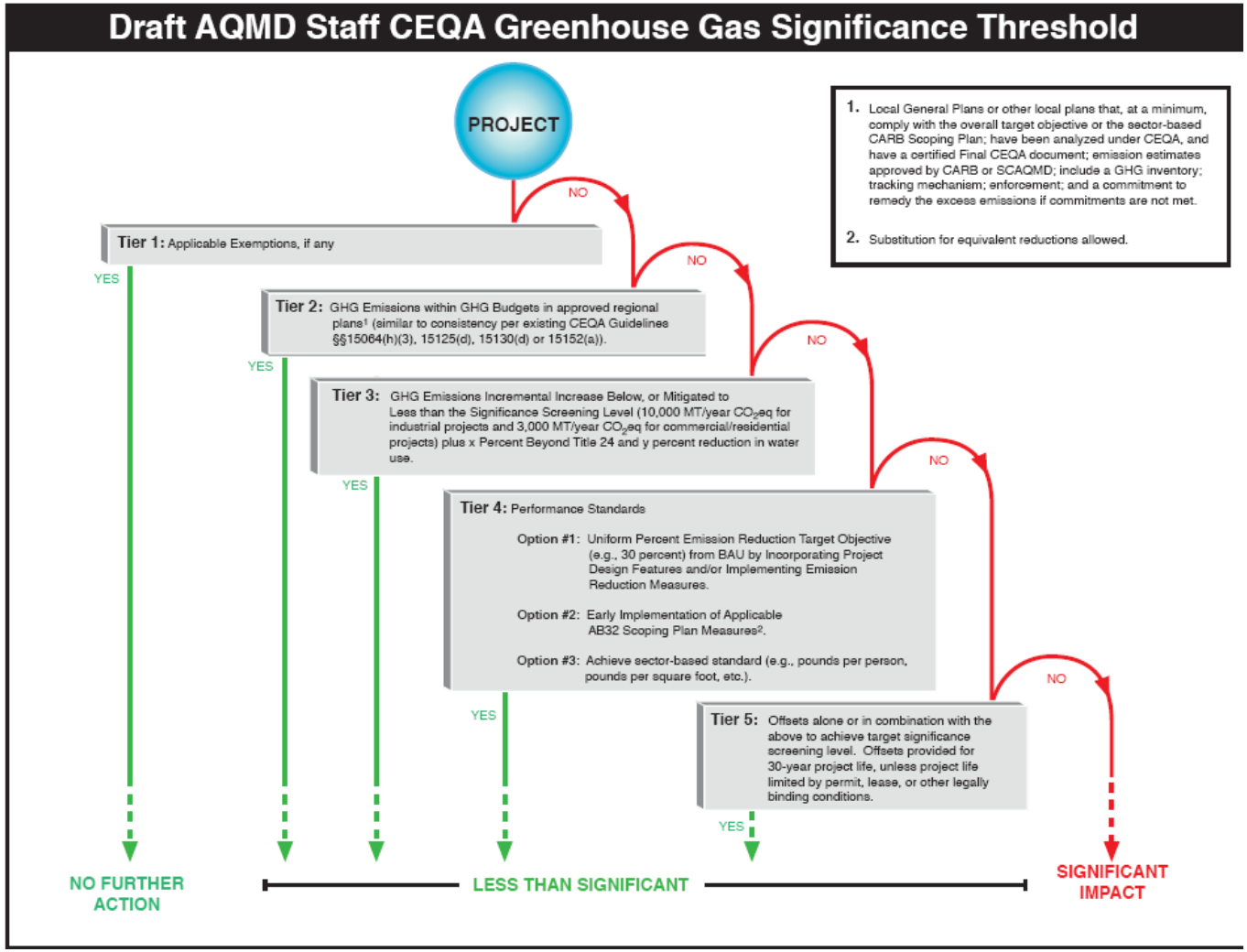
The CAPCOA White Paper also includes a discussion of a decision tree approach to tiering. Instead of using a single methodology to establish tiers, a decision tree approach would use multiple methodologies to demonstrate significance for a broad range of projects/plans that may be difficult to address using a single GHG significance threshold methodology. Using a decision tree approach promotes even greater flexibility in determining significance for a variety of project types.

At the August 27, 2008 Working Group meeting #5, staff presented the revised interim GHG significance proposal #3, which included a tiered decision tree approach. Unlike the decision tree approach discussed in CAPCOA's White Paper, some tiers include multiple approaches for determining whether a project's GHG emissions are significant, rather than using a single different methodology for each tier. The components of revised staff proposal #3 are described in the following paragraphs and shown graphically in Figure 3-1.

- **Tier 1 –** consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA. For example, SB 97 specifically exempts a limited number of projects until it expires in 2010. If the project qualifies for an exemption, no further action is required. If the project does not qualify for an exemption, then it would move to the next tier.

- **Tier 2 –** consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing concept of consistency in CEQA Guidelines §§15064(h)(3), 15125(d), or 15152(a). The GHG reduction plan must, at a minimum, comply with AB 32 GHG reduction goals; include emissions estimates agreed upon by either CARB or the SCAQMD, have been analyzed under CEQA, and have a certified Final CEQA document. Further, the GHG reduction plan must include a GHG emissions inventory tracking mechanism; process to monitor progress in achieving GHG emission reduction targets, and a commitment to remedy the excess emissions if AB 32 goals are not met (enforcement).

**Figure 3-1**
Revised Staff Proposal #3 Tiered Decision Tree Approach – August 27, 2008



If the proposed project is consistent with the local GHG reduction plan, it is not significant for GHG emissions. If the project is not consistent with a local GHG reduction plan or there is no approved plan, the GHG reduction does not include all of the components described above, or there is no adopted GHG reduction plan, the project would move to tier 3.

- **Tier 3 –** attempts to identify small projects that would not likely contribute to significant cumulative GHG impacts. However, because of the magnitude of increasing global temperatures from current and future GHG emissions, staff is recommending that all projects must implement some measure or measures to contribute to reducing GHG emissions. Therefore, Tier 3 includes a requirement that all projects with GHG emissions less than the screening level must include efficiency components that reduce a certain percentage beyond the requirements of Title 24 (Part 6, California Code of Regulations), California's energy efficiency standards for residential and nonresidential buildings. Project proponents would also have to reduce by a specified percentage electricity demand from water use, primarily electricity used for water conveyance.

The most recently screening level proposed by staff was 6,500 MTCO2eq./year. This screening level was derived using the SCAQMD's existing NOx operational threshold as a basis. The daily NOx operational significance threshold, 55 pounds per day was annualized, which results in 10 tons of NOx per year.

Staff initially considered and then rejected a bifurcated screening level, that is one screening level for residential and commercial projects and a different screening level for industrial projects based on the URBEMIS modeling runs used to derive the 6,500 MTCO3eq/yr screening level because GHG emissions from industrial were of the same magnitude as the GHG emissions from residential and commercial projects. Staff has reconsidered the bifurcated screening level approach as there is a more scientific basis for deriving the different screening levels.

SCAQMD staff is now recommending a bifurcated screening level approach to address two greatly differing project types: industrial projects as opposed to residential and commercial projects (which are largely indirect sources). The former category typically contains stationary source equipment whose emissions are largely permitted or regulated by the SCAQMD; whereas the latter category is mostly residential, commercial (may also include industrial) building structures that attract or generate mobile source emissions. In light of the GHG reductions needed to stabilize the climate while considering implementation resource requirements, the policy objective used to establish the screening thresholds is to capture projects that represent approximately 90 percent of GHG emissions from new sources. The following paragraphs describe the steps taken to derive the screening threshold values.

**Industrial Projects:** Since the majority of GHG emissions in the district are comprised of CO2 emissions from burning natural gas rather than other types of

fossil fuel, staff compiled reported annual natural gas consumption for 1,115 permitted facilities for 2006-2007 and rank-ordered the facilities to estimate the 90$^{th}$ percentile of the cumulative natural gas usage for all permitted facilities. Operators of these facilities are required to report their emissions and associated throughput under the SCAQMD's Annual Emission Reporting (AER) Program if any of their criteria pollutant emissions exceed four tons per year (100 tons per year for CO) or if the facility has any reportable air toxics emission. Figure 3-2 shows that approximately 10 percent of facilities evaluated comprise more than 90 percent of the total natural gas consumption, which corresponds to 10,000 metric tons per year (tpy) of CO2 emissions. This value represents a boiler with a rating of approximately 27 million British thermal units per hour (mmbtu/hour) of heat input, operating at a 25 percent capacity factor. If the screening threshold of 10,000 MTCO2eq./yr is implemented, based on the permitting activities for 2006-2007 it will result in at least 31 additional MNDs or EIRs being prepared by the SCAQMD as the lead agency unless another tier option is selected to demonstrate no significant impacts for GHG emissions. It should be noted that this analysis did not include other possible GHG pollutants such as methane, N2O; a life-cycle analysis; mobile sources; or indirect electricity consumption. Therefore, under a 10,000 MTCO2eq./yr screening level more projects would be required to go through an MND or EIR environmental analysis than is currently the case. Furthermore, when the SCAQMD acts as a lead agency, the stationary source equipment employed as part of the proposed project typically must comply with BACT or other SCAQMD rules, regulations, programs that require reducing criteria pollutants or air toxics. Therefore, staff is proposing to replace the 6,500 MTCO2/yr screening level with the 10,000 MTCO2eq/yr as the screening level in tier III for industrial projects when the SCAQMD is the lead agency for the project.

**Residential and Commercial Projects:** To achieve the same 90 percent GHG emission capture rate for this segment of projects GHG emissions from residential and commercial sectors were compared to the GHG emissions from the industrial sector including the in-state power plants. The draft AB32 scoping plan indicates that based on statewide 2002-2004 average GHG emissions, the residential and commercial sectors account for approximately nine percent of the total statewide GHG inventory, while the industrial sector (including instate power plants) accounts for approximately 30 percent of the statewide GHG emission inventory. The inventory methodology for both sectors includes only on-site energy use, consistent with the staff approach taken in deriving the 10,000 tpy threshold. Assuming similar emission characteristics also exist for the residential and commercial sector (i.e., large residential or commercial projects, although fewer in numbers, contribute substantially more to the total emissions), it is estimated that at a threshold of approximately 3,000 MTCO2eq/yr emissions (10,000 x (9 percent / 30 percent)) would capture 90 percent of the GHG emissions from new residential or commercial projects. A series of sensitivity analyses was performed by the staff using URBEMIS to assess the likely project size for 3,000 MTCO2eq/yr emissions. Table 3-3 illustrates various projects by size and shape.

**Figure 3-2**

Total Number of AER Facilities and Their Accumulative Reported NG Usage
FY 06-07

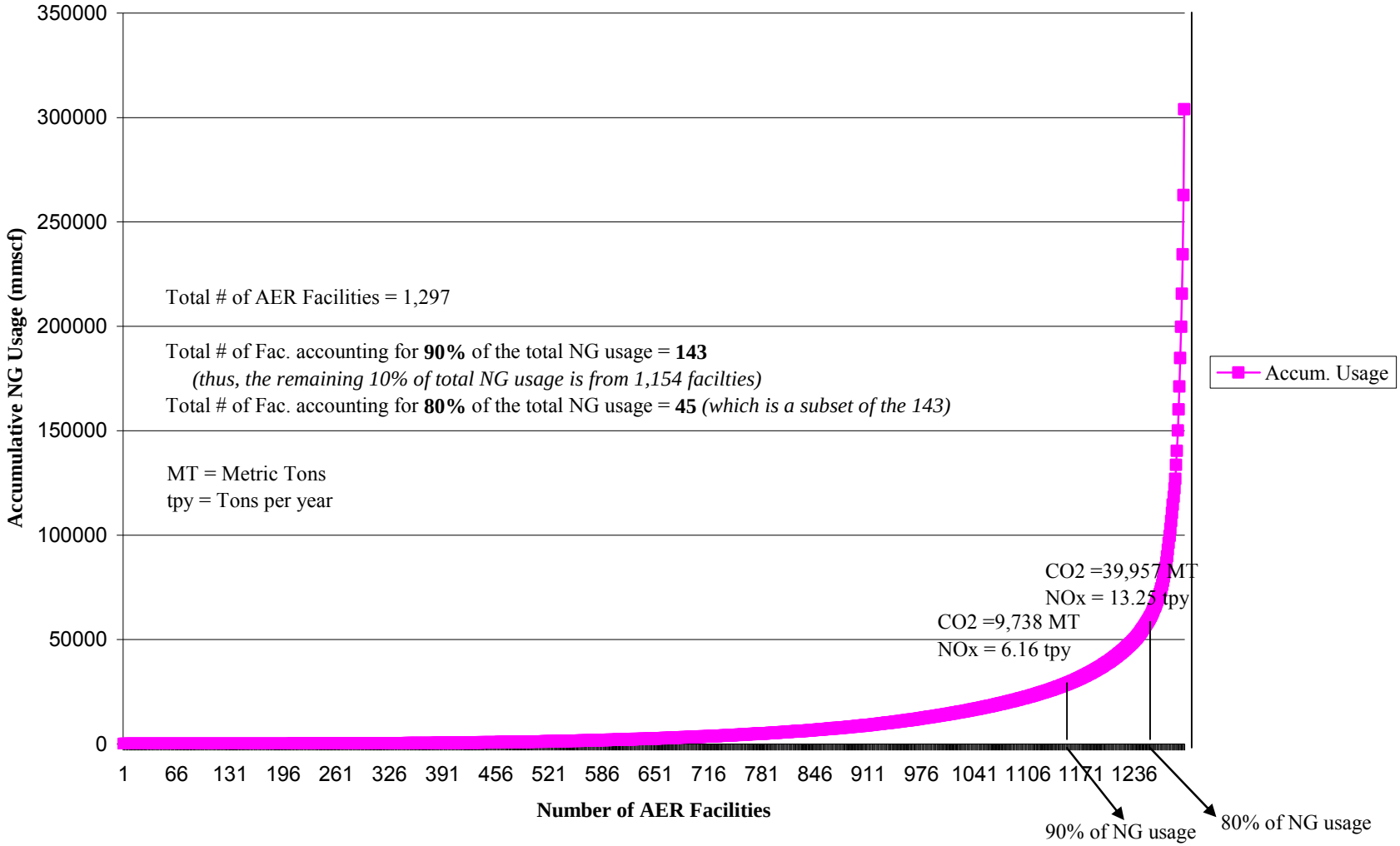


**Table 3-3**
URBEMIS Run Results for Residential/Commercial Projects Emitting Approximately 3,000 MTCO2 per Year

| | | | *Area Source Emissions* | | *Operational Emissions* | | **TOTAL** |
|---|---|---|---|---|---|---|---|
| | **Weighted Avg Trip Rate** | **Size** | **CO2 (tons/year)** | **CO2 (MT/year)** | **CO2 (tons/year)** | **CO2 (MT/year)** | **CO2 (MT/year)** |
| Res - Single Unit | 19.54 | 80 units | 326.86 | 297.15 | 3003.56 | 2730.51 | 3027.65 |
| Res - Apt | 9.17 | 175 units | 422.70 | 384.27 | 2971.95 | 2701.77 | 3086.05 |
| Comm - Office | 6.02 | 265,000 $ft^2$ | 387.41 | 352.19 | 2961.75 | 2692.50 | 3044.69 |
| Comm - Bank | 206.22 | 9,500 $ft^2$ | 14.38 | 13.07 | 3192.90 | 2902.64 | 2915.71 |
| Single/Apt | 19.54 | 35 units | 379.59 | 345.08 | 2964.82 | 2695.29 | 3040.37 |
| | 9.17 | 100 units | | | | | |
| Office/Bank | 6.02 | 170,000 $ft^2$ | 254.19 | 231.08 | 3042.71 | 2766.10 | 2997.18 |
| | 206.22 | 3,400 $ft^2$ | | | | | |
| Office/Single | 6.02 | 135,000 $ft^2$ | 355.13 | 322.85 | 2956.32 | 2687.56 | 3010.41 |
| | 19.54 | 40 units | | | | | |
| Office/Apt | 6.02 | 135,000 $ft^2$ | 403.19 | 366.54 | 2952.34 | 2683.95 | 3050.48 |
| | 9.17 | 85 units | | | | | |
| Bank/Single | 206.22 | 3,700 $ft^2$ | 202.81 | 184.37 | 3052.93 | 2775.39 | 2959.76 |
| | 19.54 | 50 units | | | | | |
| Bank/Apt | 206.22 | 4,000 $ft^2$ | 248.12 | 225.56 | 3042.64 | 2766.04 | 2991.60 |
| | 9.17 | 100 units | | | | | |
| Single/Apt/Office | 19.54 | 20 units | 382.60 | 347.82 | 2945.26 | 2677.51 | 3025.33 |
| | 9.17 | 65 units | | | | | |
| | 6.02 | 100,000 $ft^2$ | | | | | |
| Single/Apt/Bank | 19.54 | 20 units | 241.78 | 219.80 | 3020.76 | 2746.15 | 2965.95 |
| | 9.17 | 65 units | | | | | |
| | 206.22 | 3,550 $ft^2$ | | | | | |
| | | | | | | Avg CO2 (MT/year): | **3009.60** |

As shown in Table 3-3, this threshold would represent a residential development of about 70 single-family dwelling units. It should be noted that the sensitivity analysis did not include GHG emissions from electricity use and water use. As a result, similar to the earlier discussion of industrial projects, this screening level of 3,000 MTCO2eq/yr could capture development projects less than 70 single-family dwelling units.

In CAPCOA's White Paper, it is suggested that a thresholds of 900 MTCO2eq/yr would capture 90 percent of all development projects, which should translate into at least 90 percent of GHG emissions from the residential and commercial sectors[2]. According to CAPCOA 900 MTCO2eq/yr equates to approximately 50 single-family dwelling units. This information appears to corroborate the SCAQMD staff's finding that the policy objective of capturing 90 percent of all GHG emissions for this region can be achieved with a screening level of 3000 MTCO2eq/yr. Therefore, staff is recommending that this value be used by lead agencies for residential and commercial developments, including industrial parks, warehouses, etc.

- **Tier 4 – Decision Tree Options:** consists of three decision tree options to demonstrate that a project is not significant for GHG emissions. The four compliance options are as follows.

  **Compliance Option 1 –** the lead agency would calculate GHG emissions for a project using a BAU methodology. Once GHG emissions are calculated, the project proponent would need to incorporate design features into the project and/or implement GHG mitigation measures to demonstrate a 30 percent reduction from BAU. Although a 30 percent reduction below BAU is consistent with the target objectives of AB 32, it will continue to reduce GHG emissions beyond 2020, thus, contributing to GHG reductions pursuant to the Governor's Executive Order S-3-05 (a 90 percent reduction compared to current GHG emissions). A 30 percent reduction is also considered to be an achievable GHG reduction target based on current technologies.

  **Compliance Option 2 –** this option consists of early compliance with AB 32 through early implementation of CARB's Scoping Plan Measures. The intent of this compliance option is to accelerate GHG emission reductions from the various

[2] Although the CAPCOA White Paper implies that 900 metric tons per year equates to a 90 percent capture rate, there is no explicit information provided in the White Paper that demonstrates this correlation. Indeed, the CAPCOA authors state that 900 metric tons, which represents approximately 50 residential units, corresponds to widely divergent capture rate percentile rankings depending on the project location (see discussion on page 43 of the White Paper). Percentile rankings were based on a survey of four cities in California. A project of 900 metric tons per year representing a 90 percent capture rate appears to be a working assumption for which there appears to be no factual basis. Further, although not explicitly stated, it is assumed that the 900 metric tons were derived using the URBEMIS2007 model. It should be noted that that the URBEMIS2007 model only quantifies CO2 emissions and direct emissions primarily from on-road mobile sources. It does not capture other GHG pollutants or indirect GHG emissions such as emissions from energy generation, water conveyance, etc. Therefore, it is likely that a 50-unit residential project would actually generate higher GHG emissions than 900 metric tons per year.

sectors subject to CARB's Scoping Plan to eliminate GHG emission, especially for those GHGs that have a long atmospheric lifetime such as CO2, sulfur hexafluoride, etc., to minimize future projected impacts to California from global climate change.

**Compliance Option 3 –** this compliance option consists of establishing sector-based performance standards. For example, it may be possible to use the 1990 inventory required under AB 32 to establish an efficiency standard such as pounds per person, pounds per worker, pounds per square feet, pounds per item manufactured, etc. When calculating GHG emissions from a project, if they are less than the established efficiency standard the project would not be significant relative to GHG emissions, while projects exceeding the efficiency standard would be significant.

If the lead agency or project proponent cannot achieve the performance standards on any of the compliance options in Tier 4, GHG emissions would be considered significant.

- **Tier 5 –** under this tier, the lead agency would quantify GHG emissions from the project and the project proponent would implement offsite mitigation (GHG reduction projects) or purchase offsets to reduce GHG emission impacts to less than the proposed screening level. In addition, the project proponent would be required to provide offsets for the life of the project, which is defined as 30 years. If the project proponent is unable to obtain sufficient offsets, incorporate design features, or implement GHG reduction mitigation measures to reduce GHG emission impacts to less than the screening level, then GHG emissions from the project would be considered significant.

# CHAPTER 4

# CONSIDERATIONS WHEN ANALYZING GHG EMISSIONS

**Introduction**

**GHG Analysis Recommendations**

# INTRODUCTION

As noted in Chapter 1, on June 19, 2008, OPR, in collaboration with the California Resources Agency, the California Environmental Protection Agency and the California Air Resources Board, released a *Technical Advisory* containing informal guidance for public agencies as they address the issue of climate change in their CEQA documents. With regard to analyzing GHG emission impacts OPR states,

"Each public agency that is a lead agency for complying with CEQA needs to develop its own approach to performing a climate change analysis for projects that generate GHG emissions. A consistent approach should be applied for the analysis of all such projects, and the analysis must be based on best available information… Lead agencies should determine whether greenhouse gases may be generated by a proposed project, and if so, quantify or estimate the GHG emissions by type and source."

Other than this general advice, the *Technical Advisory* does not provide explicit details for quantifying GHG emissions.

CAPCOA's White Paper provides a comprehensive discussion of modeling tools that are currently available for analyzing GHG emissions[3]. As indicated in the White Paper, no one model is currently available that is capable of estimating all of a project's direct and indirect GHG emissions. It is likely, however, that the Urban Emissions (URBEMIS) Model will be the most commonly used model for calculating GHG emissions because it currently calculates CO2 emissions (in addition to criteria pollutant emissions) during both construction and operation of proposed projects, it is publicly available, and already widely used in California. Statewide use of the URBEMIS model would provide consistency throughout California with regard to quantifying GHG emissions. For a list of currently available models that calculate GHG emissions and summaries of the capabilities, advantages, and disadvantages of each model refer to Table 10 on pages 75 through 78 in the CAPCOA White Paper.

The purpose of this chapter is to provide more explicit guidance to CEQA practitioners with regard to quantifying GHG emissions than OPR's *Technical Advisory*, while building on the information provided CAPCOA's White Paper.

# GHG ANALYSIS RECOMMENDATIONS

### Direct/Indirect Impacts

As noted in Chapter 3 of this Guidance Document, consistent with CEQA, indirect and direct impacts of the project, typically within California, are required to be analyzed in the CEQA document for a proposed project. The analysis of direct GHG impacts is

[3] For maximum transparency with regard to quantifying GHG emissions and disclosure to the public, SCAQMD staff recommends using only publicly available models.

relatively straightforward as onsite GHG sources or directly related offsite GHG sources, such as worker commute trips, are generally readily identifiable. Indirect GHG emission sources are less obvious, but may include some of the sources identified in the following paragraphs. In general, for most projects information on direct and indirect emissions may be available, rather than a full life-cycle analysis of emissions. The lead agency has typically been expected to address emissions that are closely related and within the capacity of the project proponent to control and/or influence.

**Direct Impacts -** are primary effects that are caused by a project and occur at the same time and place, such as emissions from boilers, heaters, or other onsite emissions sources. Direct impacts generated by a project may include offsite sources directly related to the project such as emissions from worker commute trips, haul truck trips to import raw materials and/or export finished products or other goods. The following paragraphs provide general guidance on quantifying direct GHG emissions.

CAPCOA's White Paper provides a comprehensive discussion of modeling tools that are currently available for analyzing GHG emissions. Further, no one model is currently available that is capable of estimating all of a project's direct and indirect GHG emissions. Although there are a number of modeling tools available to calculate GHG emissions the following discussion focuses on a combination of approaches using the URBEMIS model as the basis for analyzing GHG emission impacts. Other approaches for calculating GHG emissions can be used, as long as they are supported by scientific evidence and include publicly available information.

The URBEMIS model is a publicly available model that is currently used statewide to calculate criteria pollutant emissions from construction and operation activities for a wide variety of land use projects. The model is regularly updated through a collaboration of air pollution control agencies, including the SCAQMD, to reflect the most current data, methodologies, and emission factors for quantifying criteria pollutant emissions. The most current update to the model is URBEMIS2007 version 9.2.4, which quantifies CO2 emissions in addition to criteria pollutant emissions.

Currently, there are several disadvantages to using the URBEMIS model to calculate GHG emissions from a proposed project and, as a result, it should not be the only tool used to calculate GHG emissions. For example, currently the URBEMIS model only quantifies CO2 emissions and not other GHG pollutants, with the exception of methane from mobile sources, which is converted to CO2eq. emissions. Since CO2 emissions comprise the bulk of GHG emissions from most projects, URBEMIS GHG results are fairly representative of GHG emissions from a project.

To quantify mobile source emissions from on-road mobile sources, the URBEMIS model uses trip rate information from the Institute of Transportation Engineers Trip Generation Handbook (ITE, 2001) as the trip rate default factor for all land uses. ITE trip rate information is widely used and is considered legally defensible as they rely on substantial reports and surveys of trip rates in cities with little or no transit. As a result, the ITE trip rates are also considered to provide a conservative estimate of trip

rates and associated emissions. The model, however, treats each trip as a separate trip and doesn't consider that a single trip may be used for more than one purpose, referred to as "internalization." The model also does not fully account for interaction between land uses in its estimation of mobile source operational emissions. URBEMIS does allow the user to overwrite the default trip rates and characteristics with more project-specific data from a traffic study prepared for a project.

In spite of the disadvantages of the URBEMIS model described above, it can be used as the first step in quantifying GHG emissions for typical land use projects because it establishes default parameters for the most common emission sources from a project including construction equipment types and activity profiles, area of site disturbed during construction, building size, number vehicle trips, etc., if the level of information about the project is low. If more information about the project is available such as a precise profile of construction equipment and activity levels, number of vehicle trips based on a traffic study prepared for the project, etc., this information can be incorporated into the model. The model can then quantify CO2 emissions from both construction and operation.

The URBEMIS construction analysis quantifies criteria pollutant and CO2 emissions from both off-road sources (primarily construction equipment) and on-road sources (worker commute trips, haul truck trips, etc.). To further flesh out the construction analysis, the lead agency would have to identify emission factors for other GHG pollutants likely to be emitted during construction, i.e., methane and nitrous oxide[4], for both off-road and on-road emissions sources and then quantify the GHG emission results using spreadsheets or other available tools.

The off-road CO2 emission factors in the URBEMIS model are generated from CARB's off- road model (http://www.arb.ca.gov/msei/offroad/offroad.htm). Methane emission factors for off-road equipment can also be obtained from CARB's OFFROAD2007 model. CO2 and methane emission factors for off-road equipment that are based on CARB's OFFROAD2007 model can also be found on the SCAQMD's CEQA webpages at the following URL: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html. Other sources of off-road GHG emissions factors for equipment used in California may be used, as long as they are supported by scientific evidence and are publicly available.

The URBEMIS model is able to quantify mobile source CO2 emissions during construction from on-road mobile sources such as construction worker commute trips, heavy-duty truck trips to haul away demolition debris, soil hauling to and from the site etc., and during operation, primarily vehicle trips using ITE's Trip Generation Manual (ITE, 2001). The on-road CO2 emission factors in the URBEMIS model for both construction and operation are generated from CARB's on- road mobile source emissions model, EMFAC2007 (http://www.arb.ca.gov/msei/onroad/onroad.htm). Methane emission factors for on-road mobile sources can also be obtained from

[4] Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are not combustion emissions, so would not normally be emitted during construction.

CARB's EMFAC2007 model. CO2 and methane emission factors for on-road mobile sources that are based on CARB's EMFAC2007 model can also be found on the SCAQMD's CEQA webpages at the following URL: http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html.

The analysis of operation emissions from all types of land uses in the URBEMIS model focuses primarily on mobile source emissions and some area sources. The model does not quantify emissions from stationary sources. For stationary sources that require a permit from the SCAQMD, emission calculation procedures and methodologies are available in the SCAQMD's Best Available Control Technology Guidelines (http://www.aqmd.gov/bact/partd7-9-2004update.pdf). Examples of facilities that use stationary sources requiring a permit from the SCAQMD include: fossil fuel power plants[5], cement plants, landfills, wastewater treatment plants, gas stations, dry cleaners and industrial boilers. The SCAQMD has procedures and methodologies for projects subject to SCAQMD permits to calculate criteria pollutants and air toxics. It is anticipated that these same procedures and methodologies could be extended to estimate a permitted facility's GHG calculations. For are any stationary and area sources that do not require SCAQMD permits, the same methodologies used for permitted sources could be used. It will be necessary to contact the SCAQMD to obtain information on GHG emission calculation methodologies applicable to stationary source equipment.

**Indirect Impacts -** Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems (CEQA Guidelines §15358)(a)(2)). The examples of facilities that use stationary sources requiring a permit from the SCAQMD that may contribute to direct environmental impact (fossil fuel power plants, cement plants, landfills, wastewater treatment plants, gas stations, dry cleaners and industrial boilers) may also contribute to indirect impacts and, therefore, should be included, as necessary in the CEQA analysis of GHGs.

### Quantification Methodologies and GHG Emission Factors

Methodologies for calculating GHG emissions and GHG emission factors are currently not readily available. Until such time as GHG calculation methodologies and emission factors become well established and more readily available, lead agencies may want to consult the following references to identify acceptable methodologies and emission factors.

1. The first useful reference for GHG emission factors for stationary sources is EPA's Air Pollutant (AP)-42, which is a compilation of air pollutant emission

[5] According to CEQA Guidelines §15227, CEQA does not apply to projects outside of California. The California Attorney General's Office has rendered an opinion stating that the definition of the environment in CEQA does not stop at the borders of California. Further, California public agencies that take an action outside of California is still bound by the requirements of CEQA to prepare an EIR if the action may cause a significant effect on the environment.

factors for stationary point and area sources. Each of the first 13 chapters of AP-42 is dedicated to a specific source activity such as solid waste disposal, petroleum industry, and metallurgical industry. Since the publication of the fifth edition (and supplementals) in 2001, there have been a number of updates to the various specific stationary sources such as hot asphalt plants, organic liquid storage tanks, and coke production. In addition to the criteria pollutant emissions, some of the updated AP-42 chapters provide GHG emission factors for a variety of sources. For example, Chapter 15 of AP-42 focuses on GHG emissions from biogenic sources such as soils, termites, lightning, and enteric fermentation (animal digestive fermentation).

2. Second, the California Climate Action Registry (C-CAR) has prepared a General Reporting Protocol (GRP), which is a relatively easy-to-follow user's manual that outlines the principles, concepts, calculation methodologies and procedures required for effective participation in the California Registry. The appendices of the GRP provide GHG emissions factors, specifically CO2, CH4 and N2O, for electricity use, mobile combustion and stationary combustion based on fuel usage type.

3. Third, a thorough internet search should be conducted to find reliable sources of emissions factors that would assist in accurately determining GHG emissions from a specific source being evaluated. Again, all potential GHGs, such as CO2, CH4 and N2O, should be evaluated to the best of one's ability to locate dependable information.

4. Finally, a material balance approach also may provide reliable average emission estimates for specific sources. A material balance is when one accounts for (or "balances") all the materials going into and coming out of the process in order to make a credible emissions estimation. For some sources, a material balance may provide a better estimate of emissions especially in situations where a high percentage of material is lost to the atmosphere (e. g., sulfur in fuel, or solvent loss in an uncontrolled coating process.) In other cases, material balances may be inappropriate where material is consumed or chemically combined in the process, or where losses to the atmosphere are a small portion of the total process throughput.

**Reporting GHG Emissions – Daily vs. Annual Emissions**

The analysis of GHGs is a much different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, significance thresholds are based on daily emissions because attainment or non-attainment is based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short term exposure effects on human health, e.g., one-hour and eight-hour. Since the half-life of CO2 is approximately 100 years, the effects of GHGs are longer-term, affecting global climate over a relatively long time frame (see also Table 3-1).

Typical GHG emission inventories (EPA5, ARB6, etc.) represent directly emitted GHGs during a given year. As a result, the current convention is to present GHG emissions as annual emissions. The URBEMIS model can be set to calculate annual emissions for a project. When using the URBEMIS model to calculate annual GHG emissions, it may be useful to modify the trip rate for each land use using a weighted trip rate average to more accurately reflect annualized trip rates. A weighted trip rate average reflects the trip rates during the week, as well as trip rates during Saturdays and Sundays. Trip rate information for weekdays and weekend days can be found in the ITE Trip Rate Handbook.

# CHAPTER 5

# CONCLUSION

**Introduction**

**Future Action Items**

# INTRODUCTION

CEQA Guidelines §15064.7(a) encourages lead agencies to establish thresholds of significance to determine the significance of an environmental impact. Further, thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence (CEQA Guidelines §15064.7(b)). Staff's proposed interim GHG significance threshold proposal has been developed through a public process consisting of a series of Stakeholder Working Group meetings. Staff proposals have been modified over time based on written and oral feedback from the Working Group. Staff's intent was to reach consensus to the extent feasible, but for some items staff could not find common ground with some of the stakeholders.

The next immediate step for SCAQMD staff is to present a final interim GHG significance threshold proposal to the SCAQMD Governing Board for consideration. If the Governing Board approves staff's final interim GHG significance threshold proposal, then staff will embark on a number of short-term and intermediate term activities to provide outreach to public agencies that might use staff's interim GHG significance threshold to determine whether or not their projects' GHG emissions are significant, periodically revisit and revise as necessary the interim proposal, and accommodate stakeholders' requests for more information on GHG calculation methodologies and mitigation measures. The following sections provide discussions on future anticipated action items

# FUTURE ACTION ITEMS

### Interim GHG Significance Threshold Outreach Program

It is currently anticipated that staff's interim GHG significance threshold proposal will be presented to, and considered by the Board at the November 7, 2008 public hearing. Consistent with other significance threshold proposals adopted by the Governing Board, if the draft GHG significance threshold proposal is adopted, staff will meet with local cities, councils of governments, and leagues of cities to discuss the staff proposal and address any questions or concerns.

Once the interim GHG significance threshold is adopted, this Guidance Document will be posted on the SCAQMD's CEQA web pages. Staff will also send notice of the adoption of the staff proposal to all agencies, organizations, and individuals on the SCAQMD's CEQA "Interested Parties" mailing list. In addition, it is expected that staff will prepare and make available an informational brochure that summarizes information about the interim GHG significance proposal in addition to this Guidance Document.

Starting in January 2009, as part of its intergovernmental review (IGR) responsibilities under CEQA, where the SCAQMD reviews and CEQA documents prepared by other public agencies, SCAQMD will begin more thorough evaluations of CEQA documents with regard to their GHG analyses and the basis by which they make a determination of significance. Staff will begin recommending use of the staff's interim GHG significance threshold proposal or other available GHG significance thresholds based on substantial evidence in comment letters on notices of preparation of an EIR. As of March 1, 2009, staff will formally recommend use of staff's interim GHG significance threshold proposal or other available GHG significance thresholds based on substantial evidence in comment letters on NDs and MNDs. As of July 1, 2009, staff will formally recommend use of staff's interim GHG significance threshold proposal or other available GHG significance thresholds based on substantial evidence in comment letters on EIRs.

**Compile Lists of GHG Design Features and Mitigation Measures**

CEQA Guidelines §15126.4 requires an EIR to "describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy." Ideally, it is desirable to avoid impacts altogether through incorporating design features into the proposed project. Because staff's recommended interim GHG significance threshold includes performance standards (see tier 4 compliance options 1 and 3) or a project proponent may try to reduce GHG emissions to less than the applicable screening levels, mitigation measures or design features are important components of the overall GHG significance threshold strategy. As a result, a number of GHG Working Group stakeholders has requested that SCAQMD compile lists of design features or mitigation measures to assist with reducing GHG emissions for all land use types.

In response to the request from GHG Working Group stakeholders to develop GHG design features and mitigation measures, over the next year SCAQMD staff will compile lists of GHG reduction strategies, including control efficiencies, by sector and make the lists available online with other recommended mitigation measures. There is already a robust body of mitigation measures available (see in particular the CAPCOA bullet point discussion below), but in most cases, they do not include control efficiencies. SCAQMD staff will use the following mitigation sources as a basis from which to compile mitigation strategies.

- **CEQA Guidelines, Appendix F –** this appendix includes a list of general energy conservation measures that may be used as a basis to identify GHG reduction strategies. The measures do not contain GHG control efficiencies, so they would need further review to determine if control efficiencies are available.

- **CAPCOA White Paper –** this document provides a comprehensive discussion of GHG reduction strategies and specific mitigation measures are listed in Table 16 in Appendix B. The mitigation measures are grouped by emissions source type, such as transportation measures, parking measures, commercial and residential design features, etc. Table 16 also provides other useful information about each

mitigation measure including source of each measure, comments and descriptions about each control measure, etc. Most importantly, for many of the mitigation measures CAPCOA has included an emission reduction score. In most cases, the emission reduction score is given as a range. As a result, further evaluation would be necessary to provide a single more precise emission reduction score or a defensible average. Otherwise, it is likely that the high end of the emission reduction score would be used.

- **CARB -** is actively working to develop and adopt GHG protocols to support the Climate Change Program. CARB is working in collaboration with other agencies and organizations, including the California Climate Action Registry, to adopt consistent and standardized methods to accurately report GHG emissions. There are two kinds of GHG protocols, a reporting protocol and a project protocol. The project protocol may be useful as it sets standards and provides specific guidance to define GHG reduction projects and quantify and report GHG reductions from project activities. Some example protocols include manure management and urban forestry. It is expected that additional protocols will be developed and adopted by CARB. It is also expected that CARB's Scoping Plan may provide guidance on regulatory guidance that could be used to develop GHG emission reduction measures. GHG reduction strategies that may also serve as GHG mitigation measures to be developed by CARB over the next two years are shown in Table 5-1.

**Table 5-1**
California Air Resources Board GHG Emission Reduction Strategies

| Strategy | Description of Strategy |
|---|---|
| Other Light Duty Vehicle Technology | New standards would be adopted to phase in beginning in the 2017 model year |
| Hydrofluorocarbon Reduction | 1) Ban retail sale of HFC in small cans; 2) Require that only low global warming potential (GWP) refrigerants be used in new vehicular systems; 3) Adopt specifications for new commercial refrigeration; 4) Add refrigerant leak-tightness to the pass criteria for vehicular Inspection and Maintenance programs; 5) Enforce federal ban on releasing HFCs. |
| Transportation Refrigeration Units, Off-Road Electrification, Port Electrification | Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification. |
| Manure Management | San Joaquin Valley Rule 4570 (adopted 6/15/06) reduces volatile organic compounds from confined animal facilities through implementation of control options. |
| Alternative Fuels: Biodiesel Blends | CARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel. |

**Table 5-1 (Concluded)**
California Air Resources Board GHG Emission Reduction Strategies

| Strategy | Description of Strategy |
|---|---|
| Alternative Fuels: Ethanol | Increased use of ethanol fuel. |
| Heavy-Duty Vehicle Emission Reduction Measures | Increased efficiency in the design of heavy duty vehicles and an education program for the heavy duty vehicle sector. |
| Reduced Venting and Leaks in Oil and Gas Systems | Rule considered for adoption by the Air Pollution Control Districts for improved management practices. |
| Hydrogen Highway | The California Hydrogen Highway Network (CA H2 Net) is a State initiative to promote the use of hydrogen as a means of diversifying the sources of transportation energy. |
| Achieve 50% Statewide Recycling Goal | Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. According to the California Integrated Waste Management Board, in 2005 the statewide waste diversion rate was 52 percent.[6] |
| Landfill Methane Capture | Install direct gas use or electricity projects at landfills to capture and use emitted methane. |
| Zero Waste - High Recycling | Additional recycling beyond the State's 50% recycling goal. |

- CEC and CPUC – These agencies are actively developing GHG emission reduction strategies that may also be used to develop GHG mitigation measures for specific energy production sources. Examples of CEC and CPUC GHG emission reduction strategies are shown in Table 5-2.

[6] CIWMB, 2007; http://www.ciwmb.ca.gov/LGCentral/Rates/Diversion/2005/Default.htm

**Table 5-2**
GHG Emission Reduction Strategies Implemented by CEC and CPUC

| Strategy | Description of Strategy |
|---|---|
| **ENERGY COMMISSION (CEC)** | |
| Building Energy Efficiency Standards in Place and in Progress | Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings). |
| Appliance Energy Efficiency Standards in Place and in Progress | Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California). |
| Cement Manufacturing | Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry. |
| Municipal Utility Strategies | Includes energy efficiency programs, renewable portfolio standard, combined heat and power, and transitioning away from carbon intensive generation. |
| Alternative Fuels: non-Petroleum Fuels | Increasing the use of non-petroleum fuels in California's transportation sector, as recommended in the CEC's 2003 and 2005 Integrated Energy Policy Reports. |
| **PUBLIC UTILITIES COMMISSION (PUC)** | |
| Accelerated Renewable Portfolio Standard (33 percent by 2020) | The Governor has set a goal of achieving 33 percent renewables in the State's resource mix by 2020. The joint PUC/Energy Commission September 2005 Energy Action Plan II (EAP II) adopts the 33 percent goal. |
| California Solar Initiative | The solar initiative includes installation of 1 million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses, increased use of solar thermal systems to offset the increasing demand for natural gas, use of advanced metering in solar applications, and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule. |
| Investor-Owned Utility | This strategy includes energy efficiency programs, combined heat and power initiative, and electricity sector carbon policy for investor owned utility. |

Other sources of potential GHG emission reduction measures will be evaluated and incorporated, as applicable into any GHG mitigation measure lists developed by the SCAQMD.

## Periodically Review the Interim GHG Significance Threshold

SCAQMD staff will periodically review and revise staff's GHG proposal to incorporate applicable updated information on GHGs and GHG reduction strategies resulting from regulatory requirements or advances in technology. Some areas of the current proposal that may be reevaluated include the tier 3 screening levels, and the tier 4 compliance option 1 GHG reduction target objective. Further, staff will evaluate

whether or not sector based performance standards can be developed for tier 4 compliance option 3.

If a statewide GHG significance threshold is developed by CARB, staff will review that threshold and report to the Governing Board regarding any implementation issues and ways to transition into the recommended GHG significance threshold within six months of formal approval by the CARB Board.

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# APPENDIX A

## WORKING GROUP MEMBERS AND CONTRIBUTORS

## WORKING GROUP MEMBERS AND AFFILIATION:

| | |
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# APPENDIX B

## SUMMARIES OF WORKING GROUP MEETINGS

## WORKING GROUP MEETING #1 (APRIL 30, 2008)

At the first Working Group meeting SCAQMD staff presented the Working Group with a number of policy objectives and design criteria for consideration to establish the framework for developing a GHG significance threshold. Policy objectives include the following concepts. First, the GHG significance threshold should minimize environmental degradation, that is, it should not make impacts worse. To this end, it may be useful to develop a GHG significance threshold that achieves GHG emissions reductions that are consistent with the goals of AB 32 estimated to be approximately 30 percent reduction of GHG emissions from business-as-usual. Although CEQA or a GHG significance threshold established pursuant to CEQA may be useful tools in reducing GHG emissions, they would act in parallel with regulatory requirements, e.g., AB 32, but they do not replace them. As a result, there is no requirement that a GHG significance threshold must reduce GHG emissions consistent with AB 32 or EO S-3-05.

In addition to policy considerations, a number of GHG significance threshold design criteria were also considered. An important consideration in developing a GHG significance threshold is the potential administrative burden it may create on lead agencies through increased resource impacts such as increased costs and staff if the significance threshold is established too low. For example, a zero threshold might result in eliminating or substantially reducing the number of projects that qualify for a categorical exemption, a negative declaration, or a mitigated negative declaration. Other design considerations discussed included establishing a single GHG threshold, such as a "bright line" numerical threshold or multiple thresholds, such as the tiered approaches identified by CAPCOA, etc.

## WORKING GROUP MEETING #2 (MAY 28, 2008)

At the second Working Group meeting, staff presented design criteria recommendations based on the discussion at the first Working Group meeting and correspondence received subsequent to the first Working Group meeting. With regard to analyzing life cycle GHG emissions, staff's initial recommendation was to exclude an analysis of life cycle emissions because life cycle process are not well established. Instead, the GHG emissions analysis should focus on direct and indirect impacts, consistent with current CEQA requirements (CEQA Guidelines §15064(d)). Feedback from the Working Group suggested that a CEQA analysis may be considered deficient without making an effort to conduct a life cycle analysis. Further, if life cycle emissions data are not available, the lead agency should note this consider further analysis speculative and terminate the discussion (CEQA Guidelines §15145).

Another design criteria recommendation made by staff was to take into consideration the administrative burden and resources impacts when establishing a GHG significance threshold. Staff recommended that the GHG significance threshold

should not be set too low, which could result in all projects going through the EIR process. It was pointed out that requiring an EIR for all projects does not necessarily result in more mitigation, no meaningful mitigation may be available for small projects, and it may provide a disincentive for implementing mitigation if the measures are unable to reduce GHG impacts to less than significant.

Other design criteria recommended by staff included analyzing the six Kyoto GHGs, any GHG significance threshold established would be considered interim and would be periodically evaluated and updated as necessary, etc. Staff also introduced the concept of preferred GHG mitigation strategies using a hierarchy from the most to least preferred strategies as shown below.

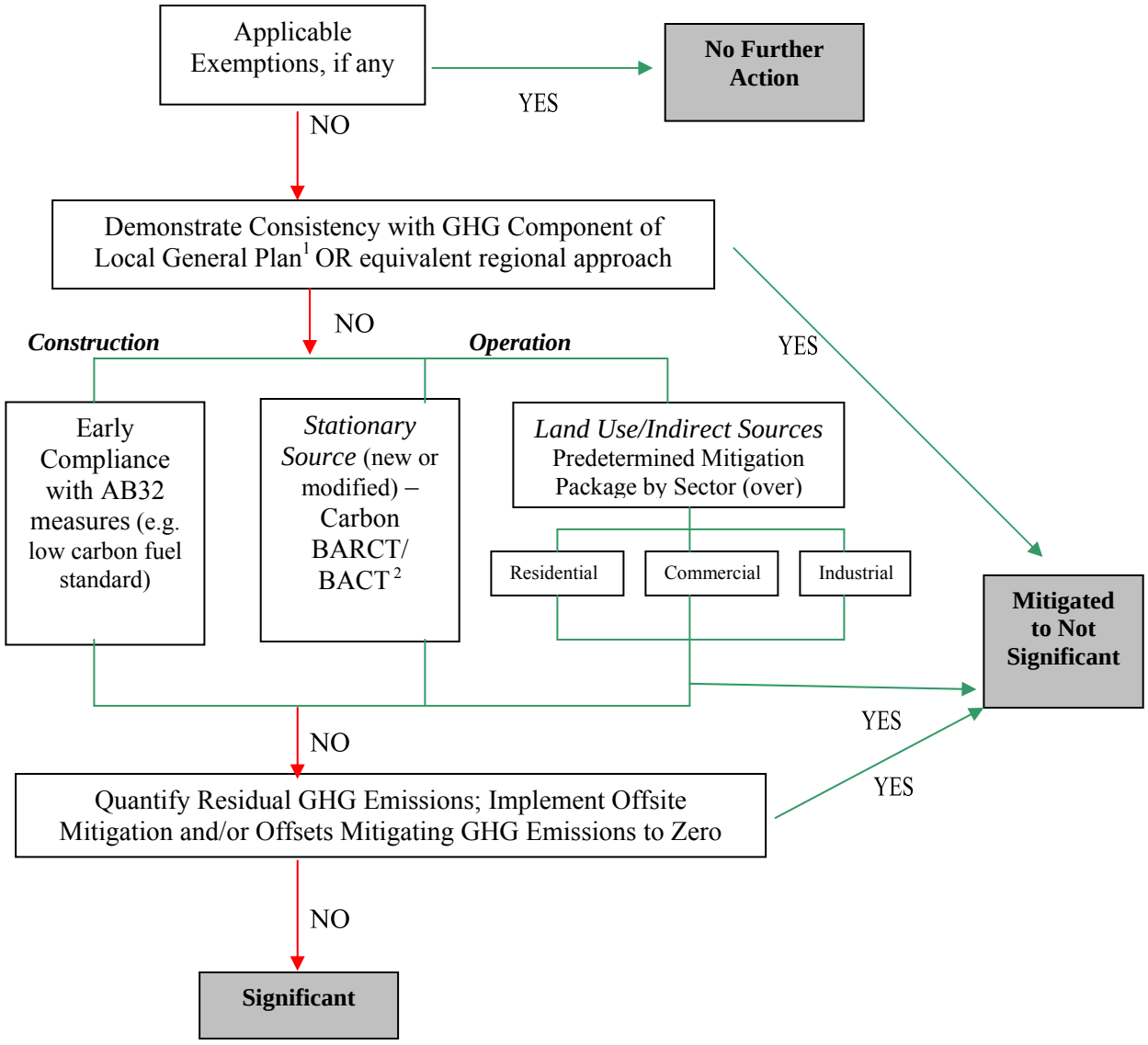
1. Incorporate GHG reduction strategies into project design
2. Mitigate GHGs from other onsite sources for modification projects
3. Mitigate offsite GHG emission reduction projects
4. Mitigate both construction & operational GHG impacts
5. Consider feasible mitigation based on economic factors (cost) pursuant to CEQA Guidelines §15364
6. Purchase acceptable GHG offsets with preference toward GHG reduction projects occurring in-basin or in-state (offset cost a consideration). The following points should be considered:
    a. Offset market still developing, so it is necessary to ensure offsets are obtained from a credible source
    b. Offsets should be provided for at least 10 years of project operation (see SJVAPCD indirect source Rule 9510 §6.2 mitigation requirements)

Finally, SCAQMD staff introduced the initial staff proposal. The initial staff proposal consisted of a tiered approach, similar to CAPCOA's Approach 2 with mandatory GHG mitigation measures. Each tier of this proposal is briefly described in the following bullet points and shown graphically in Figure B-1.

- The first tier consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA. For example, SB 97 specifically exempts a limited number of projects until it expires in 2010. If the project qualifies for an exemption, no further action is required. If the project does not qualify for an exemption, then move to the next tier.

**Figure B-1**
Initial Staff Proposal – Proposed Tiered Approach – May 28, 2008

*Significance determination of Cumulative Impacts from GHG emissions:*




1. Local General Plans, at a minimum, must comply with AB32 reduction goals; have been analyzed under CEQA, and have a certified Final CEQA document; emission estimates approved by CARB or SCAQMD; include a GHG inventory tracking mechanism; and a commitment to remedy the excess emissions if AB32 goals are not met.

2. SCAQMD will work with CAPCOA to develop a list of mitigation measures.

- The second tier consists of determining whether or not the project is consistent with a GHG reduction plan that is part of a local general plan for example. The GHG reduction plan must, at a minimum, comply with AB 32 reduction goals; include emission estimates approved by CARB or SCAQMD, have been analyzed under CEQA, and have a certified Final CEQA document. Further, the GHG reduction plan must include a GHG inventory tracking mechanism; process to monitor progress in achieving GHG emission reduction targets, and a commitment to remedy the excess emissions if AB 32 goals are not met (enforcement). If the proposed project is consistent with the local GHG reduction plan, it is not significant for GHG emissions.

  The concept of consistency with a GHG reduction plan, is similar to the concept of consistency in CEQA Guidelines §15125(d). If the proposed project does not comply with the local GHG reduction plan or no GHG reduction plan has been adopted, then move to the third tier.

- Under the third tier there are three options that can be used to demonstrate that a project would not have significant emissions. The first significance option is early compliance with AB 32 Scoping Plan measures. The second significance option, primarily for stationary source equipment, would be to install carbon best available retrofit control technology (BARCT) or best available control technology (BACT). Carbon BARCT/BACT would be established by the SCAQMD. The third significance option for industrial, commercial, and residential land use projects would be to implement a menu of prescribed mitigation measures. Mitigation measures would be developed for each land use sector by SCAQMD staff. Implementing one of these three options would result in a determination that GHG emission impacts from the proposed project are not significant. If the proposed project is unable to implement any one of these three options or cannot fully implement any option, then it would move to the fourth tier.

- Under the fourth tier, the lead agency would quantify GHG emissions from the project and implement offsite mitigation (GHG reduction projects) or purchase offsets. Under this tier, GHG emission impacts the lead agency would be required to mitigate or offset GHG emissions to zero. If GHG emissions can be offset to zero, GHG emissions from the project are concluded to be insignificant. If GHG impacts cannot be reduced to zero, the project is concluded to be significant for GHGs.

## WORKING GROUP MEETING #3 (JUNE 19, 2008)

Subsequent to Working Group meeting #2, SCAQMD staff received feedback on the initial staff proposal. Issues and concerns raised by the stakeholders on the initial staff proposal were addressed at the third Working Group meeting and are summarized in the following bullet points.

- The staff proposal does not explicitly state any quantitative or qualitative target objectives. If there are no explicit target objectives, how is it possible to determine whether or not a project is insignificant for GHG emissions?

- Concerns were raised regarding the lack of detail relative to the sector-specific mitigation measures and the potentially lengthy lag time between implementing the GHG significance threshold and developing the mitigation measures.

- For most projects, GHG emissions would not need to be calculated as long as the prescribed menu of sector-specific mitigation measures is implemented. Without quantifying GHG emissions and the control efficiencies of the mitigation measures, a project would be vulnerable to a "Fair Argument" that GHG emissions are still significant even after implementing prescribed mitigation measures.

- A CEQA document may be vulnerable in court if control efficiencies of mitigation measures are not identified.

- Is the staff proposal really a zero GHG significance?

Based on Working Group feedback, staff presented revised staff proposal #1, which consisted of a tiered decision tree approach. The components of revised staff proposal #1 are described in the following bullet points and shown graphically in Figure B-2. As shown in Figure B-2, some of the tier components of the revised staff proposal are similar to those in the initial staff proposal.

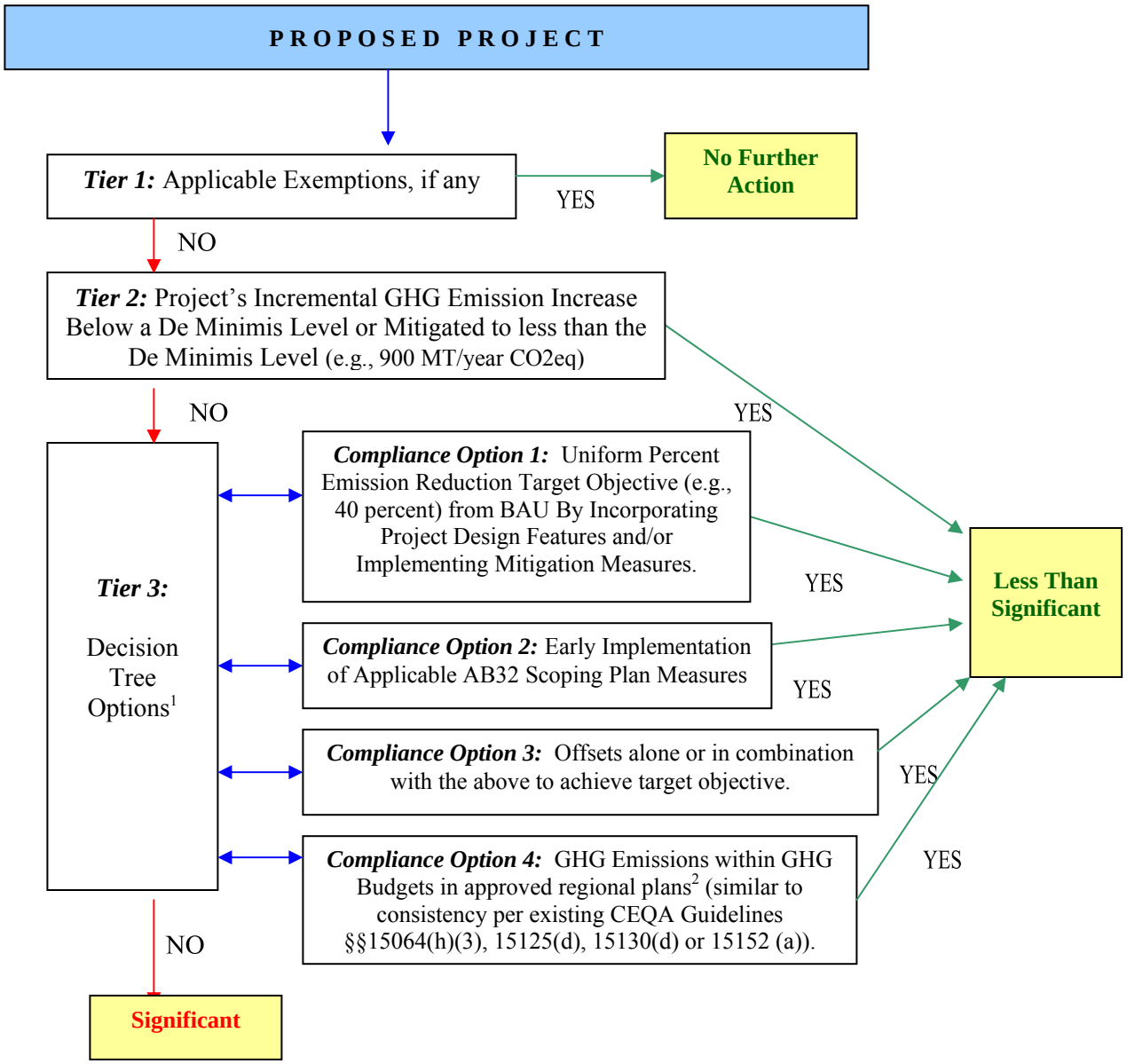
- **Tier 1 –** no change from the initial proposal.

- **Tier 2 –** is a new component of the revised staff proposal. Tier 2 attempts to identify small projects that would not likely contribute to significant cumulative GHG impacts. The de minimis or screening level of 900 metric tons per year is the level that is estimated by CAPCOA to capture 90 percent of the residential units or office space in pending application lists[7]. CAPCOA infers that projects that emit less than 900 metric ton per year would not likely be considered cumulatively considerable. Further, the 900 metric ton per year level would capture 90 percent

[7] Although the CAPCOA White Paper implies that 900 metric tons per year equates to a 90 percent capture rate, there is no explicit information provided in the White Paper that demonstrates this correlation. Indeed, the CAPCOA authors state that 900 metric tons, which represents approximately 50 residential units, corresponds to widely divergent capture rate percentile rankings depending on the project location (see discussion on page 43 of the White Paper). Percentile rankings were based on a survey of four cities in California. A project of 900 metric tons per year representing a 90 percent capture rate appears to be a working assumption for which there appears to be no factual basis. Further, although not explicitly stated, it is assumed that the 900 metric tons were derived using the URBEMIS2007 model. It should be noted that that the URBEMIS2007 model only quantifies CO2 emissions and direct emissions primarily from on-road mobile sources. It does not capture other GHG pollutants or indirect GHG emissions such as emissions from energy

**Figure B-2**
Revised Staff Proposal #1 Tiered Decision Tree Approach – June 19, 2008

***Significance Determination of Cumulative Impacts from GHG Emissions:***




1. Substitution for equivalent reductions allowed.
2. Local General Plans or other local plans local plans that, at a minimum, comply with the overall target objective or the sector-based CARB Scoping Plan; have been analyzed under CEQA, and have a certified Final CEQA document; emission estimates approved by CARB or SCAQMD; include a GHG inventory; tracking mechanism; enforcement; and a commitment to remedy the excess emissions if commitments are not met.

generation, water conveyance, etc. Therefore, it is likely that a 50-unit residential project would actually generate higher GHG emissions than 900 metric tons per year.

of all pending projects, which means that 90 percent of all projects would have to implement GHG reduction measures.

If a project is less than 900 MT/year CO2eq or can mitigate to less than 900 MT/year CO2eq, it would be considered insignificant for GHGs. Projects larger than 900 MT/year CO2eq would move to tier 3.

- Tier 3 Decision Tree Options – consists of four decision tree options to demonstrate that a project is not significant for GHG emissions. The four compliance options are as follows.

  **Compliance Option 1 –** the lead agency would calculate GHG emissions for a project using a business-as-usual (BAU) methodology. Once GHG emissions are calculated, the project proponent would have to incorporate design features into the project and/or implement GHG mitigation measures to demonstrate a 40 percent reduction from BAU. A 40 percent reduction below BAU was selected for the following reason. To comply with the AB 32 requirement of reducing GHG emissions to 1990 levels, an approximately 30 percent reduction from current BAU is necessary.

  Since CEQA is not applicable to all GHG emission sources, i.e., existing projects that are not undergoing expansion or modifications, staff chose a 40 percent reduction below BAU requirement, which goes beyond the target GHG reduction objective of AB 32, but is still a potentially feasible GHG reduction for a variety of different projects.

  **Compliance Option 2 –** this option is the same as the early compliance with AB 32 option in the third tier of the initial staff proposal.

  **Compliance Option 3 –** this option is similar to the fourth tier of the initial staff proposal where GHG emissions would be reduced through offsite GHG reduction projects and/or use of offsets. This compliance option, however, would require offsetting GHG emissions by the same target objective as compliance option 1, that is, 40 percent below BAU instead of reducing GHG emissions to less than the de minimis or screening level.

  **Compliance Option 4 –** this option is the same as the consistency with the greenhouse gas reduction plan component in the second tier of the initial staff proposal.

If the lead agency or project proponent cannot implement any of the compliance options in Tier 3, GHG emissions would be considered significant.

## WORKING GROUP MEETING #4 (JULY 30, 2008)

Subsequent to Working Group meeting #3, SCAQMD staff received feedback on the revised staff proposal #1. Issues and concerns raised by the stakeholders on the initial

staff proposal were addressed at the third Working Group meeting and are summarized in the following bullet points.

- Compliance with a GHG reduction plan should not be a compliance option in Tier 3, but should be its own tier, earlier in the tiering process.

- There is a large disconnect between screening level and remaining emissions under the Tier 4 compliance options. For example, large projects that can reduce GHG emissions by the target objective of 40 percent would do so, which means GHG emissions would not be significant, could have substantially higher emissions than projects with GHG emissions less than the screening level.

- Compliance with a target objective should not be through offsets alone. Because of the uncertainties regarding the validity of offsets, preferred mitigation should consist of actual GHG emission reductions.

- The Tier 3 compliance option 1, GHG emissions reductions from BAU, is not the proper metric for determining significance. How can a lead agency be sure that the projected BAU emissions for a project are not artificially inflated to make it easier to achieve the required target objective?

- The Tier 3 compliance option 1, reducing GHG emission reductions from BAU, could penalize projects in environmentally progressive areas where BAU may be much lower than in other areas, thus, making it more difficult to achieve the target objectives.

Based on Working Group feedback and internal discussions, staff presented revised staff proposal #2, which further refined the previous tiered decision tree approach. The components of revised staff proposal #2 are described in the following bullet points and shown graphically in Figure B-3. As shown in Figure B-3, some of the tier components of the revised staff proposal are similar to those in the initial staff proposal.

- **Tier 1 –** no change from the initial proposal.

- **Tier 2 –** compliance option 4 in Tier 3 has been moved back a stand-alone tier.

- **Tier 3 –** the screening level that was previously Tier 2 has been moved to Tier 3. In response to feedback from the Working Group, the screening level has been increased to 6,500 MT/year CO2eq. The new screening level was derived using the SCAQMD's existing NOx operational threshold as a basis. The daily NOx operational significance threshold, 55 pounds per day was annualized, which results in 10 tons of NOx per year. Using the URBEMIS2007 model, staff initially modeled a mixed-use project that emits just under 10 tons per year to determine what the equivalent CO2 emissions would be. Resulting CO2 emissions from the mixed use project were approximately 6,500 MT/year CO2. To further corroborate the 6,500 MT/year CO2 staff performed 19 modeling runs on a variety

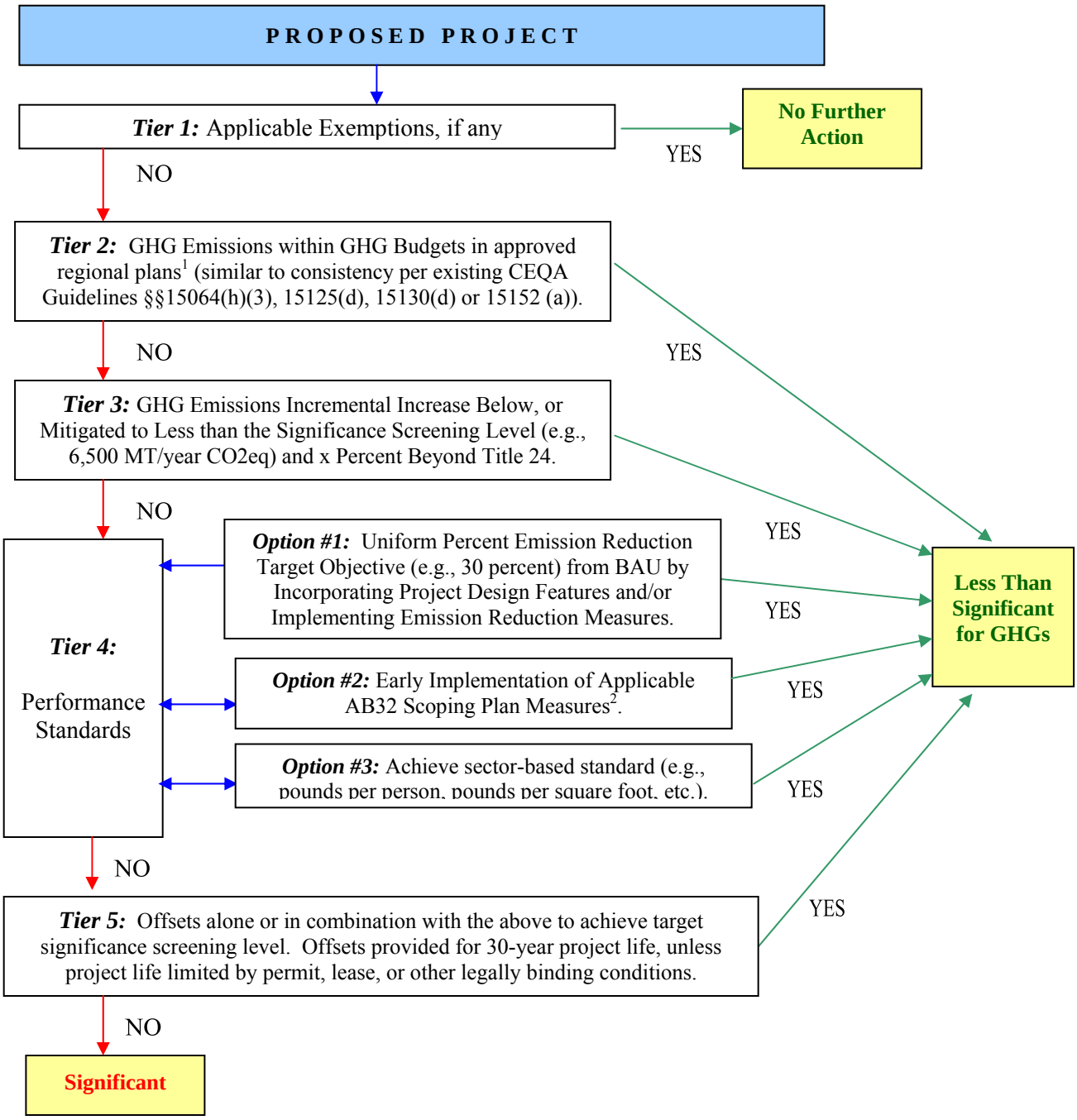
of projects including residential, commercial, industrial, and various combinations of land uses. In addition, since the analysis was an annual analysis, a weighted trip rate was derived for each land use category to obtain a more accurate estimate of trip rates throughout the week. Although the results from the 19 modeling runs were approximately 16 percent higher than staff's original estimate of 6,500 MT/year CO2, 7,304 to 7,723 MT/year CO2, staff continued to recommend the 6,500 MT/year CO2 provides a margin of safety when deriving CO2 emissions based on the annualized NOx level of 10 tons per year and when evaluating different types of land use projects.

Projects with GHG emissions less than the screening level are considered to be small projects, that is, they would not likely be considered cumulatively considerable. However, because of the magnitude of increasing global temperatures from current and future GHG emissions, staff recommended that all projects must implement some measure or measures to contribute to reducing GHG emissions. Therefore, Tier 3 includes a requirement that all projects with GHG emissions less than the screening level must include efficiency components that reduce to a certain percentage beyond the requirements of Title 24 (Part 6, California Code of Regulations), California's energy efficiency standards for residential and nonresidential buildings.

- Tier 4 Performance Standards – Tier 3 from the revised staff proposal #1 has been moved to Tier 4 and renamed.

**Figure B-3**
Proposed Tiered Decision Tree Approach – July 30, 2008

***Significance Determination of Cumulative Impacts from GHG Emissions:***




1. Local General Plans or other local plans local plans that, at a minimum, comply with the overall target objective or the sector-based CARB Scoping Plan; have been analyzed under CEQA, and have a certified Final CEQA document; emission estimates approved by CARB or SCAQMD; include a GHG inventory; tracking mechanism; enforcement; and a commitment to remedy the excess emissions if commitments are not met.
2. Substitution for equivalent reductions allowed.

**Compliance Option 1 –** is essentially the same as the previously recommended, except that the target objective has been changed from reducing GHG emissions 40 percent below BAU to 30 percent below BAU to be more consistent with AB 32 target objectives.

**Compliance Option 2 - –** no change from the previous proposal.

**Compliance Option 3 –** this is a new compliance option and consists of establishing sector-based performance standards. For example, it may be possible to use the 1990 inventory required under AB32 to establish an efficiency standard such as pounds per person, pounds per worker, pounds per square feet, pounds per item manufactured, etc. When calculating GHGs from a project, if they are less than the established efficiency standard the project would not be significant relative to GHG emissions, while projects exceeding the efficiency standard would be significant.

Projects that cannot comply with any of the compliance options in Tier 4 would then move on to Tier 5.

- **Tier 5 –** consists generally of the Tier 3 compliance option 3 from the previous staff proposal. The only difference is that the project proponent would be required to provide offsets for the life of the project, which is defined as 30 years. If the project proponent is unable to obtain sufficient offsets, incorporate design features, or implement GHG reduction mitigation measures, then GHG emissions from the project would be considered significant.

## WORKING GROUP MEETING #5 (AUGUST 27, 2008)

Subsequent to Working Group meeting #3, SCAQMD staff received feedback on the revised staff proposal #2. Issues and concerns raised by the stakeholders on the initial staff proposal were addressed at the third Working Group meeting and are summarized in the following bullet points.

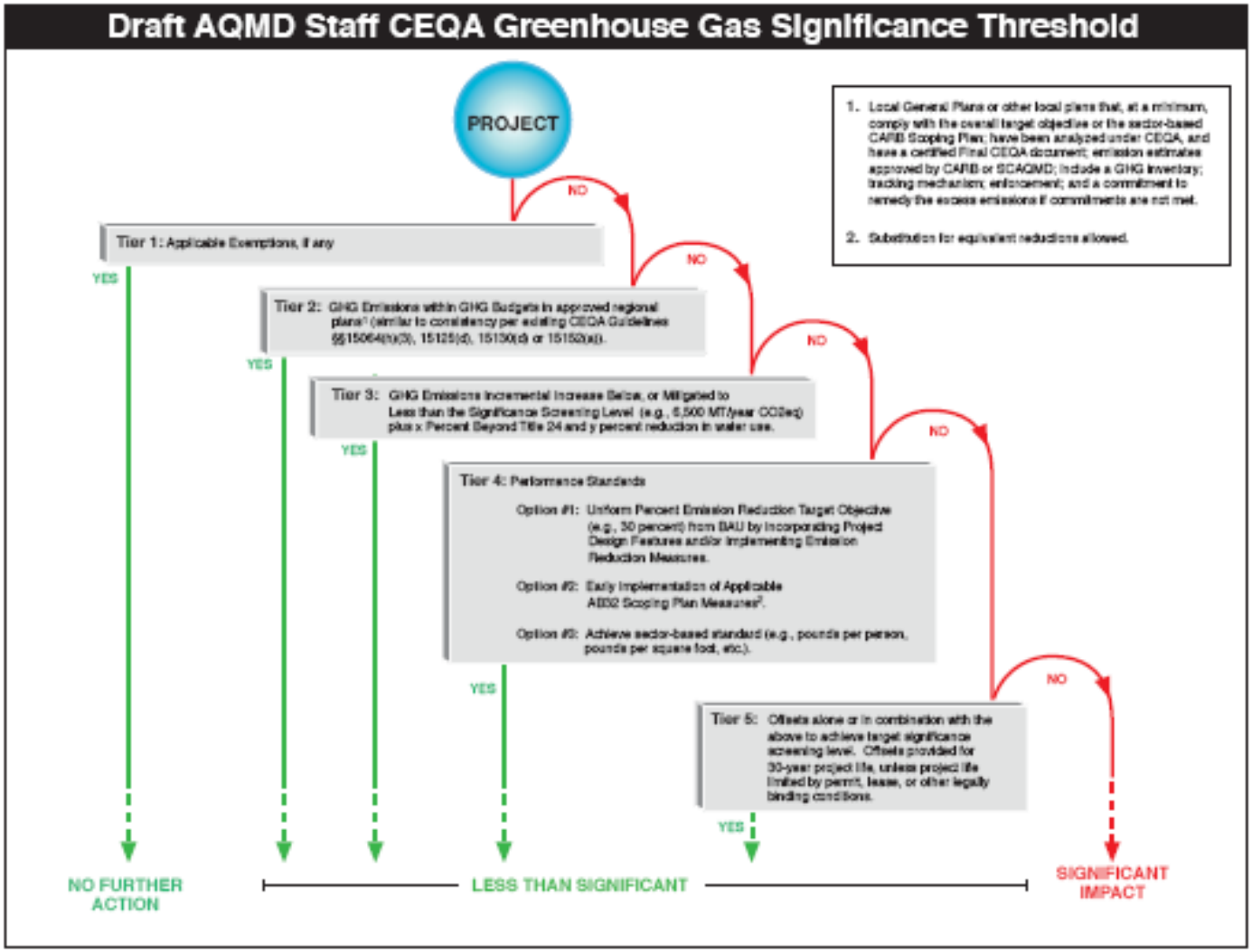
- A recommendation was made to modify the target objective of Tier 5 to be consistent with the target objective of Tier 4 compliance option 1, that is require emissions to be offset 30 percent from BAU rather than offset down to the screening level.

- A Working Group member asked for clarification on the early implementation of applicable AB 32 Scoping Plan measures in Tier 4-Option 2. In addition, a question was asked regarding whether or not this compliance option was applicable after the requirements of AB 32 have become effective.

At Working Group meeting #5, staff presented revised staff proposal #3, which consisted primarily of minor refinements to the previous tiered decision tree approach in revised staff proposal #2. The components of revised staff proposal #3 are shown graphically in Figure B-4.

Aside from changing the graphic layout of the staff proposal to make it easier to understand, revised staff proposal #3 has only one minor modification. A second energy efficiency requirement has been added to the screening level in Tier 3. In addition to requiring projects to go a certain percentage beyond Title 24, projects would also have to reduce by a specified percentage electricity demand from water use, primarily electricity used for water conveyance.

**Figure B-4**
Revised Staff Proposal #3 Tiered Decision Tree Approach – August 27, 2008



# SURVEY OF CEQA DOCUMENTS

# ON GREENHOUSE GAS EMISSIONS

# DRAFT WORK PLAN

**South Coast Air Quality Management District**
**21865 Copley Drive, Diamond Bar, CA 91765-4182**
**(909) 396-2000**

April 22, 2009

# SURVEY OF CEQA DOCUMENTS ON GREENHOUSE GAS EMISSIONS

# WORK PLAN

## A. INTRODUCTION

The following constitutes the Work Plan that will be used to complete the survey of CEQA documents to obtain greenhouse gas (GHG) emissions data on residential, commercial, and mixed use projects that have been evaluated in California Environmental Quality Act (CEQA) documents (including negative declarations and environmental impact reports (EIRs)) within the the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The information in the Work Plan can be used for a number of different purposes, including obtaining air quality and GHG emissions information that decision makers rely upon to approve or deny projects.

## B. OBJECTIVES

The objective of the survey is to collect data on the estimated GHG and opertational NOx emissions for residential, commercial, and mixed use projects that have been evaluated under CEQA for which the SCAQMD is a responsible agency. The information will be used to determine the level of GHG emissions for residential and commercial projects that constitute the $90^{th}$ percentile (for example, $90^{th}$ percentile is 90 percent of known emissions), or other percentile as desired.

## C. PROCEDURES

The following will be completed:

1. Obtain CEQA documents for review. The SCAQMD will provide copies of CEQA documents (e.g., EIRs, Negative Declarations, Mitigated Negative Declarations, etc.) to the consultant, which have been submitted to the SCAQMD for intergovernmental review as a responsible agency. Additional CEQA documents can be obtained and evaluated, depending on time, budget, and sample size required.

2. Explore opportunities to identify and include projects that were exempt under CEQA, including the Building Industry Association's database and databases from local cities or counties regarding exempt projects. If available and quantifiable, GHG emissions will be included in calculation of the significance threshold.

3. Each document will be logged with a tracking number.

## D. DATA COLLECTION

Each document will be reviewed and the following information will be extracted and recorded into an Excel spreadsheet:

- General Project Description (i.e., commercial, residential, etc.). Residential uses will be those that meet the definitions in the First Land Use Screen by URBEMIS (see Attachment 1). Commercial land uses will be those that meet the definition in the Second, Third, Fourth, Fifth and Sixth Land use Screens in URBEMIS (see Attachment 1).

- Determine and report GHG [including carbon dioxide ($CO_2$) and $CO_2$ equivalent ($CO_2eq$)] emissions associated with construction emissions, if provided in the CEQA document.

- Determine (or calculate) and report GHG (including $CO_2$ and $CO_2eq$ emissions) emissions associated with operational emissions, if provided in the CEQA document.

- If GHG emissions were not quantified in the CEQA document for both construction and operational project phases, the CEQA document will be reviewed for the following information in order to estimate GHGs for construction and operations:
  - The type of commercial building (restaurant, office building, strip mall, etc.), square footage, and acreage of project.
  - The number and type of dwelling units (apartment, condominiums, single family dwellings), and acreage of project.
  - Length of construction period.

- Identify the mitigation measures imposed, if any, for air quality impacts due to construction, operation, or GHG emissions.

- Identify the general types of mitigation measures (e.g., standard dust control, URBEMIS measures, CARB/AQMD requirements, etc.) imposed for air quality impacts due to construction, operation, or GHG emissions (e.g., project design features).

## E. EMISSION CALCULATIONS

GHG emission calculations will be conducted for projects in which no GHG emissions were quantified and included in the CEQA document.

- The URBEMIS 2007 model will be run using assumptions for projects without GHG emissions calculations provided in the CEQA document. Construction and operational GHG emissions will be calculated, as applicable.

- $CO_2$, the primary component of GHG emissions, will be based on the URBEMIS2007 model and all associated assumptions. Note that the URBEMIS2007 model does not have the capability of estimating emissions associated with the use of electricity and other similar indirect emission sources.

- As shown in Table 1, $CO_2$ emissions comprise an average of 98.9 percent of the carbon dioxide equivalent ($CO_2eq$) emissions. URBEMIS2007 reports $CO_2$ emissions primarily from mobile sources during operational activities of a project. Therefore, only $CO_2$ emissions will be considered for statistical analysis. Where projects only provide $CO_2eq$ emissions, the $CO_2eq$ emissions will be considered to be $CO_2$ emissions.

**Table 1**
**Comparison of $CO_2$ to $CO_2eq$ Emissions**

| Emission Source | $CO_2$ | $CH_4$ | $N_2O$ | Total $CO_2eq$ |
|---|---|---|---|---|
| $CO_2eq$ Factors[(1)] | 1 | 21 | 310 | |
| **Electricity** | | | | |
| Emission Factor (lbs/MWh)[(2)] | 724.12 | 0.0302 | 0.0081 | 727.27 |
| Percentage | 99.57 | 0.09 | 0.35 | |
| **Natural Gas** | | | | |
| Emission Factor (kg/mmBTU)[(3)] | 53.06 | 0.005 | 0.0001 | 53.20 |
| Percentage | 99.7 | 0.20 | 0.06 | |
| **Gasoline** | | | | |
| Emission Factor (kg/gal)[(4)] | 8.81 | 0.00022 | 0.0005 | 8.97 |
| Percentage | 98.2 | 0.05 | 1.73 | |
| **Diesel** | | | | |
| Emission Factor (kg/gal)[(4)] | 10.15 | 0.00026 | 0.00058 | 10.34 |
| Percentage | 98.2 | 0.05 | 1.74 | |
| | | | | |
| **Average Percentage** | 98.9 | | | |

Emission Factors from California Climate Action Registry General Reporting Protocol (January 2009) Appendix C using [(1)] Table C.1 (universal factors), [(2)] Table C.2 (California factors), [(3)] Table C.7 and C.8 (universal factors), and [(4)] Tables C.3 and C.6 (California factors).

- Indirect GHG emissions for electricity and natural gas consumption will be calculated using the emission factors presented in Table 1 from the California Climate Action Registry (C-CAR) General Reporting Protocol. Residential and commercial electricity and natural gas usage is estimated using the California Energy Commission's California Energy Demand 2008-2018 Staff Revised Forecast (November 2007) and California Commercial End-Use Survey (March 2006). The total statewide residential electricity use projected for 2009 is approximately 95,000 GWh[a] and based on a projected statewide population of 38 million[b], the electricity usage per capita is approximately 2,500 kWh. The US Census Bureau estimates 2.87

[a] Figure 3 (page 14) in CEC California Energy Demand 2008-2018 Staff Revised Forecast
[b] Figure 7 (page 20) in CEC California Energy Demand 2008-2018 Staff Revised Forecast

persons per household in California[c]. Therefore, the residential electricity usage is approximately 7,175 kWh per household. The total statewide residential natural gas use projected for 2009 is 5,122 million therms[d] and based on a projected statewide population of 38 million[e], the natural gas usage per capita is approximately 134.8 therms. Based on 2.87 persons per household, the residential natural gas usage is approximately 387 therms per household. The total statewide commercial electricity use projected for 2009 is approximately 110,000 GWh[f] and based on a projected statewide commercial square footage of 4.9 billion[g], the electricity usage per square foot is approximately 22.4 kWh. The total statewide commercial natural gas usage projected for 2009 is 2,159 million therms[h] and based on a projected statewide commercial square footage of 4.9 billion[i], the natural gas usage per square foot is approximately 0.44 therms.

- Indirect GHG emissions that would be created from electrical use will only be provided for the operational phase of projects since construction activities do not typically use substantial amounts of electricity.

## F. DATA MANAGEMENT

Once GHG emissions have been collected from all available archived CEQA documents reviewed (approximately 280 documents), an emissions distribution curve will be generated for residential, commercial, and mixed use projects.

- The 90$^{th}$ percentile for GHG emissions will be determined for residential, commercial, and mixed use projects, respectively.

- The data will be reviewed and extreme data points, suggesting that incorrect data or calculations are present, will be considered as erroneous and not included in the analysis.

- A report will be prepared that summarizes the data collected, and identifies the 90$^{th}$ percentile (or other percentile as desired) for GHG emissions for the projects evaluated.

[c] US Census Bureau (2000) http://quickfacts.census.gov/qfd/states/06000.html
[d] Figure 41 (page 218) in CEC California Energy Demand 2008-2018 Staff Revised Forecast
[e] Figure 7 (page 20) in CEC California Energy Demand 2008-2018 Staff Revised Forecast
[f] Figure 3 (page 14) in CEC California Energy Demand 2008-2018 Staff Revised Forecast
[g] Chapter 8 (page 149) in CEC California Commercial End-Use Survey
[h] Figure 41 (page 218) in CEC California Energy Demand 2008-2018 Staff Revised Forecast
[i] Chapter 8 (page 149) in CEC California Commercial End-Use Survey

# ATTACHMENT 1

## URBEMIS Land Use Definitions

**Table 1. Land Use Definitions and Percent Worker Commute**

| | Land Use Definition | Percent Worker Commute |
|---|---|---|
| **First Land Use Screen: Residential** | | |
| Single Family Housing | Detached homes on individual lots | N/A |
| Apartments, Low Rise | Buildings with one to three floors | N/A |
| Apartments, Medium Rise | Buildings with four to ten floors | |
| Apartments, High Rise | Buildings with more than ten floors | N/A |
| Condo/Townhouse General | Condos and townhomes in buildings with one or two levels. | N/A |
| Condo/Townhouse High Rise | Condos and townhomes in buildings with 3 or more levels. | N/A |
| Mobile Home Park | Trailers sited and installed on permanent foundations. | N/A |
| Retirement Community | Self-contained villages restricted to adults or senior citizens | N/A |
| Congregate Care (Assisted Living) Facility | One or more multiunit buildings designed for elderly living and may contain dining rooms, medical, and recreational facilities. | N/A |
| **Second Land Use Screen: Educational** | | |
| Day-Care Center | Facilities that care for pre-school children, normally during daytime hours. May also include after-school care for older children. | 5 |
| Elementary School | Generally includes Kindergarten through either 6th or 8th grades. | 20 |
| Junior High School | Includes 7th, 8th, and often 9th grades. | 20 |
| High School | Includes 10th, 11th, and 12th grades and oftentimes 9th grade. | 10 |
| Junior College (2 years) | Most have facilities separate from other land uses and exclusive access points and parking facilities. | 5 |
| University/College (4 years) | Four year and graduate educational institutions. | 6 |
| Library | Public or private facility, which houses books, and includes reading rooms and possibly meeting rooms. | 5 |
| Place of Worship | Building(s) providing public worship services. | 3 |
| Blank (Edit all 5 columns) | Blank commercial land use that can be entered by the URBEMIS2007 user. | 2 |
| **Third Land Use Screen: Recreational** | | |
| City Park | Owned and operated by a city, these facilities can vary widely as to location, type and number of facilities. May including boating, swimming, ball fields, camp sites, and picnic facilities. | |
| Racquet Club | Privately owned facilities with tennis, racquetball, and/or handball courts, exercise rooms, and/or swimming pools and/or weight rooms | 5 |
| Racquet/Health Club | Privately owned facilities with tennis, racquetball, and/or handball courts. | 5 |
| Quality Restaurant | Typically with customer turnover rates of at least one hour. | 8 |
| High Turnover (sit-down Restaurant) | Typically with high customer turnover rates of less than one hour. | 5 |
| Fast Food Restaurant with Drive Through | Includes fast food restaurants with drive through windows, such as McDonald's, Burger King, and Taco Bell. | 5 |
| Fast Food Restaurant without Drive Through | Includes fast food restaurants without drive through windows, such as McDonald's, Burger King, and Taco Bell. | 5 |
| Hotel | Place of lodging providing sleeping accommodations, restaurants, and meeting or convention facilities. | 5 |
| Motel | Place of lodging providing accommodations and often, a restaurant. | 5 |
| **Fourth Land Use Screen: Large Retail** | | |
| Free-Standing Discount Store | Free-standing store with off-street parking, can be part of neighborhood shopping centers. | 2 |
| Free-Standing Discount Superstore | Same as free-standing discount store but also include full service grocery department under the same roof. | 2 |
| Discount Club | Discount/warehouse store whose shoppers pay a membership fee to take advantage of discounted prices. | 2 |

| | Land Use Definition | Percent Worker Commute |
|---|---|---|
| Regional Shopping Center | Integrated group of commercial establishments that are planned, developed, owned, and managed as a unit. | 2 |
| Electronics Superstore | Free-standing warehouse type facilities specializing in the sale of home and vehicle electronic merchandise, as well as TVs, compact disc and cassette tape players, cameras, radios, videos, and general electronic accessories. | 2 |
| Home Improvement Superstore | Free-standing warehouse type facilities specializing in lumber, tools, paint, lighting, wallpaper and paneling, kitchen and bathroom fixtures, lawn equipment, and garden plants and accessories. | 2 |
| **Fifth Land Use Screen: Retail** | | |
| Strip Mall | Neighborhood store complexes with a variety of retail outlets. | 2 |
| Hardware/Paint Store | Stores selling general hardware items and/or paints and supplies. | 2 |
| Supermarket | Free-standing stores selling a complete assortment of food, food preparation and wrapping materials, and household cleaning and servicing items. May also contain money machines, photo centers, pharmacies, and video rental areas. | 2 |
| Convenience market (24 hour) | These markets sell convenience foods, newspapers, etc. and do not have gasoline pumps. (Trip generation rates with gas pumps is approximately 12% higher than without. | 2 |
| Convenience market with gas pumps | These markets sell convenience foods, newspapers, etc. and do have gasoline pumps. | 2 |
| Gasoline/Service Station | Excludes gasoline stations with convenience stores or car washes. | 2 |
| **Sixth Land Use Screen: Commercial** | | |
| Bank (with drive-through) | Banks with one or more drive-up windows. | 2 |
| General Office Building | Houses multiple tenants in a location where affairs of businesses, commercial or industrial organizations or professional persons or firms are conducted. | 35 |
| Office Park | Contain general office buildings and related support services, arranged in a park- or campus-like setting. | 48 |
| Government Office Building | Individual building containing the entire function or simply one agency of a city, county, state, or federal government. | 10 |
| Government (Civic Center) | Group of government buildings connected with pedestrian walkways | 10 |
| Pharmacy/Drugstore with Drive Through | Retail facilities selling prescription and non-prescription drugs. Also typically sell cosmetics, toiletries, medications, stationary, personal care products, limited food products, and general merchandise. These facilities include a drive-through window. | 2 |
| Pharmacy/Drugstore without Drive Through | Retail facilities selling prescription and non-prescription drugs. Also typically sell cosmetics, toiletries, medications, stationary, personal care products, limited food products, and general merchandise. These facilities do not contain a drive-through window. | 2 |
| Medical Office Building | Includes both medical and dental offices buildings that provide diagnoses and outpatient care. Generally operated by one or more private physicians or dentists. | 7 |
| Hospital | Any institution where medical or surgical care is give to non-ambulatory and ambulatory patients and overnight accommodations are provided. | 25 |
| **Seventh Land Use Screen: Industrial** | | |
| Warehouse | Buildings devoted to the storage of materials, also include office and maintenance areas. | 2 |
| General Light Industry | Typical light industrial activities include: print plants, material testing labs, and assemblers of data processing equipment. They employ fewer than 500 persons and tend to be free-standing. | 50 |
| General Heavy Industry | Could also be categorized as manufacturing facilities. However, heavy industrial uses are limited to the production of large items. | 90 |
| Industrial Park | Contain a number of industrial or related facilities and are characterized by a mix of manufacturing, service, and warehouse facilities. May contain highly diversified facilities, a number of small businesses, or one or two dominant industries. | 41.5 |
| Manufacturing | Sites where the primary activity is the conversion of raw materials or parts into finished products. May also included associated office, warehouse, research, and other functions. | 48 |

# Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #12

July 29, 2009

SCAQMD

Diamond Bar, California

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey

- June 15, 2009, SCAQMD staff received OPR CEQA document survey results
  - ✓ Survey performed for years 2007 & 2008
  - ✓ Survey contained a database of 798 projects
  - ✓ EIRs & M/NDs represented in database
- SCAQMD staff evaluated data to:
  - ✓ Eliminate projects without sufficient information
  - ✓ Eliminate duplicate projects (projects where subsequent CEQA documents prepared)
  - ✓ Total remaining projects = 738

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Direct annual CO2 emission rates calculated using URBEMIS (construction emissions amortized over 30 years) – no project design or mitigation measure reductions assumed
- Indirect CO2 emissions calculated for electricity usage per unit for residential & per square foot for commercial
- Indirect CO2 emissions calculated for water-related electricity usage per unit for residential & per square foot for commercial

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Annual residential electricity use derived as follows:
  - ✓1. Identified # of households in 4 district counties from U.S. census data (2005-2007) = 5,375,532
  - ✓2. According to ECDMS, residential electricity in SoCal for 2007 = 39,129 million kWh
  - ✓Divide #2 by #1 = 7,300 kWh/yr/household

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Annual water-related residential electricity use derived as follows:
  - ✓1. Identify # of households in 4 district counties from U.S. census data (2005-2007) = 5,375,532
  - ✓2. Identify total SoCal indoor/outdoor residential water usage = 586,533 MG/yr
  - ✓3. Divide #2 by #1 = 110,000 gal/yr/household
  - ✓4. Identify kWh/MG electricity factor (CEC)
  - ✓5. Calculate indoor/outdoor water related energy usage = 1,280 kWh/yr/household

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Total annual residential electricity use = 7,300 kWh/yr + 1,280 kWh/yr = 8,580 kWhr/yr
- Annual statewide commercial electricity usage = 13.63kWh/ft2 (CEC, 2006)
- Annual water-related commercial electricity usage:
  - ✓ 1. Commercial ft2 for SoCal (2006) = 4,920,114 kft2
  - ✓ 2. Identify total SoCal commercial water usage = 602,915,000 MG/yr
  - ✓ 3.Divide #2 by #1 = 123 gal/yr/ft2
  - ✓ 4. Identify kWh/MG electricity factor (CEC)
  - ✓ 5. Calculate indoor/outdoor water related energy usage = 1.56 kWh/yr/ft2

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Total annual commercial electricity usage = 13.63 kWh/ft2 + 1.56 kWh/yr/ft2 = 15.19 kWh/ft2
- Residential 90% emissions capture rate = 8,580 - 9,151 MTCO2e/yr
- Commercial 90% capture rate = 2,427 – 3,041 MTCO2e/yr

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- SCAQMD database analysis
- 282 projects in the data set, surveyed & categorized according to land use type
- GHG analysis prepared for the following:
  - ✓ 23 residential
  - ✓ 61 commercial
  - ✓ Remaining 198 projects were surveyed, not analyzed because they were mixed use or general/specific plans or had insufficient data to quantify GHG emissions
  - ✓ At the request of the working group, NOE projects excluded

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- SCAQMD residential database results:
  - ✓ Maximum GHG emissions 21,117.3 MTCO2/yr
  - ✓ Minimum GHG emissions 338.8 MTCO2/yr
  - ✓ Average GHG emissions 3,424.1 MTCO2/yr
  - ✓ 90$^{th}$ percentile 6,241 MTCO2/yr
  - ✓ 90$^{th}$ percentile excluding max value 4,866.7 MTCO2/yr

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- SCAQMD commercial database results:
  - ✓Maximum GHG emissions 121,037.0 MTCO2/yr
  - ✓Minimum GHG emissions 0.0
  - ✓Average GHG emissions 10,045.9 MTCO2/yr
  - ✓$90^{th}$ percentile 26,909.1
  - ✓$90^{th}$ percentile excluding max value 25,816.2 MTCO2/yr

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

Comparison of the OPR & SCAQMD Results (MTCO2/Yr)

| | Residential | Commercial |
|---|---|---|
| OPR Database | 8,580 - 9,151 | 2,427 – 3,041 |
| SCAQMD Database | 6,241<br>(5,816.2) | 26,909.1<br>(25,816.2) |

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Database considerations
  - ✓ SCAQMD database is a small subset of the OPR database
  - ✓ Because of the small sample size, SCAQMD database may not be representative
- SCAQMD staff recommends using OPR database only

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Other considerations
  - ✓ Further refinement is underway to derive region-specific GHG emission rates
  - ✓ GHG emission factors based on current energy generation portfolio
  - ✓ Doesn't reflect future Renewable Portfolio Standard
  - ✓ Doesn't reflect current Title 24 energy efficiency standards that will be applied to future projects

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Other considerations
  - ✓ To address Title 24 energy efficiency standards, options include:
    - Use >90$^{th}$ percentile GHG emissions to establish the GHG significance threshold
    - Identify the average age of the housing stock, identify the Title 24 standards in effect at that time (baseline), calculate the increase in energy efficiency from the baseline to the 2009 Title 24 efficiency standards, & apply that increased efficiency standard to the annual energy usage for residential projects
    - Use this approach for commercial?
    - Other approaches

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Other considerations
  - ✓ How to address GHG significance for mixed use projects?
    - Use either residential or commercial GHG significance threshold to apply to mixed use projects
    - Derive a weighted average GHG significance threshold of residential-commercial based on relative CA. inventories
    - Allow lead agencies to derive a weighted average GHG significance threshold based on their projects' residential commercial mixes
    - Other approaches?

# Agenda Item #3 – Recent AG Comments on GHGs for General Plans

- 07/13/09 AG comment letter on Sacramento Co. GP
  - ✓ CEQA document acknowledges impacts of future growth double what is necessary to meet projected demand
  - ✓ County needs to more aggressively mitigate impacts through
    - ➢ Feasible alternatives
    - ➢ Adopt a phased development approach
    - ➢ City-County coordination to optimize growth & reduce GHG emissions

# Agenda Item #3 – Recent AG Comments on GHGs for General Plans *(continued)*

- 07/13/09 AG comment letter on Sacramento Co. GP
  - ✓ Mitigation measures
    - ➢ Efficiency-based performance standards (PFs) acceptable as long as the lead agency is able to show that those PFs , together with all other measures & strategies, are likely to achieve the emission reduction targets
    - ➢ GHG mitigation measures in Climate Action Plan (to be adopted at a later date) should be included in the GP itself
    - ➢ GHG mitigation should also include VMT reduction

# Agenda Items #4, #5, & #6

- Other topics?
- Closing remarks
- Other business
- Next working group meeting scheduled for 8/26/09, 10:00 a.m.

# Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #12

**Wednesday, July 29, 2009**
**SCAQMD, Room GB, 10:00 AM – 12:00 PM**

## 1. Welcome and Introductions

Dr. Steve Smith, Program Supervisor of South Coast Air Quality Management District's (SCAQMD) CEQA Section, called the meeting to order at 10:03 A.M. and asked for self introductions of the working group members and SCAQMD staff. Dr. Smith then presented an overview of the meeting agenda.

## 2. Status of GHG Threshold Analysis for the Residential/Commercial Development Projects

Dr. Smith provided an update regarding the status of the greenhouse gas (GHG) significance threshold analysis for residential/commercial projects. On June 15, 2009, SCAQMD staff received a database from the Office of Planning and Research (OPR) of 798 projects with environmental impact reports (EIRs) and mitigated negative declarations (MNDs) prepared and submitted to OPR in the years 2007 and 2008. Staff reviewed the database and eliminated 60 projects because: they did not provide sufficiently detailed project descriptions (e.g., square footage, units, etc.) were zone changes or modifications, were CEQA documents for redundant projects (i.e., subsequent CEQA documents for the same project), and/or were regional general/master/specific plans. General/master/specific plans documents were specifically excluded because they are comprised of large regional multiuse projects as opposed to individual projects undertaken at the local level.

Direct carbon dioxide (CO2) emissions from the remaining 738 projects were calculated using the Urban Emissions 2007 (URBEMIS2007) model and presented in an Excel spreadsheet. Separate URBEMIS2007 analyses were performed for residential and commercial projects using the model's default factors except that the default trip rate factor was modified to include weighted trip rates to reflect trips during the week days and weekends according to land use type. Mixed use projects were divided into their component parts, either residential or commercial and then incorporated into the appropriate dataset. Indirect CO2 equivalent (CO2e) emissions generated from electricity usage and water-related electricity usage were then calculated for each project in the residential and commercial databases. Natural gas usage is already included the direct emissions from area sources calculated in the URBEMIS2007 model. Electricity and water-related electricity usage emission factors for the residential sector were specific for the southern California region, but only statewide emission factors were available for the commercial sector. The direct and indirect CO2e emissions were then summed for all projects in both the residential and commercial databases to obtain total annual CO2e emissions. The 90 percent capture rate for residential projects ranged from 8,580 metric tons (MT)CO2e/year (210 units) to 9,151 MTCO2e/year (224 units). The 90 percent capture rate for commercial projects ranged from 2,427 MTCO2e/year (126,705 sq. ft.) to 3,041 MTCO2e/year (158,930 sq. ft.).

Dr. Smith provided an update on the 282 projects collected pursuant to the original GHG work plan from SCAQMD's existing intergovernmental review (IGR) database for the years 2007 and 2008. Only 23 residential and 61 commercial projects were evaluated to obtain GHG emission impact results. The remaining 198 projects were not analyzed because they were mixed use (mixed use projects were originally excluded because it was unclear how to evaluate emissions from these projects compared to residential or commercial projects) general/specific plans, or had insufficient data to quantify GHG emissions. The SCAQMD's database resulted in different 90 percent emissions capture rates compared to the results of the OPR database. The 90 percent GHG emissions capture rate for residential projects ranged from 4,866 to 6,241 MTCO2e/year. For commercial projects the 90 percent GHG emissions capture rate ranged from 25,816 to 26,909 MTCO2e/year. Staff noted that the difference in the 90 percent GHG emission capture rates between the SCAQMD database and the OPR database may be an artifact due to the small sample size of the SCAQMD's database. The SCAQMD database is much smaller than the OPR database and, because both databases cover the same timeframe (2007 through 2008), the SCAQMD database is considered to be a subset of the whole OPR database and, therefore, it may not be representative of GHG emissions from projects in the region. Thus, SCAQMD staff recommended using the OPR database only.

Other considerations relative to the database include deriving region-specific GHG emission rates and determining a future energy profile because the GHG emission factors are based on the current energy generation portfolio and does not the renewable fuels portfolio. Further, the GHG emission factors do not reflect the current Title 24 energy efficiency standards that will be applied to future projects.

**Comments/Questions on the Residential/Commercial GHG Significance Threshold Survey**

- A working group member questioned whether southern California included such counties as San Diego or Imperial. Dr. Smith reiterated that the OPR database included only those projects in the four-county region, which constitutes the jurisdiction of the SCAQMD. There may, however, be projects in the non-district portion of San Bernardino County.

- Another working group member questioned whether the OPR database showed an equal distribution of projects between the four counties. No analysis was performed to equalize the number of projects from each district county. Staff felt it was more useful to use the entire OPR database rather than eliminating projects to provide equal distributions of projects by district county.

- A followed up questioning was asked regarding whether there is a distinction between projects in higher density areas compared to lower density rural areas. Such a difference would change the trip rates. Staff responded that the URBEMIS2007 model uses trip rates based on land use type from the ITE Trip Generation Manual. Further, the model has the ability to take density into account when analyzing trips. With regard

to the assumptions used in evaluating OPR data, the single family dwelling was used as a residential unit.

- It was noted that the SCAQMD database included a variety of different sizes and that a potential numerical threshold based on the 90 percent emissions capture rate for residential projects was lower using the SCAQMD database compared to using the OPR database. Staff again noted that the lower capture rate was likely an artifact of the smaller sample size. SCAQMD staff recommended, and the working group agreed, that the larger OPR database should be used because it is a larger survey pool of projects and, as such, would be expected to provide more accurate results. In addition, it is expected that the OPR database includes all of the projects in the SCAQMD's database.

- Since there was a consideration to eliminate projects in the SCAQMD database with high GHG emissions (outliers), why not exclude the outliers in the OPR database? Staff responded that review of the outliers in the SCAQMD's database indicated that there may have been a calculation error or an inappropriate assumption was used, e.g., methane emission factors were substantially higher than the CO2 emission factors, which is not normally the case. Further, including such outlier projects could inappropriately skew the emissions data and the resulting 90 percent emissions capture rate results. Alternatively, the GHG emissions for projects in the OPR database were calculated consistently using the URBEMIS model based on project characteristics provided by OPR.

- One working group member asked why there was a difference in the original number of projects in the database that OPR provided, 798 projects, compared to the number or projects analyzed by staff, 738 projects. Staff responded that the original OPR database was evaluated before any analysis was performed and projects were eliminated because of lack of data; the project consisted of a zone change; or it consisted of a specific, master, or general plan. Eliminating these projects reduced the original database from 798 projects to 738 projects. The OPR database was then divided between residential and commercial projects. Mixed use projects were divided according to their residential and commercial features (i.e., number of residential units and commercial square footage). Projects consisting of, or including offices were excluded from the revised OPR database. The revised OPR database, therefore, consisted of two new sub-databases, 524 residential projects and 266 commercial projects, totaling 780 projects.

- One working group member suggested caution using California Energy Commission (CEC) data because the electricity usage factors change throughout the region. Staff agreed that using the CEC factors may not be representative for all areas. Further, if available, local electricity usage would be incorporated into the analysis.

- A follow-up question was asked regarding why the mixed use projects were separated into their component residential and commercial components and considered as two separate projects. GHG emissions calculated from separated mixed use projects do not accurately represent the individual projects because there is any economy of scale when building mixed use projects, e.g., fewer vehicle trips and/or shorter trip lengths, etc. As

a result, mixed use projects would be expected to generate lower GHG emissions than the sum of their residential and commercial parts. Since the current trend in land use projects is for mixed use projects, which should be encouraged, creating two separate databases may discourage, to a certain extent, development of future mixed use projects. It was suggested that SCAQMD staff combine the residential and commercial sub-databases into a single database and establish a single GHG significance threshold. Staff agreed to perform the analysis using a database consisting of residential and commercial database. The database would also include the mixed use projects as single projects, not split into their component parts.

## 3. Recent Attorney General's Comments on GHGs for General Plans

On July 13, 2009, the California Attorney General's (AG) Office submitted a comment letter to the County of Sacramento (County) regarding its General Plan. The comment letter noted that the CEQA document analyzed the impacts of future growth using the assumption that future growth would be twice as much as would be necessary to meet projected future demand. However, the AG's comment letter noted that the County needs to more aggressively mitigate impacts through: feasible alternatives, adoption of a phased development approach, and city-county coordination to optimize growth and reduce GHG emissions. With regard to mitigation measures, efficiency-based performance standards are acceptable as long as the lead agency is able to show that those performance standards, together with all other measures and strategies, are likely to achieve the emission reduction targets in the General Plan. In addition, the AG's letter recommended that the GHG mitigation measures in the Climate Action Plan to be developed should be included in the General Plan and should demonstrate a reduction in vehicle miles traveled (VMT).

**Comments on Attorney General's Comment Letter**

- One working group member noted that the General Plan update is a good time to include a GHG emission reduction element.

- A second working group member agreed stating, "substantial evidence" required by CEQA is best proven through General Plan compliance.

- A comment was made that if the current results of the analysis are used to establish numerical thresholds, they do not fulfill the "substantial evidence" test. Further, if the current results are used as numerical thresholds a large number of projects would fall under such thresholds and would not be required to implement measures to reduce GHG emissions. All projects should be subject to some kind of GHG reduction requirement (or performance standard). Staff responded that one option could be similar to an option being considered by by Bay Area AQMD that requires all projects to comply with a GHG reduction performance standard based on the size of the projects, with projects below a certain size being required to reduce GHG emissions by five percent. However, if all projects must incorporate GHG reduction measures to reduce GHG emissions by a certain percent, it would be more appropriate to establish a

rule, regulation or state law similar to Title 24 requirements, which would be applied to existing and new projects over time.

**4. General Comments**

- A question was asked regarding whether or not the SCAQMD is coordinating its GHG significance threshold development process with similar efforts by other air districts. Staff is monitoring GHG significance threshold proposals currently in progress by other air districts through CAPCOA and directly with some of the other air districts. However, it is not necessarily expected that SCAQMD staff will develop the same or similar thresholds as other districts or use the same methodologies to develop thresholds. Staff reiterated, however, that the best approach would be statewide GHG threshold(s) developed at the state level.

- A working group member asked when staff anticipates taking a GHG significance threshold proposal for residential and commercial projects to the Governing Board for adoption. Staff responded that the tentative schedule is to take significance threshold(s) for residential and commercial projects to the Board for consideration in fall 2009.

- A follow-up question was asked regarding what the GHG significance threshold would "look like?" Although there was initial reluctance on staff's part to develop a numerical GHG significance threshold, SCAQMD's staff's tiered approach recommendation, which includes a numerical threshold (Tier 3) appeared to be an acceptable proposal by most stakeholders because it requires a quantitative GHG analysis for all nonexempt projects in order to justify the significance determination, which may then trigger mitigation requirements, consistent with current CEQA requirements.

- A second follow-up question was asked regarding whether or not those projects below the numerical significance threshold would still be required to comply with some kind of performance standard (e.g., percent reduction.). Staff responded that staff's currently recommended tiered approach does not include a requirement for all projects to reduce GHG emissions by a certain percent and reiterated that a rule, regulation, or statewide law would be more appropriate to obtain GHG emission reductions from all projects.

- From a "legal perspective," one working group member expressed the concern that a numerical threshold could be construed as a de minimus level, which is not allowed under CEQA. Any numerical GHG significance threshold must be legally defensible. In response, a second working group member suggested that staff perform a review and develop criteria for what would be a legally defensible approach for developing a numerical GHG significance threshold.

- A working group member believed a 90 percent emission capture rate was not an appropriate cut-off because projects below that level (e.g., 210 residential units) are still large projects that should be required to reduce GHG emissions "given the context of the GHG problem." A possible solution was suggested that using a higher emissions

capture rate or, alternatively, using a project size capture rate could be the basis for establishing a lower numerical threshold. This approach may be more legally defensible and less vulnerable to a "fair argument" legal standard.

- One working group member reminded the working group of the importance in accurately calculating GHG emissions (i.e., what sources should be considered when quantifying GHG emissions from a project). Further, since the URBEMIS model is currently the primary tool used to quantify GHG emissions (and construction and operational emissions), it needs to be updated to provide the most accurate method of quantifying GHG emissions. Staff agreed that the model needs to be updated to more accurately quantify GHG emissions. A scope of work has been drafted to revise the GHG component to more accurately quantify GHG emissions. There are, however, some issues that need to be resolved before the model can be updated. Another working group member agreed that more accurate quantification of GHG emissions is necessary, noting that if GHG emissions are not accurately calculated there may be problems determining when mitigation measures should be imposed.

- A follow-up concern was expressed that the assumption that all trips are new trips does not accurately reflect the real world situation. For example, trips associated with new residential units are not necessarily new trips, but may actually be displaced trips that existed somewhere else. In this situation, staff recommends that projects should to be evaluated on a case-by-case basis and, if there is enough evidence to support the assumption that trips generated by a new projects are displaced, then this assumption could be used in the analysis.

**5. Other Topics**

None.

**6. Closing Remarks**

The next meeting is scheduled for August 26, 2009 in meeting room GB at 10:00 AM.

**7. Other Business**

None.

**MEMBERS PRESENT (14)**

James Arnone – Latham & Watkins – *on conference call*
Debbie Stevens – Refineries
Doug Feremenga – San Bernardino County Land Use Planning Department
Patrick Griffith for Greg Adams – City of Los Angeles Bureau of Sanitation
Michael Hendrix – Association of Environmental Professionals (AEP)
Shari Libicki – Green Developers Coalition
Clayton Miller – Construction Industry Air Quality Coalition (CIAQC)
Peter Okurowski – Pillsbury Law– *on conference call*

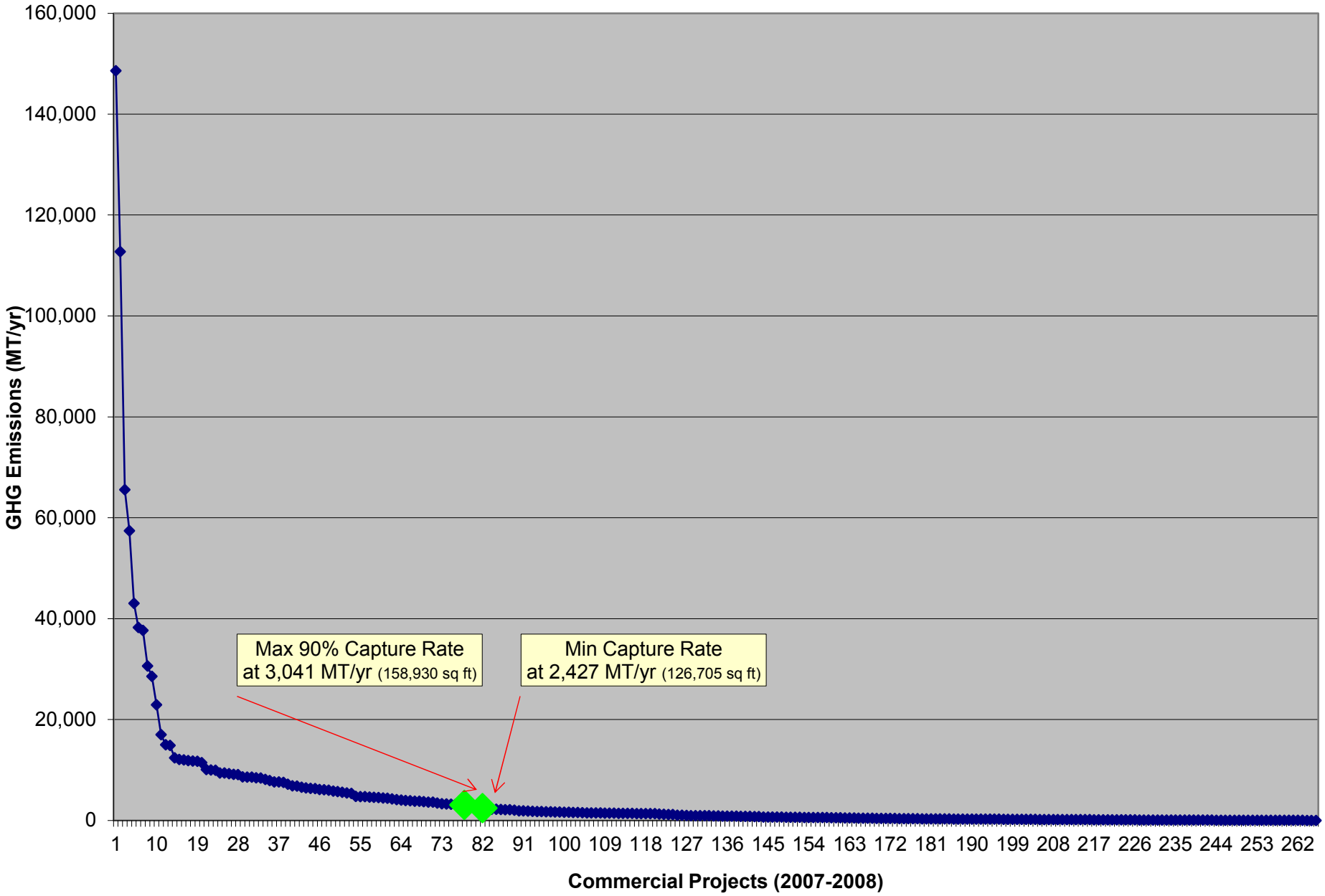
Bill Piazza – Los Angeles Unified School District (LAUSD)
Janill Richards –Attorney General's Office – *on conference call*
Matt Vespa – Center for Biological Diversity (CBD) – *on conference call*
Carla Walecka – Realtors Committee on Air Quality (RCAQ)
Lee Wallace – Sempra Energy Utilities
Michael Wang for Cathy Reheis-Boyd – Western State Petroleum Association (WSPA)

**OTHERS PRESENT (8)**

Lilia Barker – LADWP - – *on conference call*
Marcia Baverman for Debbie Stevens – Environmental Audit, Inc.
Adam Moke – City of Los Angeles Bureau of Sanitation
Danielle Morone – Gatzke, Dillon & Balance, LLP – *on conference call*
Haseeb Qureshi – Urban Crossroads
Greg Tholen – Bay Area Air Quality Management District – *on conference call*
Christina Tran – LA County Planning – *on conference call*
Suzanne Wilson – Public Utilities Department

**AQMD STAFF PRESENT (8)**

Elaine Chang – Deputy Executive Officer
Steve Smith – Program Supervisor
Daniel Garcia – Air Quality Specialist
Jeff Inabinet – Air Quality Specialist
James Koizumi – Air Quality Specialist
Mike Krause – Air Quality Specialist
Gordon Mize – Air Quality Specialist
Barbara Radlein – Air Quality Specialist


GHG Emissions from 266 Commercial Projects
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
GHG Emissions (MT/yr)
Max 90% Capture Rate
at 3,041 MT/yr (158,930 sq ft)
Min Capture Rate
at 2,427 MT/yr (126,705 sq ft)
1 10 19 28 37 46 55 64 73 82 91 100 109 118 127 136 145 154 163 172 181 190 199 208 217 226 235 244 253 262
Commercial Projects (2007-2008)

| | Project ID# | Comm size in Sq.Feet | Cumulative Sq ft | # of project capture rate | ft2 capture rate | Direct CO2 (MT/yr)[1] | Total Annual Electricity Usage[2] (15.19kWh/ft2, 0.01519MW/ft2) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 606 | 7,772,500 | 7772500.00 | 0% | 12% | 89,695 | 118,064 | 58,896 | 148,591 |
| 2 | 604 | 5,897,715 | 13670215.00 | 1% | 22% | 68,060 | 89,586 | 44,690 | 112,750 |
| 3 | 53 | 3,430,000 | 17100215.00 | 1% | 27% | 39,582 | 52,102 | 25,991 | 65,573 |
| 4 | 24 | 3,002,848 | 20103063.00 | 2% | 32% | 34,653 | 45,613 | 22,754 | 57,407 |
| 5 | 31 | 2,250,946 | 22354009.00 | 2% | 36% | 25,976 | 34,192 | 17,057 | 43,033 |
| 6 | 98 | 2,000,000 | 24354009.00 | 2% | 39% | 23,080 | 30,380 | 15,155 | 38,235 |
| 7 | 178 | 1,971,090 | 26325099.00 | 3% | 42% | 22,746 | 29,941 | 14,936 | 37,682 |
| 8 | 144 | 1,600,000 | 27925099.00 | 3% | 45% | 18,464 | 24,304 | 12,124 | 30,588 |
| 9 | 12 | 1,495,000 | 29420099.00 | 3% | 47% | 17,252 | 22,709 | 11,328 | 28,581 |
| 10 | 100 | 1,200,000 | 30620099.00 | 4% | 49% | 13,848 | 18,228 | 9,093 | 22,941 |
| 11 | 54 | 889,200 | 31509299.00 | 4% | 51% | 10,261 | 13,507 | 6,738 | 16,999 |
| 12 | 311 | 785,000 | 32294299.00 | 5% | 52% | 9,059 | 11,924 | 5,948 | 15,007 |
| 13 | 16 | 778,500 | 33072799.00 | 5% | 53% | 8,984 | 11,825 | 5,899 | 14,883 |
| 14 | 407 | 650,000 | 33722799.00 | 5% | 54% | 7,501 | 9,874 | 4,925 | 12,426 |
| 15 | 466 | 632,000 | 34354799.00 | 6% | 55% | 7,293 | 9,600 | 4,789 | 12,082 |
| 16 | 408 | 627,200 | 34981999.00 | 6% | 56% | 7,238 | 9,527 | 4,753 | 11,991 |
| 17 | 443 | 620,000 | 35601999.00 | 6% | 57% | 7,155 | 9,418 | 4,698 | 11,853 |
| 18 | 28 | 616,000 | 36217999.00 | 7% | 58% | 7,109 | 9,357 | 4,668 | 11,776 |
| 19 | 61 | 613,000 | 36830999.00 | 7% | 59% | 7,074 | 9,311 | 4,645 | 11,719 |
| 20 | 219 | 600,000 | 37430999.00 | 8% | 60% | 6,924 | 9,114 | 4,547 | 11,471 |
| 21 | 207 | 526,800 | 37957799.00 | 8% | 61% | 6,079 | 8,002 | 3,992 | 10,071 |
| 22 | 352 | 522,720 | 38480519.00 | 8% | 62% | 6,032 | 7,940 | 3,961 | 9,993 |
| 23 | 35 | 520,000 | 39000519.00 | 9% | 63% | 6,001 | 7,899 | 3,940 | 9,941 |
| 24 | 248 | 491,860 | 39492379.00 | 9% | 64% | 5,676 | 7,471 | 3,727 | 9,403 |
| 25 | 39 | 491,000 | 39983379.00 | 9% | 64% | 5,666 | 7,458 | 3,721 | 9,387 |
| 26 | 95 | 484,265 | 40467644.00 | 10% | 65% | 5,588 | 7,356 | 3,670 | 9,258 |
| 27 | 6 | 477,142 | 40944786.00 | 10% | 66% | 5,506 | 7,248 | 3,616 | 9,122 |
| 28 | 397 | 475,757 | 41420543.00 | 11% | 67% | 5,490 | 7,227 | 3,605 | 9,095 |
| 29 | 59 | 452,400 | 41872943.00 | 11% | 67% | 5,221 | 6,872 | 3,428 | 8,649 |
| 30 | 297 | 450,000 | 42322943.00 | 11% | 68% | 5,193 | 6,836 | 3,410 | 8,603 |
| 31 | 332 | 448,969 | 42771912.00 | 12% | 69% | 5,181 | 6,820 | 3,402 | 8,583 |
| 32 | 43 | 441,709 | 43213621.00 | 12% | 69% | 5,097 | 6,710 | 3,347 | 8,444 |
| 33 | 583 | 438,438 | 43652059.00 | 12% | 70% | 5,060 | 6,660 | 3,322 | 8,382 |
| 34 | 62 | 426,038 | 44078097.00 | 13% | 71% | 4,916 | 6,472 | 3,228 | 8,145 |
| 35 | 580 | 414,000 | 44492097.00 | 13% | 72% | 4,778 | 6,289 | 3,137 | 7,915 |
| 36 | 675 | 400,000 | 44892097.00 | 14% | 72% | 4,616 | 6,076 | 3,031 | 7,647 |
| 37 | 99 | 400,000 | 45292097.00 | 14% | 73% | 4,616 | 6,076 | 3,031 | 7,647 |
| 38 | 78 | 393,400 | 45685497.00 | 14% | 73% | 4,540 | 5,976 | 2,981 | 7,521 |
| 39 | 51 | 374,513 | 46060010.00 | 15% | 74% | 4,322 | 5,689 | 2,838 | 7,160 |
| 40 | 63 | 358,881 | 46418891.00 | 15% | 75% | 4,141 | 5,451 | 2,719 | 6,861 |
| 41 | 586 | 356,000 | 46774891.00 | 15% | 75% | 4,108 | 5,408 | 2,698 | 6,806 |
| 42 | 56 | 344,328 | 47119219.00 | 16% | 76% | 3,974 | 5,230 | 2,609 | 6,583 |
| 43 | 494 | 336,233 | 47455452.00 | 16% | 76% | 3,880 | 5,107 | 2,548 | 6,428 |
| 44 | 349 | 331,974 | 47787426.00 | 17% | 77% | 3,831 | 5,043 | 2,516 | 6,347 |
| 45 | 525 | 330,255 | 48117681.00 | 17% | 77% | 3,811 | 5,017 | 2,503 | 6,314 |
| 46 | 404 | 320,000 | 48437681.00 | 17% | 78% | 3,693 | 4,861 | 2,425 | 6,118 |
| 47 | 176 | 318,000 | 48755681.00 | 18% | 78% | 3,670 | 4,830 | 2,410 | 6,079 |
| 48 | 735 | 314,288 | 49069969.00 | 18% | 79% | 3,627 | 4,774 | 2,382 | 6,008 |
| 49 | 666 | 303,000 | 49372969.00 | 18% | 79% | 3,497 | 4,603 | 2,296 | 5,793 |
| 50 | 514 | 300000 | 49672969.00 | 19% | 80% | 3,462 | 4,557 | 2,273 | 5,735 |

| | Project ID# | Comm size in Sq.Feet | Cumulative Sq ft | # of project capture rate | ft2 capture rate | Direct CO2 (MT/yr)[1] | Total Annual Electricity Usage[2] (15.19kWh/ft2, 0.01519MW/ft2) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 51 | 454 | 291,886 | 49964855.00 | 19% | 80% | 3,368 | 4,434 | 2,212 | 5,580 |
| 52 | 18 | 283,925 | 50248780.00 | 20% | 81% | 3,276 | 4,313 | 2,151 | 5,428 |
| 53 | 330 | 280,000 | 50528780.00 | 20% | 81% | 3,231 | 4,253 | 2,122 | 5,353 |
| 54 | 33 | 250,000 | 50778780.00 | 20% | 82% | 2,885 | 3,798 | 1,894 | 4,779 |
| 55 | 641 | 246,217 | 51024997.00 | 21% | 82% | 2,841 | 3,740 | 1,866 | 4,707 |
| 56 | 90 | 245,600 | 51270597.00 | 21% | 82% | 2,834 | 3,731 | 1,861 | 4,695 |
| 57 | 358 | 240,966 | 51511563.00 | 21% | 83% | 2,781 | 3,660 | 1,826 | 4,607 |
| 58 | 186 | 240,000 | 51751563.00 | 22% | 83% | 2,770 | 3,646 | 1,819 | 4,588 |
| 59 | 317 | 236,109 | 51987672.00 | 22% | 84% | 2,725 | 3,586 | 1,789 | 4,514 |
| 60 | 19 | 233,000 | 52220672.00 | 23% | 84% | 2,689 | 3,539 | 1,766 | 4,454 |
| 61 | 106 | 229,300 | 52449972.00 | 23% | 84% | 2,646 | 3,483 | 1,738 | 4,384 |
| 62 | 102 | 221,982 | 52671954.00 | 23% | 85% | 2,562 | 3,372 | 1,682 | 4,244 |
| 63 | 374 | 216,410 | 52888364.00 | 24% | 85% | 2,497 | 3,287 | 1,640 | 4,137 |
| 64 | 423 | 210,000 | 53098364.00 | 24% | 85% | 2,423 | 3,190 | 1,591 | 4,015 |
| 65 | 342 | 206,000 | 53304364.00 | 24% | 86% | 2,377 | 3,129 | 1,561 | 3,938 |
| 66 | 7 | 205,000 | 53509364.00 | 25% | 86% | 2,366 | 3,114 | 1,553 | 3,919 |
| 67 | 400 | 200,000 | 53709364.00 | 25% | 86% | 2,308 | 3,038 | 1,516 | 3,824 |
| 68 | 17 | 200,000 | 53909364.00 | 26% | 87% | 2,308 | 3,038 | 1,516 | 3,824 |
| 69 | 81 | 193,637 | 54103001.00 | 26% | 87% | 2,235 | 2,941 | 1,467 | 3,702 |
| 70 | 94 | 190,803 | 54293804.00 | 26% | 87% | 2,202 | 2,898 | 1,446 | 3,648 |
| 71 | 635 | 190,000 | 54483804.00 | 27% | 88% | 2,193 | 2,886 | 1,440 | 3,632 |
| 72 | 633 | 180,000 | 54663804.00 | 27% | 88% | 2,077 | 2,734 | 1,364 | 3,441 |
| 73 | 69 | 173,157 | 54836961.00 | 27% | 88% | 1,998 | 2,630 | 1,312 | 3,310 |
| 74 | 164 | 171,000 | 55007961.00 | 28% | 88% | 1,973 | 2,597 | 1,296 | 3,269 |
| 75 | 507 | 168,000 | 55175961.00 | 28% | 89% | 1,939 | 2,552 | 1,273 | 3,212 |
| 76 | 192 | 166,016 | 55341977.00 | 29% | 89% | 1,916 | 2,522 | 1,258 | 3,174 |
| 77 | 444 | 162,620 | 55504597.00 | 29% | 89% | 1,877 | 2,470 | 1,232 | 3,109 |
| **78** | **455** | **158,930** | **55663527.00** | **29%** | **90%** | **1,837** | 2,414 | **1,204** | **3,041** |
| 79 | 138 | 139,600 | 55803127.00 | 30% | 90% | 1,614 | 2,121 | 1,058 | 2,671 |
| 80 | 241 | 134,563 | 55937690.00 | 30% | 90% | 1,555 | 2,044 | 1,020 | 2,575 |
| 81 | 77 | 130,000 | 56067690.00 | 30% | 90% | 1,503 | 1,975 | 985 | 2,488 |
| **82** | **419** | **126,705** | **56194395.00** | **31%** | **90%** | **1,467** | 1,925 | **960** | **2,427** |
| 83 | 760 | 116,756 | 56311151.00 | 31% | 91% | 1,350 | 1,774 | 885 | 2,234 |
| 84 | 267 | 115,632 | 56426783.00 | 32% | 91% | 1,337 | 1,756 | 876 | 2,213 |
| 85 | 296 | 114,765 | 56541548.00 | 32% | 91% | 1,327 | 1,743 | 870 | 2,196 |
| 86 | 8 | 113,573 | 56655121.00 | 32% | 91% | 1,313 | 1,725 | 861 | 2,173 |
| 87 | 558 | 111,000 | 56766121.00 | 33% | 91% | 1,283 | 1,686 | 841 | 2,124 |
| 88 | 789 | 110138 | 56876259.00 | 33% | 91% | 1,273 | 1,673 | 835 | 2,108 |
| 89 | 794 | 105,385 | 56981644.00 | 33% | 92% | 1,218 | 1,601 | 799 | 2,017 |
| 90 | 45 | 100,000 | 57081644.00 | 34% | 92% | 1,156 | 1,519 | 758 | 1,914 |
| 91 | 701 | 98,587 | 57180231.00 | 34% | 92% | 1,140 | 1,498 | 747 | 1,887 |
| 92 | 72 | 95,832 | 57276063.00 | 35% | 92% | 1,108 | 1,456 | 726 | 1,834 |
| 93 | 380 | 93,425 | 57369488.00 | 35% | 92% | 1,080 | 1,419 | 708 | 1,788 |
| 94 | 696 | 90,978 | 57460466.00 | 35% | 92% | 1,052 | 1,382 | 689 | 1,741 |
| 95 | 590 | 90,900 | 57551366.00 | 36% | 93% | 1,051 | 1,381 | 689 | 1,739 |
| 96 | 728 | 90,000 | 57641366.00 | 36% | 93% | 1,040 | 1,367 | 682 | 1,722 |
| 97 | 41 | 89,900 | 57731266.00 | 36% | 93% | 1,039 | 1,366 | 681 | 1,720 |
| 98 | 484 | 87,635 | 57818901.00 | 37% | 93% | 1,013 | 1,331 | 664 | 1,677 |
| 99 | 36 | 86,386 | 57905287.00 | 37% | 93% | 998 | 1,312 | 655 | 1,653 |
| 100 | 612 | 85,496 | 57990783.00 | 38% | 93% | 988 | 1,299 | 648 | 1,636 |

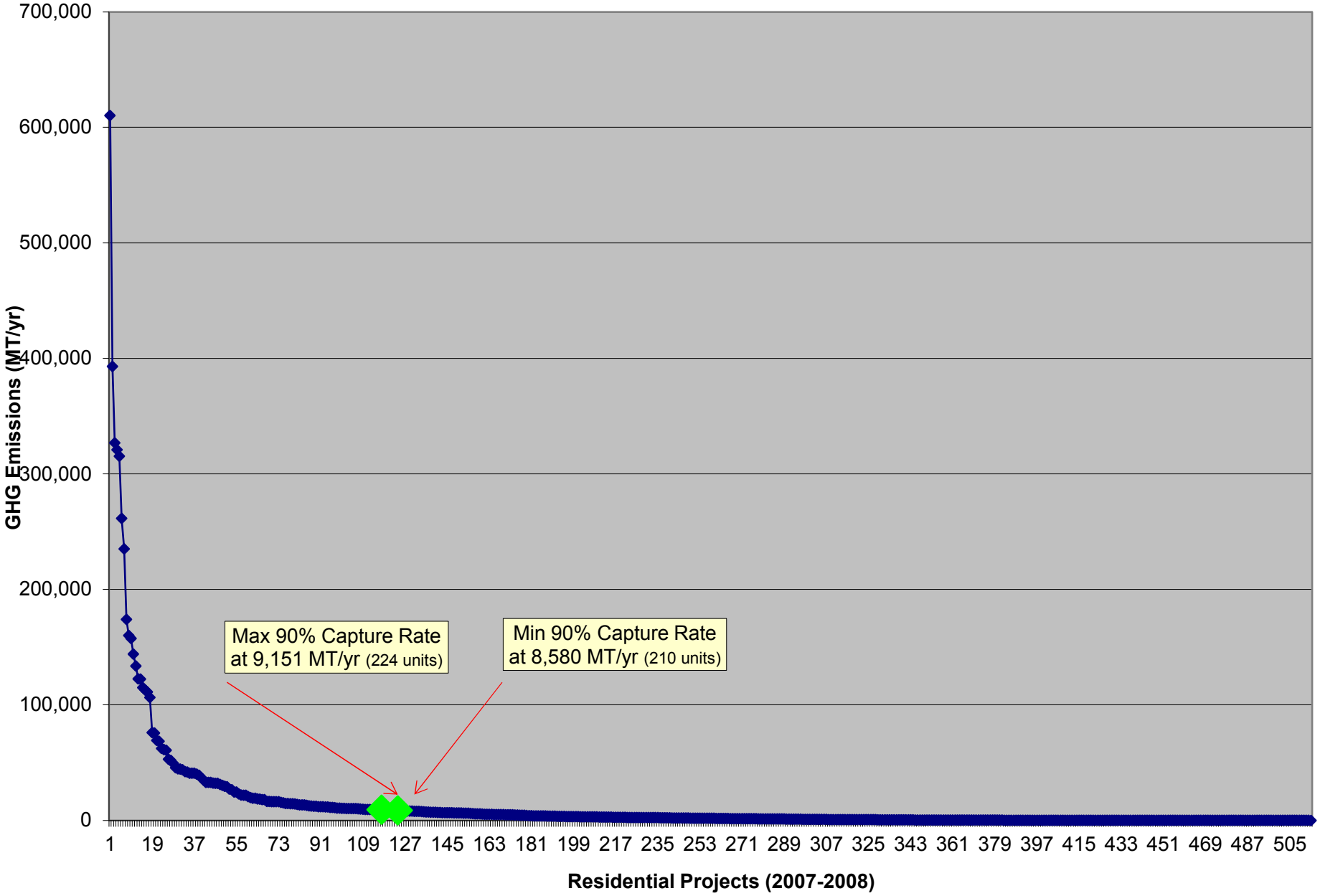
| | Project ID# | Comm size in Sq.Feet | Cumulative Sq ft | # of project capture rate | ft2 capture rate | Direct CO2 (MT/yr)[1] | Total Annual Electricity Usage[2] (15.19kWh/ft2, 0.01519MW/ft2) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 101 | 264 | 84,000 | 58074783.00 | 38% | 93% | 971 | 1,276 | 637 | 1,607 |
| 102 | 365 | 83,245 | 58158028.00 | 38% | 94% | 962 | 1,264 | 631 | 1,593 |
| 103 | 193 | 83,217 | 58241245.00 | 39% | 94% | 962 | 1,264 | 631 | 1,592 |
| 104 | 509 | 80,000 | 58321245.00 | 39% | 94% | 925 | 1,215 | 606 | 1,531 |
| 105 | 449 | 77,952 | 58399197.00 | 39% | 94% | 901 | 1,184 | 591 | 1,492 |
| 106 | 21 | 77,755 | 58476952.00 | 40% | 94% | 899 | 1,181 | 589 | 1,488 |
| 107 | 159 | 77,427 | 58554379.00 | 40% | 94% | 895 | 1,176 | 587 | 1,482 |
| 108 | 170 | 77,400 | 58631779.00 | 41% | 94% | 895 | 1,176 | 587 | 1,481 |
| 109 | 664 | 76,394 | 58708173.00 | 41% | 94% | 883 | 1,160 | 579 | 1,462 |
| 110 | 93 | 76,000 | 58784173.00 | 41% | 95% | 878 | 1,154 | 576 | 1,454 |
| 111 | 337 | 74,208 | 58858381.00 | 42% | 95% | 858 | 1,127 | 562 | 1,420 |
| 112 | 272 | 74,000 | 58932381.00 | 42% | 95% | 855 | 1,124 | 561 | 1,416 |
| 113 | 44 | 73,181 | 59005562.00 | 42% | 95% | 846 | 1,112 | 555 | 1,400 |
| 114 | 187 | 72,869 | 59078431.00 | 43% | 95% | 842 | 1,107 | 552 | 1,394 |
| 115 | 118 | 72,618 | 59151049.00 | 43% | 95% | 839 | 1,103 | 550 | 1,390 |
| 116 | 426 | 70,559 | 59221608.00 | 44% | 95% | 816 | 1,072 | 535 | 1,350 |
| 117 | 20 | 70,259 | 59291867.00 | 44% | 95% | 812 | 1,067 | 532 | 1,344 |
| 118 | 333 | 70,100 | 59361967.00 | 44% | 95% | 810 | 1,065 | 531 | 1,341 |
| 119 | 579 | 70,000 | 59431967.00 | 45% | 96% | 809 | 1,063 | 530 | 1,340 |
| 120 | 547 | 69,922 | 59501889.00 | 45% | 96% | 808 | 1,062 | 530 | 1,338 |
| 121 | 418 | 66,780 | 59568669.00 | 45% | 96% | 772 | 1,014 | 506 | 1,278 |
| 122 | 369 | 63,748 | 59632417.00 | 46% | 96% | 737 | 968 | 483 | 1,220 |
| 123 | 766 | 62,000 | 59694417.00 | 46% | 96% | 717 | 942 | 470 | 1,186 |
| 124 | 705 | 61,104 | 59755521.00 | 47% | 96% | 706 | 928 | 463 | 1,169 |
| 125 | 536 | 54,000 | 59809521.00 | 47% | 96% | 624 | 820 | 409 | 1,033 |
| 126 | 538 | 53,629 | 59863150.00 | 47% | 96% | 620 | 815 | 406 | 1,026 |
| 127 | 573 | 52,000 | 59915150.00 | 48% | 96% | 601 | 790 | 394 | 995 |
| 128 | 434 | 50,340 | 59965490.00 | 48% | 96% | 582 | 765 | 381 | 963 |
| 129 | 713 | 50,000 | 60015490.00 | 48% | 97% | 578 | 760 | 379 | 957 |
| 130 | 101 | 50,000 | 60065490.00 | 49% | 97% | 578 | 760 | 379 | 957 |
| 131 | 543 | 50,000 | 60115490.00 | 49% | 97% | 578 | 760 | 379 | 957 |
| 132 | 73 | 49,000 | 60164490.00 | 50% | 97% | 566 | 744 | 371 | 938 |
| 133 | 285 | 46,000 | 60210490.00 | 50% | 97% | 532 | 699 | 349 | 880 |
| 134 | 398 | 46,000 | 60256490.00 | 50% | 97% | 532 | 699 | 349 | 880 |
| 135 | 616 | 45,000 | 60301490.00 | 51% | 97% | 520 | 684 | 341 | 861 |
| 136 | 316 | 45,000 | 60346490.00 | 51% | 97% | 520 | 684 | 341 | 861 |
| 137 | 206 | 45,000 | 60391490.00 | 52% | 97% | 520 | 684 | 341 | 861 |
| 138 | 665 | 43,494 | 60434984.00 | 52% | 97% | 503 | 661 | 330 | 832 |
| 139 | 596 | 43,050 | 60478034.00 | 52% | 97% | 498 | 654 | 326 | 824 |
| 140 | 379 | 42,000 | 60520034.00 | 53% | 97% | 485 | 638 | 318 | 804 |
| 141 | 508 | 41,283 | 60561317.00 | 53% | 97% | 477 | 627 | 313 | 790 |
| 142 | 555 | 38,768 | 60600085.00 | 53% | 97% | 448 | 589 | 294 | 742 |
| 143 | 764 | 38,506 | 60638591.00 | 54% | 98% | 445 | 585 | 292 | 737 |
| 144 | 169 | 35,948 | 60674539.00 | 54% | 98% | 416 | 546 | 272 | 688 |
| 145 | 243 | 35,600 | 60710139.00 | 55% | 98% | 411 | 541 | 270 | 681 |
| 146 | 605 | 35,000 | 60745139.00 | 55% | 98% | 405 | 532 | 265 | 670 |
| 147 | 375 | 34,500 | 60779639.00 | 55% | 98% | 399 | 524 | 261 | 660 |
| 148 | 783 | 34,194 | 60813833.00 | 56% | 98% | 395 | 519 | 259 | 654 |
| 149 | 758 | 33,375 | 60847208.00 | 56% | 98% | 386 | 507 | 253 | 639 |
| 150 | 200 | 32,000 | 60879208.00 | 56% | 98% | 370 | 486 | 242 | 612 |

| | Project ID# | Comm size in Sq.Feet | Cumulative Sq ft | # of project capture rate | ft2 capture rate | Direct CO2 (MT/yr)[1] | Total Annual Electricity Usage[2] (15.19kWh/ft2, 0.01519MW/ft2) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 151 | 115 | 31,790 | 60910998.00 | 57% | 98% | 367 | 483 | 241 | 608 |
| 152 | 529 | 31,780 | 60942778.00 | 57% | 98% | 367 | 483 | 241 | 608 |
| 153 | 256 | 30,331 | 60973109.00 | 58% | 98% | 351 | 461 | 230 | 580 |
| 154 | 354 | 30,000 | 61003109.00 | 58% | 98% | 347 | 456 | 227 | 574 |
| 155 | 75 | 30,000 | 61033109.00 | 58% | 98% | 347 | 456 | 227 | 574 |
| 156 | 109 | 30,000 | 61063109.00 | 59% | 98% | 347 | 456 | 227 | 574 |
| 157 | 179 | 30,000 | 61093109.00 | 59% | 98% | 347 | 456 | 227 | 574 |
| 158 | 630 | 29,400 | 61122509.00 | 59% | 98% | 340 | 447 | 223 | 563 |
| 159 | 229 | 27,600 | 61150109.00 | 60% | 98% | 319 | 419 | 209 | 528 |
| 160 | 278 | 27,248 | 61177357.00 | 60% | 98% | 315 | 414 | 206 | 521 |
| 161 | 220 | 26,576 | 61203933.00 | 61% | 98% | 307 | 404 | 201 | 509 |
| 162 | 275 | 26,000 | 61229933.00 | 61% | 98% | 301 | 395 | 197 | 498 |
| 163 | 620 | 26,000 | 61255933.00 | 61% | 98% | 301 | 395 | 197 | 498 |
| 164 | 107 | 25,298 | 61281231.00 | 62% | 99% | 292 | 384 | 192 | 484 |
| 165 | 370 | 23,094 | 61304325.00 | 62% | 99% | 267 | 351 | 175 | 442 |
| 166 | 120 | 23,000 | 61327325.00 | 62% | 99% | 266 | 349 | 174 | 440 |
| 167 | 274 | 22,200 | 61349525.00 | 63% | 99% | 257 | 337 | 168 | 425 |
| 168 | 189 | 22,200 | 61371725.00 | 63% | 99% | 257 | 337 | 168 | 425 |
| 169 | 151 | 21,662 | 61393387.00 | 64% | 99% | 250 | 329 | 164 | 415 |
| 170 | 260 | 21,130 | 61414517.00 | 64% | 99% | 244 | 321 | 160 | 404 |
| 171 | 429 | 21,119.94 | 61435636.94 | 64% | 99% | 244 | 321 | 160 | 404 |
| 172 | 673 | 20,000 | 61455636.94 | 65% | 99% | 231 | 304 | 152 | 383 |
| 173 | 70 | 19,856 | 61475492.94 | 65% | 99% | 230 | 302 | 150 | 380 |
| 174 | 577 | 19,028 | 61494520.94 | 65% | 99% | 220 | 289 | 144 | 364 |
| 175 | 362 | 18,700 | 61513220.94 | 66% | 99% | 216 | 284 | 142 | 358 |
| 176 | 715 | 18,195 | 61531415.94 | 66% | 99% | 210 | 276 | 138 | 348 |
| 177 | 324 | 18,058 | 61549473.94 | 67% | 99% | 209 | 274 | 137 | 346 |
| 178 | 717 | 18,000 | 61567473.94 | 67% | 99% | 208 | 273 | 136 | 344 |
| 179 | 441 | 16,856 | 61584329.94 | 67% | 99% | 195 | 256 | 128 | 323 |
| 180 | 632 | 15,160 | 61599489.94 | 68% | 99% | 175 | 230 | 115 | 290 |
| 181 | 401 | 15,101 | 61614590.94 | 68% | 99% | 175 | 229 | 114 | 289 |
| 182 | 313 | 14,820 | 61629410.94 | 68% | 99% | 171 | 225 | 112 | 284 |
| 183 | 505 | 14,820 | 61644230.94 | 69% | 99% | 171 | 225 | 112 | 284 |
| 184 | 104 | 14,800 | 61659030.94 | 69% | 99% | 171 | 225 | 112 | 283 |
| 185 | 470 | 14,741 | 61673771.94 | 70% | 99% | 170 | 224 | 112 | 282 |
| 186 | 685 | 14,670 | 61688441.94 | 70% | 99% | 170 | 223 | 111 | 281 |
| 187 | 524 | 14,483 | 61702924.94 | 70% | 99% | 167 | 220 | 110 | 277 |
| 188 | 304 | 14,407 | 61717331.94 | 71% | 99% | 167 | 219 | 109 | 276 |
| 189 | 774 | 13,652 | 61730983.94 | 71% | 99% | 158 | 207 | 103 | 261 |
| 190 | 328 | 13,614 | 61744597.94 | 71% | 99% | 157 | 207 | 103 | 261 |
| 191 | 442 | 13,612 | 61758209.94 | 72% | 99% | 157 | 207 | 103 | 260 |
| 192 | 40 | 13,561 | 61771770.94 | 72% | 99% | 157 | 206 | 103 | 260 |
| 193 | 103 | 13,500 | 61785270.94 | 73% | 99% | 156 | 205 | 102 | 258 |
| 194 | 456 | 13,135 | 61798405.94 | 73% | 99% | 152 | 200 | 100 | 251 |
| 195 | 798 | 13,089 | 61811494.94 | 73% | 99% | 151 | 199 | 99 | 250 |
| 196 | 421 | 13,000 | 61824494.94 | 74% | 99% | 150 | 197 | 99 | 249 |
| 197 | 490 | 12,024 | 61836518.94 | 74% | 99% | 139 | 183 | 91 | 230 |
| 198 | 37 | 12,000 | 61848518.94 | 74% | 99% | 139 | 182 | 91 | 230 |
| 199 | 753 | 11,800 | 61860318.94 | 75% | 99% | 136 | 179 | 89 | 226 |
| 200 | 203 | 11,691 | 61872009.94 | 75% | 99% | 135 | 178 | 89 | 224 |

| | Project ID# | Comm size in Sq.Feet | Cumulative Sq ft | # of project capture rate | ft2 capture rate | Direct CO2 (MT/yr)[1] | Total Annual Electricity Usage[2] (15.19kWh/ft2, 0.01519MW/ft2) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 201 | 669 | 11,200 | 61883209.94 | 76% | 100% | 129 | 170 | 85 | 214 |
| 202 | 542 | 11,000 | 61894209.94 | 76% | 100% | 127 | 167 | 83 | 210 |
| 203 | 485 | 10,780 | 61904989.94 | 76% | 100% | 125 | 164 | 82 | 206 |
| 204 | 511 | 10,000 | 61914989.94 | 77% | 100% | 116 | 152 | 76 | 191 |
| 205 | 364 | 9,600 | 61924589.94 | 77% | 100% | 111 | 146 | 73 | 184 |
| 206 | 486 | 9,460 | 61934049.94 | 77% | 100% | 109 | 144 | 72 | 181 |
| 207 | 727 | 9,388 | 61943437.94 | 78% | 100% | 109 | 143 | 71 | 180 |
| 208 | 353 | 9,000 | 61952437.94 | 78% | 100% | 104 | 137 | 68 | 172 |
| 209 | 74 | 8,968 | 61961405.94 | 79% | 100% | 104 | 136 | 68 | 172 |
| 210 | 648 | 8,640 | 61970045.94 | 79% | 100% | 100 | 131 | 65 | 165 |
| 211 | 205 | 8,350 | 61978395.94 | 79% | 100% | 97 | 127 | 63 | 160 |
| 212 | 643 | 8,270 | 61986665.94 | 80% | 100% | 96 | 126 | 63 | 158 |
| 213 | 390 | 8,189 | 61994854.94 | 80% | 100% | 95 | 124 | 62 | 157 |
| 214 | 345 | 8,070 | 62002924.94 | 80% | 100% | 93 | 123 | 61 | 154 |
| 215 | 325 | 8,010 | 62010934.94 | 81% | 100% | 93 | 122 | 61 | 153 |
| 216 | 327 | 7,575 | 62018509.94 | 81% | 100% | 88 | 115 | 57 | 145 |
| 217 | 499 | 7,300 | 62025809.94 | 82% | 100% | 84 | 111 | 55 | 140 |
| 218 | 609 | 7,206 | 62033015.94 | 82% | 100% | 83 | 109 | 55 | 138 |
| 219 | 126 | 7,200 | 62040215.94 | 82% | 100% | 83 | 109 | 55 | 138 |
| 220 | 497 | 7,188 | 62047403.94 | 83% | 100% | 83 | 109 | 54 | 138 |
| 221 | 445 | 6,713 | 62054116.94 | 83% | 100% | 78 | 102 | 51 | 128 |
| 222 | 619 | 6,700 | 62060816.94 | 83% | 100% | 77 | 102 | 51 | 128 |
| 223 | 600 | 6,640 | 62067456.94 | 84% | 100% | 77 | 101 | 50 | 127 |
| 224 | 690 | 6,100 | 62073556.94 | 84% | 100% | 71 | 93 | 46 | 117 |
| 225 | 569 | 5,359 | 62078915.94 | 85% | 100% | 62 | 81 | 41 | 103 |
| 226 | 551 | 5,208 | 62084123.94 | 85% | 100% | 60 | 79 | 39 | 100 |
| 227 | 533 | 4,890 | 62089013.94 | 85% | 100% | 57 | 74 | 37 | 94 |
| 228 | 674 | 4,800 | 62093813.94 | 86% | 100% | 55 | 73 | 36 | 92 |
| 229 | 452 | 4,605 | 62098418.94 | 86% | 100% | 53 | 70 | 35 | 88 |
| 230 | 519 | 4,500 | 62102918.94 | 86% | 100% | 52 | 68 | 34 | 86 |
| 231 | 420 | 4,196 | 62107114.94 | 87% | 100% | 48 | 64 | 32 | 80 |
| 232 | 286 | 4,130 | 62111244.94 | 87% | 100% | 48 | 63 | 31 | 79 |
| 233 | 57 | 4,089 | 62115333.94 | 88% | 100% | 47 | 62 | 31 | 78 |
| 234 | 704 | 4,089 | 62119422.94 | 88% | 100% | 47 | 62 | 31 | 78 |
| 235 | 174 | 4,000 | 62123422.94 | 88% | 100% | 46 | 61 | 30 | 77 |
| 236 | 255 | 4,000 | 62127422.94 | 89% | 100% | 46 | 61 | 30 | 77 |
| 237 | 611 | 3,820 | 62131242.94 | 89% | 100% | 44 | 58 | 29 | 73 |
| 238 | 688 | 3,640 | 62134882.94 | 89% | 100% | 42 | 55 | 28 | 70 |
| 239 | 48 | 3,600 | 62138482.94 | 90% | 100% | 42 | 55 | 27 | 69 |
| 240 | 737 | 3,300 | 62141782.94 | 90% | 100% | 38 | 50 | 25 | 63 |
| 241 | 79 | 3,178 | 62144960.94 | 91% | 100% | 37 | 48 | 24 | 61 |
| 242 | 284 | 3,025 | 62147985.94 | 91% | 100% | 35 | 46 | 23 | 58 |
| 243 | 780 | 2,950 | 62150935.94 | 91% | 100% | 34 | 45 | 22 | 56 |
| 244 | 392 | 2,769 | 62153704.94 | 92% | 100% | 32 | 42 | 21 | 53 |
| 245 | 576 | 2,736 | 62156440.94 | 92% | 100% | 32 | 42 | 21 | 52 |
| 246 | 242 | 2,730 | 62159170.94 | 92% | 100% | 32 | 41 | 21 | 52 |
| 247 | 65 | 2,650 | 62161820.94 | 93% | 100% | 31 | 40 | 20 | 51 |
| 248 | 391 | 2,600 | 62164420.94 | 93% | 100% | 30 | 39 | 20 | 50 |
| 249 | 681 | 2,532 | 62166952.94 | 94% | 100% | 29 | 38 | 19 | 48 |
| 250 | 711 | 2,320 | 62169272.94 | 94% | 100% | 27 | 35 | 18 | 44 |

| | Project ID# | Comm size in Sq.Feet | Cumulative Sq ft | # of project capture rate | ft2 capture rate | Direct CO2 (MT/yr)[1] | Total Annual Electricity Usage[2] (15.19kWh/ft2, 0.01519MW/ft2) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 251 | 531 | 2,240 | 62171512.94 | 94% | 100% | 26 | 34 | 17 | 43 |
| 252 | 634 | 2,139 | 62173651.94 | 95% | 100% | 25 | 32 | 16 | 41 |
| 253 | 697 | 2,000 | 62175651.94 | 95% | 100% | 23 | 30 | 15 | 38 |
| 254 | 739 | 1,904 | 62177555.94 | 95% | 100% | 22 | 29 | 14 | 36 |
| 255 | 679 | 1,750 | 62179305.94 | 96% | 100% | 20 | 27 | 13 | 33 |
| 256 | 700 | 1,595 | 62180900.94 | 96% | 100% | 18 | 24 | 12 | 31 |
| 257 | 757 | 1,500 | 62182400.94 | 97% | 100% | 17 | 23 | 11 | 29 |
| 258 | 785 | 1500 | 62183900.94 | 97% | 100% | 17 | 23 | 11 | 29 |
| 259 | 503 | 1,250 | 62185150.94 | 97% | 100% | 14 | 19 | 9 | 24 |
| 260 | 403 | 924 | 62186074.94 | 98% | 100% | 11 | 14 | 7 | 18 |
| 261 | 137 | 900 | 62186974.94 | 98% | 100% | 10 | 14 | 7 | 17 |
| 262 | 756 | 840 | 62187814.94 | 98% | 100% | 10 | 13 | 6 | 16 |
| 263 | 751 | 800 | 62188614.94 | 99% | 100% | 9 | 12 | 6 | 15 |
| 264 | 670 | 153.071 | 62188768.01 | 99% | 100% | 2 | 2 | 1 | 3 |
| 265 | 257 | 0.98 | 62188768.99 | 100% | 100% | 0 | 0 | 0 | 0 |
| 266 | 361 | 0 | 62188768.99 | 100% | 100% | 0 | 0 | 0 | 0 |
| | | | | | TOTALs | 717,785 | 944,647 | 471,237 | 1,189,022 |

1. Direct CO2 emissions calculated using the URBEMIS model for CO2 emissions only.
2. Annual Electricity Usage based on statewide annual electricity and water-related energy use from the California Commercial End-Use Survey (Itron, Inc for California Energy Commission, March 2006)
3. Annual Statewide Energy Intensity from the "Reporting and Verification of GHG Emissions in Electricity Sector" (California Public Utilities Commmission and California Energy Commission Joint Decision, September 2007)


GHG Emissions from 514 Residential Projects
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
GHG Emissions (MT/yr)
Max 90% Capture Rate at 9,151 MT/yr (224 units)
Min 90% Capture Rate at 8,580 MT/yr (210 units)
1 19 37 55 73 91 109 127 145 163 181 199 217 235 253 271 289 307 325 343 361 379 397 415 433 451 469 487 505
Residential Projects (2007-2008)

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | 14,938 | 14,938 | 0% | 9% | 546,332 | 128,168 | 63,937 | 610,269 |
| 2 | 604 | 9,618 | 24,556 | 0% | 14% | 351,762 | 82,522 | 41,166 | 392,929 |
| 3 | 407 | 8,000 | 32,556 | 1% | 19% | 292,587 | 68,640 | 34,241 | 326,828 |
| 4 | 53 | 7,856 | 40,412 | 1% | 23% | 287,320 | 67,404 | 33,625 | 320,945 |
| 5 | 178 | 7,720 | 48,132 | 1% | 28% | 282,346 | 66,238 | 33,043 | 315,389 |
| 6 | 606 | 6,400 | 54,532 | 1% | 31% | 234,069 | 54,912 | 27,393 | 261,462 |
| 7 | 602 | 5,751 | 60,283 | 1% | 35% | 210,333 | 49,344 | 24,615 | 234,948 |
| 8 | 54 | 4,259 | 64,542 | 2% | 37% | 155,766 | 36,542 | 18,229 | 173,995 |
| 9 | 7 | 3,918 | 68,460 | 2% | 39% | 143,294 | 33,616 | 16,770 | 160,064 |
| 10 | 17 | 3,858 | 72,318 | 2% | 42% | 141,100 | 33,102 | 16,513 | 157,613 |
| 11 | 72 | 3,526 | 75,844 | 2% | 44% | 128,958 | 30,253 | 15,092 | 144,049 |
| 12 | 332 | 3,274 | 79,118 | 2% | 46% | 119,741 | 28,091 | 14,013 | 133,754 |
| 13 | 30 | 3,001 | 82,119 | 3% | 47% | 109,757 | 25,749 | 12,845 | 122,601 |
| 14 | 443 | 2,995 | 85,114 | 3% | 49% | 109,537 | 25,697 | 12,819 | 122,356 |
| 15 | 415 | 2,815 | 87,929 | 3% | 51% | 102,954 | 24,153 | 12,049 | 115,003 |
| 16 | 52 | 2,767 | 90,696 | 3% | 52% | 101,198 | 23,741 | 11,843 | 113,042 |
| 17 | 87 | 2,721 | 93,417 | 3% | 54% | 99,516 | 23,346 | 11,646 | 111,162 |
| 18 | 33 | 2,606 | 96,023 | 4% | 55% | 95,310 | 22,359 | 11,154 | 106,464 |
| 19 | 44 | 1,860 | 97,883 | 4% | 56% | 68,026 | 15,959 | 7,961 | 75,987 |
| 20 | 39 | 1,850 | 99,733 | 4% | 57% | 67,661 | 15,873 | 7,918 | 75,579 |
| 21 | 21 | 1,698 | 101,431 | 4% | 58% | 62,102 | 14,569 | 7,268 | 69,369 |
| 22 | 25 | 1,677 | 103,108 | 4% | 59% | 61,333 | 14,389 | 7,178 | 68,511 |
| 23 | 644 | 1,525 | 104,633 | 4% | 60% | 55,774 | 13,085 | 6,527 | 62,302 |
| 24 | 471 | 1,500 | 106,133 | 5% | 61% | 54,860 | 12,870 | 6,420 | 61,280 |
| 25 | 77 | 1,488 | 107,621 | 5% | 62% | 54,421 | 12,767 | 6,369 | 60,790 |
| 26 | 8 | 1,297 | 108,918 | 5% | 63% | 47,436 | 11,128 | 5,551 | 52,987 |
| 27 | 352 | 1,274 | 110,192 | 5% | 63% | 46,594 | 10,931 | 5,453 | 52,047 |
| 28 | 101 | 1,208 | 111,400 | 5% | 64% | 44,181 | 10,365 | 5,170 | 49,351 |
| 29 | 66 | 1,115 | 112,515 | 6% | 65% | 40,779 | 9,567 | 4,772 | 45,552 |
| 30 | 762 | 1093 | 113,608 | 6% | 65% | 39,975 | 9,378 | 4,678 | 44,653 |
| 31 | 125 | 1,086 | 114,694 | 6% | 66% | 39,719 | 9,318 | 4,648 | 44,367 |
| 32 | 111 | 1074 | 115,768 | 6% | 67% | 39,280 | 9,215 | 4,597 | 43,877 |
| 33 | 110 | 1,035 | 116,803 | 6% | 67% | 37,853 | 8,880 | 4,430 | 42,283 |
| 34 | 73 | 1,027 | 117,830 | 7% | 68% | 37,561 | 8,812 | 4,396 | 41,957 |
| 35 | 98 | 1,000 | 118,830 | 7% | 68% | 36,573 | 8,580 | 4,280 | 40,853 |
| 36 | 466 | 1,000 | 119,830 | 7% | 69% | 36,573 | 8,580 | 4,280 | 40,853 |
| 37 | 109 | 1,000 | 120,830 | 7% | 70% | 36,573 | 8,580 | 4,280 | 40,853 |
| 38 | 336 | 980 | 121,810 | 7% | 70% | 35,842 | 8,408 | 4,195 | 40,036 |
| 39 | 675 | 955 | 122,765 | 8% | 71% | 34,928 | 8,194 | 4,088 | 39,015 |
| 40 | 138 | 903 | 123,668 | 8% | 71% | 33,026 | 7,748 | 3,865 | 36,891 |
| 41 | 381 | 854 | 124,522 | 8% | 72% | 31,234 | 7,327 | 3,655 | 34,889 |
| 42 | 288 | 808 | 125,330 | 8% | 72% | 29,551 | 6,933 | 3,458 | 33,010 |
| 43 | 130 | 807 | 126,137 | 8% | 73% | 29,515 | 6,924 | 3,454 | 32,969 |
| 44 | 215 | 806 | 126,943 | 9% | 73% | 29,478 | 6,915 | 3,450 | 32,928 |
| 45 | 200 | 790 | 127,733 | 9% | 74% | 28,893 | 6,778 | 3,381 | 32,274 |
| 46 | 68 | 787 | 128,520 | 9% | 74% | 28,783 | 6,752 | 3,368 | 32,152 |
| 47 | 189 | 786 | 129,306 | 9% | 74% | 28,747 | 6,744 | 3,364 | 32,111 |
| 48 | 2 | 760 | 130,066 | 9% | 75% | 27,796 | 6,521 | 3,253 | 31,049 |
| 49 | 6 | 742 | 130,808 | 10% | 75% | 27,137 | 6,366 | 3,176 | 30,313 |
| 50 | 16 | 721 | 131,529 | 10% | 76% | 26,369 | 6,186 | 3,086 | 29,455 |

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 51 | 580 | 713 | 132,242 | 10% | 76% | 26,077 | 6,118 | 3,052 | 29,129 |
| 52 | 60 | 665 | 132,907 | 10% | 77% | 24,321 | 5,706 | 2,846 | 27,168 |
| 53 | 64 | 650 | 133,557 | 10% | 77% | 23,773 | 5,577 | 2,782 | 26,555 |
| 54 | 100 | 603 | 134,160 | 11% | 77% | 22,054 | 5,174 | 2,581 | 24,635 |
| 55 | 757 | 600 | 134,760 | 11% | 78% | 21,944 | 5,148 | 2,568 | 24,512 |
| 56 | 316 | 562 | 135,322 | 11% | 78% | 20,554 | 4,822 | 2,405 | 22,960 |
| 57 | 186 | 536 | 135,858 | 11% | 78% | 19,603 | 4,599 | 2,294 | 21,897 |
| 58 | 351 | 535 | 136,393 | 11% | 79% | 19,567 | 4,590 | 2,290 | 21,857 |
| 59 | 93 | 532 | 136,925 | 11% | 79% | 19,457 | 4,565 | 2,277 | 21,734 |
| 60 | 59 | 504 | 137,429 | 12% | 79% | 18,433 | 4,324 | 2,157 | 20,590 |
| 61 | 14 | 484 | 137,913 | 12% | 79% | 17,701 | 4,153 | 2,072 | 19,773 |
| 62 | 630 | 471 | 138,384 | 12% | 80% | 17,226 | 4,041 | 2,016 | 19,242 |
| 63 | 89 | 469 | 138,853 | 12% | 80% | 17,153 | 4,024 | 2,007 | 19,160 |
| 64 | 208 | 457 | 139,310 | 12% | 80% | 16,714 | 3,921 | 1,956 | 18,670 |
| 65 | 106 | 450 | 139,760 | 13% | 80% | 16,458 | 3,861 | 1,926 | 18,384 |
| 66 | 511 | 440 | 140,200 | 13% | 81% | 16,092 | 3,775 | 1,883 | 17,976 |
| 67 | 229 | 439 | 140,639 | 13% | 81% | 16,056 | 3,767 | 1,879 | 17,935 |
| 68 | 45 | 400 | 141,039 | 13% | 81% | 14,629 | 3,432 | 1,712 | 16,341 |
| 69 | 285 | 400 | 141,439 | 13% | 81% | 14,629 | 3,432 | 1,712 | 16,341 |
| 70 | 513 | 398 | 141,837 | 14% | 82% | 14,556 | 3,415 | 1,703 | 16,260 |
| 71 | 102 | 398 | 142,235 | 14% | 82% | 14,556 | 3,415 | 1,703 | 16,260 |
| 72 | 308 | 396 | 142,631 | 14% | 82% | 14,483 | 3,398 | 1,695 | 16,178 |
| 73 | 478 | 396 | 143,027 | 14% | 82% | 14,483 | 3,398 | 1,695 | 16,178 |
| 74 | 501 | 384 | 143,411 | 14% | 83% | 14,044 | 3,295 | 1,644 | 15,688 |
| 75 | 179 | 375 | 143,786 | 15% | 83% | 13,715 | 3,218 | 1,605 | 15,320 |
| 76 | 574 | 359 | 144,145 | 15% | 83% | 13,130 | 3,080 | 1,537 | 14,666 |
| 77 | 40 | 358 | 144,503 | 15% | 83% | 13,093 | 3,072 | 1,532 | 14,626 |
| 78 | 221 | 353 | 144,856 | 15% | 83% | 12,910 | 3,029 | 1,511 | 14,421 |
| 79 | 355 | 353 | 145,209 | 15% | 84% | 12,910 | 3,029 | 1,511 | 14,421 |
| 80 | 401 | 348 | 145,557 | 16% | 84% | 12,728 | 2,986 | 1,489 | 14,217 |
| 81 | 294 | 340 | 145,897 | 16% | 84% | 12,435 | 2,917 | 1,455 | 13,890 |
| 82 | 310 | 330 | 146,227 | 16% | 84% | 12,069 | 2,831 | 1,412 | 13,482 |
| 83 | 264 | 330 | 146,557 | 16% | 84% | 12,069 | 2,831 | 1,412 | 13,482 |
| 84 | 543 | 330 | 146,887 | 16% | 85% | 12,069 | 2,831 | 1,412 | 13,482 |
| 85 | 655 | 320 | 147,207 | 17% | 85% | 11,703 | 2,746 | 1,370 | 13,073 |
| 86 | 103 | 311 | 147,518 | 17% | 85% | 11,374 | 2,668 | 1,331 | 12,705 |
| 87 | 187 | 307 | 147,825 | 17% | 85% | 11,228 | 2,634 | 1,314 | 12,542 |
| 88 | 553 | 300 | 148,125 | 17% | 85% | 10,972 | 2,574 | 1,284 | 12,256 |
| 89 | 723 | 300 | 148,425 | 17% | 85% | 10,972 | 2,574 | 1,284 | 12,256 |
| 90 | 283 | 292 | 148,717 | 18% | 86% | 10,679 | 2,505 | 1,250 | 11,929 |
| 91 | 719 | 292 | 149,009 | 18% | 86% | 10,679 | 2,505 | 1,250 | 11,929 |
| 92 | 369 | 288 | 149,297 | 18% | 86% | 10,533 | 2,471 | 1,233 | 11,766 |
| 93 | 48 | 287 | 149,584 | 18% | 86% | 10,497 | 2,462 | 1,228 | 11,725 |
| 94 | 153 | 286 | 149,870 | 18% | 86% | 10,460 | 2,454 | 1,224 | 11,684 |
| 95 | 730 | 278 | 150,148 | 18% | 86% | 10,167 | 2,385 | 1,190 | 11,357 |
| 96 | 537 | 274 | 150,422 | 19% | 87% | 10,021 | 2,351 | 1,173 | 11,194 |
| 97 | 225 | 272 | 150,694 | 19% | 87% | 9,948 | 2,334 | 1,164 | 11,112 |
| 98 | 63 | 262 | 150,956 | 19% | 87% | 9,582 | 2,248 | 1,121 | 10,704 |
| 99 | 194 | 260 | 151,216 | 19% | 87% | 9,509 | 2,231 | 1,113 | 10,622 |
| 100 | 663 | 257 | 151,473 | 19% | 87% | 9,399 | 2,205 | 1,100 | 10,499 |

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 101 | 487 | 255 | 151,728 | 20% | 87% | 9,326 | 2,188 | 1,091 | 10,418 |
| 102 | 70 | 252 | 151,980 | 20% | 88% | 9,216 | 2,162 | 1,079 | 10,295 |
| 103 | 393 | 251 | 152,231 | 20% | 88% | 9,180 | 2,154 | 1,074 | 10,254 |
| 104 | 1 | 251 | 152,482 | 20% | 88% | 9,180 | 2,154 | 1,074 | 10,254 |
| 105 | 76 | 250 | 152,732 | 20% | 88% | 9,143 | 2,145 | 1,070 | 10,213 |
| 106 | 146 | 249 | 152,981 | 21% | 88% | 9,107 | 2,136 | 1,066 | 10,173 |
| 107 | 492 | 246 | 153,227 | 21% | 88% | 8,997 | 2,111 | 1,053 | 10,050 |
| 108 | 436 | 240 | 153,467 | 21% | 88% | 8,778 | 2,059 | 1,027 | 9,805 |
| 109 | 422 | 237 | 153,704 | 21% | 89% | 8,668 | 2,033 | 1,014 | 9,682 |
| 110 | 27 | 233 | 153,937 | 21% | 89% | 8,522 | 1,999 | 997 | 9,519 |
| 111 | 31 | 232 | 154,169 | 22% | 89% | 8,485 | 1,991 | 993 | 9,478 |
| 112 | 437 | 230 | 154,399 | 22% | 89% | 8,412 | 1,973 | 984 | 9,396 |
| 113 | 567 | 228 | 154,627 | 22% | 89% | 8,339 | 1,956 | 976 | 9,315 |
| 114 | 198 | 226 | 154,853 | 22% | 89% | 8,266 | 1,939 | 967 | 9,233 |
| 115 | 439 | 225 | 155,078 | 22% | 89% | 8,229 | 1,931 | 963 | 9,192 |
| 116 | 573 | 225 | 155,303 | 23% | 89% | 8,229 | 1,931 | 963 | 9,192 |
| **117** | **462** | **224** | **155,527** | **23%** | **90%** | **8,192** | 1,922 | **959** | **9,151** |
| 118 | 647 | 219 | 155,746 | 23% | 90% | 8,009 | 1,879 | 937 | 8,946 |
| 119 | 605 | 219 | 155,965 | 23% | 90% | 8,009 | 1,879 | 937 | 8,946 |
| 120 | 145 | 215 | 156,180 | 23% | 90% | 7,863 | 1,845 | 920 | 8,783 |
| 121 | 555 | 214 | 156,394 | 24% | 90% | 7,826 | 1,836 | 916 | 8,742 |
| 122 | 206 | 212 | 156,606 | 24% | 90% | 7,753 | 1,819 | 907 | 8,661 |
| 123 | 532 | 211 | 156,817 | 24% | 90% | 7,717 | 1,810 | 903 | 8,620 |
| **124** | **234** | **210** | **157,027** | **24%** | **90%** | **7,681** | 1,802 | **899** | **8,580** |
| 125 | 216 | 206 | 157,233 | 24% | 91% | 7,535 | 1,767 | 882 | 8,416 |
| 126 | 56 | 204 | 157,437 | 25% | 91% | 7,462 | 1,750 | 873 | 8,335 |
| 127 | 65 | 201 | 157,638 | 25% | 91% | 7,352 | 1,725 | 860 | 8,212 |
| 128 | 589 | 198 | 157,836 | 25% | 91% | 7,242 | 1,699 | 847 | 8,090 |
| 129 | 736 | 197 | 158,033 | 25% | 91% | 7,206 | 1,690 | 843 | 8,049 |
| 130 | 280 | 196 | 158,229 | 25% | 91% | 7,169 | 1,682 | 839 | 8,008 |
| 131 | 20 | 195 | 158,424 | 25% | 91% | 7,132 | 1,673 | 835 | 7,967 |
| 132 | 517 | 194 | 158,618 | 26% | 91% | 7,096 | 1,665 | 830 | 7,926 |
| 133 | 470 | 191 | 158,809 | 26% | 91% | 6,986 | 1,639 | 818 | 7,804 |
| 134 | 50 | 188 | 158,997 | 26% | 92% | 6,876 | 1,613 | 805 | 7,681 |
| 135 | 57 | 184 | 159,181 | 26% | 92% | 6,730 | 1,579 | 788 | 7,518 |
| 136 | 191 | 180 | 159,361 | 26% | 92% | 6,584 | 1,544 | 770 | 7,354 |
| 137 | 139 | 177 | 159,538 | 27% | 92% | 6,474 | 1,519 | 758 | 7,232 |
| 138 | 670 | 175 | 159,713 | 27% | 92% | 6,401 | 1,502 | 749 | 7,150 |
| 139 | 406 | 174 | 159,887 | 27% | 92% | 6,364 | 1,493 | 745 | 7,109 |
| 140 | 453 | 174 | 160,061 | 27% | 92% | 6,364 | 1,493 | 745 | 7,109 |
| 141 | 196 | 171 | 160,232 | 27% | 92% | 6,255 | 1,467 | 732 | 6,986 |
| 142 | 653 | 168 | 160,400 | 28% | 92% | 6,145 | 1,441 | 719 | 6,864 |
| 143 | 398 | 166 | 160,566 | 28% | 92% | 6,072 | 1,424 | 711 | 6,782 |
| 144 | 5 | 165 | 160,731 | 28% | 93% | 6,035 | 1,416 | 706 | 6,741 |
| 145 | 472 | 164 | 160,895 | 28% | 93% | 5,998 | 1,407 | 702 | 6,700 |
| 146 | 42 | 163 | 161,058 | 28% | 93% | 5,962 | 1,399 | 698 | 6,660 |
| 147 | 84 | 163 | 161,221 | 29% | 93% | 5,962 | 1,399 | 698 | 6,660 |
| 148 | 150 | 160 | 161,381 | 29% | 93% | 5,852 | 1,373 | 685 | 6,537 |
| 149 | 592 | 160 | 161,541 | 29% | 93% | 5,852 | 1,373 | 685 | 6,537 |
| 150 | 459 | 158 | 161,699 | 29% | 93% | 5,779 | 1,356 | 676 | 6,455 |

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 151 | 79 | 158 | 161,857 | 29% | 93% | 5,779 | 1,356 | 676 | 6,455 |
| 152 | 230 | 156 | 162,013 | 30% | 93% | 5,706 | 1,338 | 668 | 6,374 |
| 153 | 379 | 156 | 162,169 | 30% | 93% | 5,706 | 1,338 | 668 | 6,374 |
| 154 | 575 | 155 | 162,324 | 30% | 93% | 5,669 | 1,330 | 663 | 6,333 |
| 155 | 273 | 151 | 162,475 | 30% | 94% | 5,523 | 1,296 | 646 | 6,169 |
| 156 | 416 | 142 | 162,617 | 30% | 94% | 5,194 | 1,218 | 608 | 5,802 |
| 157 | 591 | 141 | 162,758 | 31% | 94% | 5,157 | 1,210 | 603 | 5,761 |
| 158 | 384 | 140 | 162,898 | 31% | 94% | 5,121 | 1,201 | 599 | 5,720 |
| 159 | 534 | 140 | 163,038 | 31% | 94% | 5,121 | 1,201 | 599 | 5,720 |
| 160 | 488 | 136 | 163,174 | 31% | 94% | 4,974 | 1,167 | 582 | 5,556 |
| 161 | 748 | 131 | 163,305 | 31% | 94% | 4,791 | 1,124 | 561 | 5,352 |
| 162 | 353 | 130 | 163,435 | 32% | 94% | 4,755 | 1,115 | 556 | 5,311 |
| 163 | 105 | 128 | 163,563 | 32% | 94% | 4,682 | 1,098 | 548 | 5,230 |
| 164 | 405 | 128 | 163,691 | 32% | 94% | 4,682 | 1,098 | 548 | 5,230 |
| 165 | 367 | 127 | 163,818 | 32% | 94% | 4,645 | 1,090 | 544 | 5,189 |
| 166 | 121 | 126 | 163,944 | 32% | 94% | 4,609 | 1,081 | 539 | 5,148 |
| 167 | 527 | 125 | 164,069 | 32% | 94% | 4,572 | 1,073 | 535 | 5,107 |
| 168 | 74 | 125 | 164,194 | 33% | 95% | 4,572 | 1,073 | 535 | 5,107 |
| 169 | 149 | 123 | 164,317 | 33% | 95% | 4,499 | 1,055 | 526 | 5,025 |
| 170 | 108 | 120 | 164,437 | 33% | 95% | 4,389 | 1,030 | 514 | 4,903 |
| 171 | 134 | 120 | 164,557 | 33% | 95% | 4,389 | 1,030 | 514 | 4,903 |
| 172 | 81 | 120 | 164,677 | 33% | 95% | 4,389 | 1,030 | 514 | 4,903 |
| 173 | 603 | 118 | 164,795 | 34% | 95% | 4,316 | 1,012 | 505 | 4,821 |
| 174 | 226 | 115 | 164,910 | 34% | 95% | 4,206 | 987 | 492 | 4,698 |
| 175 | 347 | 114 | 165,024 | 34% | 95% | 4,170 | 978 | 488 | 4,658 |
| 176 | 639 | 112 | 165,136 | 34% | 95% | 4,097 | 961 | 479 | 4,576 |
| 177 | 142 | 109 | 165,245 | 34% | 95% | 3,987 | 935 | 467 | 4,453 |
| 178 | 669 | 108 | 165,353 | 35% | 95% | 3,950 | 927 | 462 | 4,412 |
| 179 | 127 | 107 | 165,460 | 35% | 95% | 3,914 | 918 | 458 | 4,372 |
| 180 | 438 | 102 | 165,562 | 35% | 95% | 3,731 | 875 | 437 | 4,167 |
| 181 | 512 | 102 | 165,664 | 35% | 95% | 3,731 | 875 | 437 | 4,167 |
| 182 | 309 | 97 | 165,761 | 35% | 95% | 3,551 | 832 | 415 | 3,966 |
| 183 | 307 | 96 | 165,857 | 36% | 96% | 3,514 | 824 | 411 | 3,925 |
| 184 | 741 | 96 | 165,953 | 36% | 96% | 3,514 | 824 | 411 | 3,925 |
| 185 | 314 | 95 | 166,048 | 36% | 96% | 3,478 | 815 | 407 | 3,884 |
| 186 | 86 | 95 | 166,143 | 36% | 96% | 3,478 | 815 | 407 | 3,884 |
| 187 | 388 | 94 | 166,237 | 36% | 96% | 3,441 | 807 | 402 | 3,844 |
| 188 | 113 | 93 | 166,330 | 37% | 96% | 3,405 | 798 | 398 | 3,803 |
| 189 | 261 | 92 | 166,422 | 37% | 96% | 3,368 | 789 | 394 | 3,762 |
| 190 | 46 | 91 | 166,513 | 37% | 96% | 3,331 | 781 | 389 | 3,721 |
| 191 | 281 | 89 | 166,602 | 37% | 96% | 3,258 | 764 | 381 | 3,639 |
| 192 | 85 | 88 | 166,690 | 37% | 96% | 3,222 | 755 | 377 | 3,598 |
| 193 | 195 | 87 | 166,777 | 38% | 96% | 3,185 | 746 | 372 | 3,557 |
| 194 | 10 | 86 | 166,863 | 38% | 96% | 3,148 | 738 | 368 | 3,516 |
| 195 | 11 | 86 | 166,949 | 38% | 96% | 3,148 | 738 | 368 | 3,516 |
| 196 | 481 | 82 | 167,031 | 38% | 96% | 3,002 | 704 | 351 | 3,353 |
| 197 | 624 | 82 | 167,113 | 38% | 96% | 3,002 | 704 | 351 | 3,353 |
| 198 | 210 | 81 | 167,194 | 39% | 96% | 2,965 | 695 | 347 | 3,312 |
| 199 | 656 | 81 | 167,275 | 39% | 96% | 2,965 | 695 | 347 | 3,312 |
| 200 | 238 | 80 | 167,355 | 39% | 96% | 2,931 | 686 | 342 | 3,273 |

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 201 | 456 | 79 | 167,434 | 39% | 96% | 2,894 | 678 | 338 | 3,232 |
| 202 | 166 | 78 | 167,512 | 39% | 96% | 2,858 | 669 | 334 | 3,192 |
| 203 | 112 | 77 | 167,589 | 39% | 97% | 2,821 | 661 | 330 | 3,151 |
| 204 | 610 | 77 | 167,666 | 40% | 97% | 2,821 | 661 | 330 | 3,151 |
| 205 | 676 | 76 | 167,742 | 40% | 97% | 2,784 | 652 | 325 | 3,110 |
| 206 | 175 | 75 | 167,817 | 40% | 97% | 2,748 | 644 | 321 | 3,069 |
| 207 | 182 | 74 | 167,891 | 40% | 97% | 2,711 | 635 | 317 | 3,028 |
| 208 | 266 | 74 | 167,965 | 40% | 97% | 2,711 | 635 | 317 | 3,028 |
| 209 | 348 | 74 | 168,039 | 41% | 97% | 2,711 | 635 | 317 | 3,028 |
| 210 | 425 | 73 | 168,112 | 41% | 97% | 2,675 | 626 | 312 | 2,987 |
| 211 | 228 | 72 | 168,184 | 41% | 97% | 2,638 | 618 | 308 | 2,946 |
| 212 | 173 | 71 | 168,255 | 41% | 97% | 2,601 | 609 | 304 | 2,905 |
| 213 | 123 | 70 | 168,325 | 41% | 97% | 2,565 | 601 | 300 | 2,864 |
| 214 | 331 | 70 | 168,395 | 42% | 97% | 2,565 | 601 | 300 | 2,864 |
| 215 | 158 | 69 | 168,464 | 42% | 97% | 2,528 | 592 | 295 | 2,823 |
| 216 | 67 | 66 | 168,530 | 42% | 97% | 2,418 | 566 | 282 | 2,701 |
| 217 | 323 | 66 | 168,596 | 42% | 97% | 2,418 | 566 | 282 | 2,701 |
| 218 | 143 | 65 | 168,661 | 42% | 97% | 2,381 | 558 | 278 | 2,660 |
| 219 | 202 | 65 | 168,726 | 43% | 97% | 2,381 | 558 | 278 | 2,660 |
| 220 | 99 | 65 | 168,791 | 43% | 97% | 2,381 | 558 | 278 | 2,660 |
| 221 | 461 | 64 | 168,855 | 43% | 97% | 2,345 | 549 | 274 | 2,619 |
| 222 | 240 | 63 | 168,918 | 43% | 97% | 2,308 | 541 | 270 | 2,578 |
| 223 | 82 | 62 | 168,980 | 43% | 97% | 2,272 | 532 | 265 | 2,537 |
| 224 | 299 | 62 | 169,042 | 44% | 97% | 2,272 | 532 | 265 | 2,537 |
| 225 | 363 | 62 | 169,104 | 44% | 97% | 2,272 | 532 | 265 | 2,537 |
| 226 | 457 | 62 | 169,166 | 44% | 97% | 2,272 | 532 | 265 | 2,537 |
| 227 | 795 | 62 | 169,228 | 44% | 97% | 2,272 | 532 | 265 | 2,537 |
| 228 | 344 | 61 | 169,289 | 44% | 98% | 2,235 | 523 | 261 | 2,496 |
| 229 | 726 | 61 | 169,350 | 45% | 98% | 2,235 | 523 | 261 | 2,496 |
| 230 | 476 | 60 | 169,410 | 45% | 98% | 2,198 | 515 | 257 | 2,455 |
| 231 | 523 | 60 | 169,470 | 45% | 98% | 2,198 | 515 | 257 | 2,455 |
| 232 | 699 | 60 | 169,530 | 45% | 98% | 2,198 | 515 | 257 | 2,455 |
| 233 | 404 | 60 | 169,590 | 45% | 98% | 2,198 | 515 | 257 | 2,455 |
| 234 | 37 | 60 | 169,650 | 46% | 98% | 2,198 | 515 | 257 | 2,455 |
| 235 | 169 | 60 | 169,710 | 46% | 98% | 2,198 | 515 | 257 | 2,455 |
| 236 | 147 | 59 | 169,769 | 46% | 98% | 2,162 | 506 | 253 | 2,414 |
| 237 | 163 | 59 | 169,828 | 46% | 98% | 2,162 | 506 | 253 | 2,414 |
| 238 | 172 | 56 | 169,884 | 46% | 98% | 2,052 | 480 | 240 | 2,291 |
| 239 | 717 | 56 | 169,940 | 46% | 98% | 2,052 | 480 | 240 | 2,291 |
| 240 | 239 | 55 | 169,995 | 47% | 98% | 2,015 | 472 | 235 | 2,250 |
| 241 | 97 | 54 | 170,049 | 47% | 98% | 1,978 | 463 | 231 | 2,210 |
| 242 | 205 | 54 | 170,103 | 47% | 98% | 1,978 | 463 | 231 | 2,210 |
| 243 | 136 | 53 | 170,156 | 47% | 98% | 1,942 | 455 | 227 | 2,169 |
| 244 | 148 | 53 | 170,209 | 47% | 98% | 1,942 | 455 | 227 | 2,169 |
| 245 | 650 | 53 | 170,262 | 48% | 98% | 1,942 | 455 | 227 | 2,169 |
| 246 | 710 | 51 | 170,313 | 48% | 98% | 1,869 | 438 | 218 | 2,087 |
| 247 | 338 | 50 | 170,363 | 48% | 98% | 1,832 | 429 | 214 | 2,046 |
| 248 | 159 | 50 | 170,413 | 48% | 98% | 1,832 | 429 | 214 | 2,046 |
| 249 | 357 | 49 | 170,462 | 48% | 98% | 1,795 | 420 | 210 | 2,005 |
| 250 | 495 | 49 | 170,511 | 49% | 98% | 1,795 | 420 | 210 | 2,005 |

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 251 | 649 | 49 | 170,560 | 49% | 98% | 1,795 | 420 | 210 | 2,005 |
| 252 | 777 | 49 | 170,609 | 49% | 98% | 1,795 | 420 | 210 | 2,005 |
| 253 | 181 | 48 | 170,657 | 49% | 98% | 1,759 | 412 | 205 | 1,964 |
| 254 | 662 | 48 | 170,705 | 49% | 98% | 1,759 | 412 | 205 | 1,964 |
| 255 | 785 | 48 | 170,753 | 50% | 98% | 1,759 | 412 | 205 | 1,964 |
| 256 | 752 | 47 | 170,800 | 50% | 98% | 1,722 | 403 | 201 | 1,923 |
| 257 | 135 | 45 | 170,845 | 50% | 98% | 1,649 | 386 | 193 | 1,841 |
| 258 | 298 | 45 | 170,890 | 50% | 98% | 1,649 | 386 | 193 | 1,841 |
| 259 | 518 | 45 | 170,935 | 50% | 98% | 1,649 | 386 | 193 | 1,841 |
| 260 | 132 | 44 | 170,979 | 51% | 98% | 1,612 | 378 | 188 | 1,800 |
| 261 | 289 | 44 | 171,023 | 51% | 99% | 1,612 | 378 | 188 | 1,800 |
| 262 | 253 | 41 | 171,064 | 51% | 99% | 1,502 | 352 | 175 | 1,678 |
| 263 | 792 | 41 | 171,105 | 51% | 99% | 1,502 | 352 | 175 | 1,678 |
| 264 | 23 | 40 | 171,145 | 51% | 99% | 1,466 | 343 | 171 | 1,637 |
| 265 | 464 | 40 | 171,185 | 52% | 99% | 1,466 | 343 | 171 | 1,637 |
| 266 | 244 | 39 | 171,224 | 52% | 99% | 1,429 | 335 | 167 | 1,596 |
| 267 | 247 | 39 | 171,263 | 52% | 99% | 1,429 | 335 | 167 | 1,596 |
| 268 | 214 | 38 | 171,301 | 52% | 99% | 1,392 | 326 | 163 | 1,555 |
| 269 | 38 | 37 | 171,338 | 52% | 99% | 1,356 | 317 | 158 | 1,514 |
| 270 | 469 | 37 | 171,375 | 53% | 99% | 1,356 | 317 | 158 | 1,514 |
| 271 | 122 | 36 | 171,411 | 53% | 99% | 1,319 | 309 | 154 | 1,473 |
| 272 | 224 | 36 | 171,447 | 53% | 99% | 1,319 | 309 | 154 | 1,473 |
| 273 | 368 | 36 | 171,483 | 53% | 99% | 1,319 | 309 | 154 | 1,473 |
| 274 | 399 | 36 | 171,519 | 53% | 99% | 1,319 | 309 | 154 | 1,473 |
| 275 | 504 | 36 | 171,555 | 54% | 99% | 1,319 | 309 | 154 | 1,473 |
| 276 | 9 | 35 | 171,590 | 54% | 99% | 1,282 | 300 | 150 | 1,432 |
| 277 | 249 | 35 | 171,625 | 54% | 99% | 1,282 | 300 | 150 | 1,432 |
| 278 | 389 | 34 | 171,659 | 54% | 99% | 1,246 | 292 | 146 | 1,391 |
| 279 | 601 | 34 | 171,693 | 54% | 99% | 1,246 | 292 | 146 | 1,391 |
| 280 | 371 | 33 | 171,726 | 54% | 99% | 1,209 | 283 | 141 | 1,350 |
| 281 | 667 | 33 | 171,759 | 55% | 99% | 1,209 | 283 | 141 | 1,350 |
| 282 | 646 | 32 | 171,791 | 55% | 99% | 1,172 | 275 | 137 | 1,309 |
| 283 | 4 | 31 | 171,822 | 55% | 99% | 1,136 | 266 | 133 | 1,268 |
| 284 | 282 | 31 | 171,853 | 55% | 99% | 1,136 | 266 | 133 | 1,268 |
| 285 | 607 | 31 | 171,884 | 55% | 99% | 1,136 | 266 | 133 | 1,268 |
| 286 | 703 | 31 | 171,915 | 56% | 99% | 1,136 | 266 | 133 | 1,268 |
| 287 | 480 | 30 | 171,945 | 56% | 99% | 1,099 | 257 | 128 | 1,228 |
| 288 | 554 | 30 | 171,975 | 56% | 99% | 1,099 | 257 | 128 | 1,228 |
| 289 | 632 | 30 | 172,005 | 56% | 99% | 1,099 | 257 | 128 | 1,228 |
| 290 | 276 | 29 | 172,034 | 56% | 99% | 1,062 | 249 | 124 | 1,187 |
| 291 | 506 | 28 | 172,062 | 57% | 99% | 1,026 | 240 | 120 | 1,146 |
| 292 | 560 | 28 | 172,090 | 57% | 99% | 1,026 | 240 | 120 | 1,146 |
| 293 | 117 | 27 | 172,117 | 57% | 99% | 989 | 232 | 116 | 1,105 |
| 294 | 129 | 26 | 172,143 | 57% | 99% | 953 | 223 | 111 | 1,064 |
| 295 | 287 | 26 | 172,169 | 57% | 99% | 953 | 223 | 111 | 1,064 |
| 296 | 695 | 26 | 172,195 | 58% | 99% | 953 | 223 | 111 | 1,064 |
| 297 | 594 | 25 | 172,220 | 58% | 99% | 916 | 215 | 107 | 1,023 |
| 298 | 683 | 25 | 172,245 | 58% | 99% | 916 | 215 | 107 | 1,023 |
| 299 | 183 | 24 | 172,269 | 58% | 99% | 879 | 206 | 103 | 982 |
| 300 | 265 | 24 | 172,293 | 58% | 99% | 879 | 206 | 103 | 982 |

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 301 | 548 | 24 | 172,317 | 59% | 99% | 879 | 206 | 103 | 982 |
| 302 | 463 | 23 | 172,340 | 59% | 99% | 843 | 197 | 98 | 941 |
| 303 | 290 | 22 | 172,362 | 59% | 99% | 806 | 189 | 94 | 900 |
| 304 | 396 | 22 | 172,384 | 59% | 99% | 806 | 189 | 94 | 900 |
| 305 | 557 | 22 | 172,406 | 59% | 99% | 806 | 189 | 94 | 900 |
| 306 | 571 | 22 | 172,428 | 60% | 99% | 806 | 189 | 94 | 900 |
| 307 | 428 | 21 | 172,449 | 60% | 99% | 769 | 180 | 90 | 859 |
| 308 | 114 | 20 | 172,469 | 60% | 99% | 733 | 172 | 86 | 818 |
| 309 | 515 | 20 | 172,489 | 60% | 99% | 733 | 172 | 86 | 818 |
| 310 | 564 | 20 | 172,509 | 60% | 99% | 733 | 172 | 86 | 818 |
| 311 | 593 | 20 | 172,529 | 61% | 99% | 733 | 172 | 86 | 818 |
| 312 | 725 | 20 | 172,549 | 61% | 99% | 733 | 172 | 86 | 818 |
| 313 | 115 | 20 | 172,569 | 61% | 99% | 733 | 172 | 86 | 818 |
| 314 | 133 | 19 | 172,588 | 61% | 99% | 696 | 163 | 81 | 777 |
| 315 | 743 | 19 | 172,607 | 61% | 99% | 696 | 163 | 81 | 777 |
| 316 | 440 | 18 | 172,625 | 61% | 99% | 659 | 154 | 77 | 737 |
| 317 | 522 | 18 | 172,643 | 62% | 99% | 659 | 154 | 77 | 737 |
| 318 | 768 | 18 | 172,661 | 62% | 99% | 659 | 154 | 77 | 737 |
| 319 | 784 | 18 | 172,679 | 62% | 99% | 659 | 154 | 77 | 737 |
| 320 | 250 | 17 | 172,696 | 62% | 99% | 623 | 146 | 73 | 696 |
| 321 | 433 | 17 | 172,713 | 62% | 99% | 623 | 146 | 73 | 696 |
| 322 | 88 | 16 | 172,729 | 63% | 99% | 586 | 137 | 68 | 655 |
| 323 | 162 | 16 | 172,745 | 63% | 99% | 586 | 137 | 68 | 655 |
| 324 | 279 | 16 | 172,761 | 63% | 100% | 586 | 137 | 68 | 655 |
| 325 | 372 | 16 | 172,777 | 63% | 100% | 586 | 137 | 68 | 655 |
| 326 | 377 | 16 | 172,793 | 63% | 100% | 586 | 137 | 68 | 655 |
| 327 | 465 | 16 | 172,809 | 64% | 100% | 586 | 137 | 68 | 655 |
| 328 | 572 | 16 | 172,825 | 64% | 100% | 586 | 137 | 68 | 655 |
| 329 | 326 | 15 | 172,840 | 64% | 100% | 550 | 129 | 64 | 614 |
| 330 | 479 | 15 | 172,855 | 64% | 100% | 550 | 129 | 64 | 614 |
| 331 | 682 | 15 | 172,870 | 64% | 100% | 550 | 129 | 64 | 614 |
| 332 | 623 | 14 | 172,884 | 65% | 100% | 513 | 120 | 60 | 573 |
| 333 | 693 | 14 | 172,898 | 65% | 100% | 513 | 120 | 60 | 573 |
| 334 | 286 | 14 | 172,912 | 65% | 100% | 513 | 120 | 60 | 573 |
| 335 | 197 | 13 | 172,925 | 65% | 100% | 476 | 112 | 56 | 532 |
| 336 | 346 | 13 | 172,938 | 65% | 100% | 476 | 112 | 56 | 532 |
| 337 | 360 | 13 | 172,951 | 66% | 100% | 476 | 112 | 56 | 532 |
| 338 | 154 | 12 | 172,963 | 66% | 100% | 440 | 103 | 51 | 491 |
| 339 | 747 | 12 | 172,975 | 66% | 100% | 440 | 103 | 51 | 491 |
| 340 | 218 | 11 | 172,986 | 66% | 100% | 403 | 94 | 47 | 450 |
| 341 | 237 | 11 | 172,997 | 66% | 100% | 403 | 94 | 47 | 450 |
| 342 | 271 | 11 | 173,008 | 67% | 100% | 403 | 94 | 47 | 450 |
| 343 | 318 | 11 | 173,019 | 67% | 100% | 403 | 94 | 47 | 450 |
| 344 | 320 | 11 | 173,030 | 67% | 100% | 403 | 94 | 47 | 450 |
| 345 | 291 | 10 | 173,040 | 67% | 100% | 366 | 86 | 43 | 409 |
| 346 | 292 | 10 | 173,050 | 67% | 100% | 366 | 86 | 43 | 409 |
| 347 | 300 | 10 | 173,060 | 68% | 100% | 366 | 86 | 43 | 409 |
| 348 | 395 | 10 | 173,070 | 68% | 100% | 366 | 86 | 43 | 409 |
| 349 | 277 | 9 | 173,079 | 68% | 100% | 330 | 77 | 39 | 368 |
| 350 | 319 | 9 | 173,088 | 68% | 100% | 330 | 77 | 39 | 368 |

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 351 | 622 | 9 | 173,097 | 68% | 100% | 330 | 77 | 39 | 368 |
| 352 | 257 | 9 | 173,106 | 68% | 100% | 330 | 77 | 39 | 368 |
| 353 | 119 | 8 | 173,114 | 69% | 100% | 293 | 69 | 34 | 327 |
| 354 | 156 | 8 | 173,122 | 69% | 100% | 293 | 69 | 34 | 327 |
| 355 | 171 | 8 | 173,130 | 69% | 100% | 293 | 69 | 34 | 327 |
| 356 | 245 | 8 | 173,138 | 69% | 100% | 293 | 69 | 34 | 327 |
| 357 | 302 | 8 | 173,146 | 69% | 100% | 293 | 69 | 34 | 327 |
| 358 | 303 | 8 | 173,154 | 70% | 100% | 293 | 69 | 34 | 327 |
| 359 | 329 | 8 | 173,162 | 70% | 100% | 293 | 69 | 34 | 327 |
| 360 | 343 | 8 | 173,170 | 70% | 100% | 293 | 69 | 34 | 327 |
| 361 | 376 | 8 | 173,178 | 70% | 100% | 293 | 69 | 34 | 327 |
| 362 | 383 | 8 | 173,186 | 70% | 100% | 293 | 69 | 34 | 327 |
| 363 | 526 | 8 | 173,194 | 71% | 100% | 293 | 69 | 34 | 327 |
| 364 | 588 | 8 | 173,202 | 71% | 100% | 293 | 69 | 34 | 327 |
| 365 | 626 | 8 | 173,210 | 71% | 100% | 293 | 69 | 34 | 327 |
| 366 | 638 | 8 | 173,218 | 71% | 100% | 293 | 69 | 34 | 327 |
| 367 | 686 | 8 | 173,226 | 71% | 100% | 293 | 69 | 34 | 327 |
| 368 | 305 | 7 | 173,233 | 72% | 100% | 256 | 60 | 30 | 286 |
| 369 | 321 | 7 | 173,240 | 72% | 100% | 256 | 60 | 30 | 286 |
| 370 | 366 | 7 | 173,247 | 72% | 100% | 256 | 60 | 30 | 286 |
| 371 | 385 | 7 | 173,254 | 72% | 100% | 256 | 60 | 30 | 286 |
| 372 | 477 | 7 | 173,261 | 72% | 100% | 256 | 60 | 30 | 286 |
| 373 | 625 | 7 | 173,268 | 73% | 100% | 256 | 60 | 30 | 286 |
| 374 | 691 | 7 | 173,275 | 73% | 100% | 256 | 60 | 30 | 286 |
| 375 | 704 | 7 | 173,282 | 73% | 100% | 256 | 60 | 30 | 286 |
| 376 | 246 | 6 | 173,288 | 73% | 100% | 220 | 51 | 26 | 246 |
| 377 | 334 | 6 | 173,294 | 73% | 100% | 220 | 51 | 26 | 246 |
| 378 | 341 | 6 | 173,300 | 74% | 100% | 220 | 51 | 26 | 246 |
| 379 | 387 | 6 | 173,306 | 74% | 100% | 220 | 51 | 26 | 246 |
| 380 | 521 | 6 | 173,312 | 74% | 100% | 220 | 51 | 26 | 246 |
| 381 | 608 | 6 | 173,318 | 74% | 100% | 220 | 51 | 26 | 246 |
| 382 | 614 | 6 | 173,324 | 74% | 100% | 220 | 51 | 26 | 246 |
| 383 | 91 | 5 | 173,329 | 75% | 100% | 183 | 43 | 21 | 205 |
| 384 | 141 | 5 | 173,334 | 75% | 100% | 183 | 43 | 21 | 205 |
| 385 | 167 | 5 | 173,339 | 75% | 100% | 183 | 43 | 21 | 205 |
| 386 | 232 | 5 | 173,344 | 75% | 100% | 183 | 43 | 21 | 205 |
| 387 | 394 | 5 | 173,349 | 75% | 100% | 183 | 43 | 21 | 205 |
| 388 | 450 | 5 | 173,354 | 75% | 100% | 183 | 43 | 21 | 205 |
| 389 | 458 | 5 | 173,359 | 76% | 100% | 183 | 43 | 21 | 205 |
| 390 | 510 | 5 | 173,364 | 76% | 100% | 183 | 43 | 21 | 205 |
| 391 | 631 | 5 | 173,369 | 76% | 100% | 183 | 43 | 21 | 205 |
| 392 | 503 | 5 | 173,374 | 76% | 100% | 183 | 43 | 21 | 205 |
| 393 | 199 | 4 | 173,378 | 76% | 100% | 147 | 34 | 17 | 164 |
| 394 | 211 | 4 | 173,382 | 77% | 100% | 147 | 34 | 17 | 164 |
| 395 | 227 | 4 | 173,386 | 77% | 100% | 147 | 34 | 17 | 164 |
| 396 | 312 | 4 | 173,390 | 77% | 100% | 147 | 34 | 17 | 164 |
| 397 | 382 | 4 | 173,394 | 77% | 100% | 147 | 34 | 17 | 164 |
| 398 | 412 | 4 | 173,398 | 77% | 100% | 147 | 34 | 17 | 164 |
| 399 | 417 | 4 | 173,402 | 78% | 100% | 147 | 34 | 17 | 164 |
| 400 | 447 | 4 | 173,406 | 78% | 100% | 147 | 34 | 17 | 164 |

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 401 | 451 | 4 | 173,410 | 78% | 100% | 147 | 34 | 17 | 164 |
| 402 | 482 | 4 | 173,414 | 78% | 100% | 147 | 34 | 17 | 164 |
| 403 | 528 | 4 | 173,418 | 78% | 100% | 147 | 34 | 17 | 164 |
| 404 | 545 | 4 | 173,422 | 79% | 100% | 147 | 34 | 17 | 164 |
| 405 | 581 | 4 | 173,426 | 79% | 100% | 147 | 34 | 17 | 164 |
| 406 | 637 | 4 | 173,430 | 79% | 100% | 147 | 34 | 17 | 164 |
| 407 | 689 | 4 | 173,434 | 79% | 100% | 147 | 34 | 17 | 164 |
| 408 | 694 | 4 | 173,438 | 79% | 100% | 147 | 34 | 17 | 164 |
| 409 | 709 | 4 | 173,442 | 80% | 100% | 147 | 34 | 17 | 164 |
| 410 | 731 | 4 | 173,446 | 80% | 100% | 147 | 34 | 17 | 164 |
| 411 | 755 | 4 | 173,450 | 80% | 100% | 147 | 34 | 17 | 164 |
| 412 | 49 | 3 | 173,453 | 80% | 100% | 110 | 26 | 13 | 123 |
| 413 | 212 | 3 | 173,456 | 80% | 100% | 110 | 26 | 13 | 123 |
| 414 | 223 | 3 | 173,459 | 81% | 100% | 110 | 26 | 13 | 123 |
| 415 | 409 | 3 | 173,462 | 81% | 100% | 110 | 26 | 13 | 123 |
| 416 | 427 | 3 | 173,465 | 81% | 100% | 110 | 26 | 13 | 123 |
| 417 | 435 | 3 | 173,468 | 81% | 100% | 110 | 26 | 13 | 123 |
| 418 | 541 | 3 | 173,471 | 81% | 100% | 110 | 26 | 13 | 123 |
| 419 | 552 | 3 | 173,474 | 82% | 100% | 110 | 26 | 13 | 123 |
| 420 | 629 | 3 | 173,477 | 82% | 100% | 110 | 26 | 13 | 123 |
| 421 | 657 | 3 | 173,480 | 82% | 100% | 110 | 26 | 13 | 123 |
| 422 | 672 | 3 | 173,483 | 82% | 100% | 110 | 26 | 13 | 123 |
| 423 | 678 | 3 | 173,486 | 82% | 100% | 110 | 26 | 13 | 123 |
| 424 | 769 | 3 | 173,489 | 82% | 100% | 110 | 26 | 13 | 123 |
| 425 | 255 | 3 | 173,492 | 83% | 100% | 110 | 26 | 13 | 123 |
| 426 | 22 | 2 | 173,494 | 83% | 100% | 73 | 17 | 9 | 82 |
| 427 | 152 | 2 | 173,496 | 83% | 100% | 73 | 17 | 9 | 82 |
| 428 | 161 | 2 | 173,498 | 83% | 100% | 73 | 17 | 9 | 82 |
| 429 | 184 | 2 | 173,500 | 83% | 100% | 73 | 17 | 9 | 82 |
| 430 | 204 | 2 | 173,502 | 84% | 100% | 73 | 17 | 9 | 82 |
| 431 | 213 | 2 | 173,504 | 84% | 100% | 73 | 17 | 9 | 82 |
| 432 | 262 | 2 | 173,506 | 84% | 100% | 73 | 17 | 9 | 82 |
| 433 | 263 | 2 | 173,508 | 84% | 100% | 73 | 17 | 9 | 82 |
| 434 | 293 | 2 | 173,510 | 84% | 100% | 73 | 17 | 9 | 82 |
| 435 | 315 | 2 | 173,512 | 85% | 100% | 73 | 17 | 9 | 82 |
| 436 | 335 | 2 | 173,514 | 85% | 100% | 73 | 17 | 9 | 82 |
| 437 | 339 | 2 | 173,516 | 85% | 100% | 73 | 17 | 9 | 82 |
| 438 | 359 | 2 | 173,518 | 85% | 100% | 73 | 17 | 9 | 82 |
| 439 | 411 | 2 | 173,520 | 85% | 100% | 73 | 17 | 9 | 82 |
| 440 | 430 | 2 | 173,522 | 86% | 100% | 73 | 17 | 9 | 82 |
| 441 | 431 | 2 | 173,524 | 86% | 100% | 73 | 17 | 9 | 82 |
| 442 | 448 | 2 | 173,526 | 86% | 100% | 73 | 17 | 9 | 82 |
| 443 | 467 | 2 | 173,528 | 86% | 100% | 73 | 17 | 9 | 82 |
| 444 | 500 | 2 | 173,530 | 86% | 100% | 73 | 17 | 9 | 82 |
| 445 | 535 | 2 | 173,532 | 87% | 100% | 73 | 17 | 9 | 82 |
| 446 | 546 | 2 | 173,534 | 87% | 100% | 73 | 17 | 9 | 82 |
| 447 | 549 | 2 | 173,536 | 87% | 100% | 73 | 17 | 9 | 82 |
| 448 | 561 | 2 | 173,538 | 87% | 100% | 73 | 17 | 9 | 82 |
| 449 | 584 | 2 | 173,540 | 87% | 100% | 73 | 17 | 9 | 82 |
| 450 | 599 | 2 | 173,542 | 88% | 100% | 73 | 17 | 9 | 82 |

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 451 | 617 | 2 | 173,544 | 88% | 100% | 73 | 17 | 9 | 82 |
| 452 | 621 | 2 | 173,546 | 88% | 100% | 73 | 17 | 9 | 82 |
| 453 | 627 | 2 | 173,548 | 88% | 100% | 73 | 17 | 9 | 82 |
| 454 | 636 | 2 | 173,550 | 88% | 100% | 73 | 17 | 9 | 82 |
| 455 | 660 | 2 | 173,552 | 89% | 100% | 73 | 17 | 9 | 82 |
| 456 | 671 | 2 | 173,554 | 89% | 100% | 73 | 17 | 9 | 82 |
| 457 | 677 | 2 | 173,556 | 89% | 100% | 73 | 17 | 9 | 82 |
| 458 | 702 | 2 | 173,558 | 89% | 100% | 73 | 17 | 9 | 82 |
| 459 | 720 | 2 | 173,560 | 89% | 100% | 73 | 17 | 9 | 82 |
| 460 | 738 | 2 | 173,562 | 89% | 100% | 73 | 17 | 9 | 82 |
| 461 | 750 | 2 | 173,564 | 90% | 100% | 73 | 17 | 9 | 82 |
| 462 | 761 | 2 | 173,566 | 90% | 100% | 73 | 17 | 9 | 82 |
| 463 | 765 | 2 | 173,568 | 90% | 100% | 73 | 17 | 9 | 82 |
| 464 | 767 | 2 | 173,570 | 90% | 100% | 73 | 17 | 9 | 82 |
| 465 | 782 | 2 | 173,572 | 90% | 100% | 73 | 17 | 9 | 82 |
| 466 | 791 | 2 | 173,574 | 91% | 100% | 73 | 17 | 9 | 82 |
| 467 | 619 | 2 | 173,576 | 91% | 100% | 73 | 17 | 9 | 82 |
| 468 | 419 | 2 | 173,578 | 91% | 100% | 73 | 17 | 9 | 82 |
| 469 | 13 | 1 | 173,579 | 91% | 100% | 37 | 9 | 4 | 41 |
| 470 | 55 | 1 | 173,580 | 91% | 100% | 37 | 9 | 4 | 41 |
| 471 | 71 | 1 | 173,581 | 92% | 100% | 37 | 9 | 4 | 41 |
| 472 | 116 | 1 | 173,582 | 92% | 100% | 37 | 9 | 4 | 41 |
| 473 | 180 | 1 | 173,583 | 92% | 100% | 37 | 9 | 4 | 41 |
| 474 | 188 | 1 | 173,584 | 92% | 100% | 37 | 9 | 4 | 41 |
| 475 | 231 | 1 | 173,585 | 92% | 100% | 37 | 9 | 4 | 41 |
| 476 | 251 | 1 | 173,586 | 93% | 100% | 37 | 9 | 4 | 41 |
| 477 | 252 | 1 | 173,587 | 93% | 100% | 37 | 9 | 4 | 41 |
| 478 | 254 | 1 | 173,588 | 93% | 100% | 37 | 9 | 4 | 41 |
| 479 | 269 | 1 | 173,589 | 93% | 100% | 37 | 9 | 4 | 41 |
| 480 | 295 | 1 | 173,590 | 93% | 100% | 37 | 9 | 4 | 41 |
| 481 | 386 | 1 | 173,591 | 94% | 100% | 37 | 9 | 4 | 41 |
| 482 | 446 | 1 | 173,592 | 94% | 100% | 37 | 9 | 4 | 41 |
| 483 | 460 | 1 | 173,593 | 94% | 100% | 37 | 9 | 4 | 41 |
| 484 | 491 | 1 | 173,594 | 94% | 100% | 37 | 9 | 4 | 41 |
| 485 | 496 | 1 | 173,595 | 94% | 100% | 37 | 9 | 4 | 41 |
| 486 | 498 | 1 | 173,596 | 95% | 100% | 37 | 9 | 4 | 41 |
| 487 | 556 | 1 | 173,597 | 95% | 100% | 37 | 9 | 4 | 41 |
| 488 | 568 | 1 | 173,598 | 95% | 100% | 37 | 9 | 4 | 41 |
| 489 | 587 | 1 | 173,599 | 95% | 100% | 37 | 9 | 4 | 41 |
| 490 | 595 | 1 | 173,600 | 95% | 100% | 37 | 9 | 4 | 41 |
| 491 | 598 | 1 | 173,601 | 96% | 100% | 37 | 9 | 4 | 41 |
| 492 | 613 | 1 | 173,602 | 96% | 100% | 37 | 9 | 4 | 41 |
| 493 | 640 | 1 | 173,603 | 96% | 100% | 37 | 9 | 4 | 41 |
| 494 | 642 | 1 | 173,604 | 96% | 100% | 37 | 9 | 4 | 41 |
| 495 | 645 | 1 | 173,605 | 96% | 100% | 37 | 9 | 4 | 41 |
| 496 | 658 | 1 | 173,606 | 96% | 100% | 37 | 9 | 4 | 41 |
| 497 | 661 | 1 | 173,607 | 97% | 100% | 37 | 9 | 4 | 41 |
| 498 | 680 | 1 | 173,608 | 97% | 100% | 37 | 9 | 4 | 41 |
| 499 | 712 | 1 | 173,609 | 97% | 100% | 37 | 9 | 4 | 41 |
| 500 | 714 | 1 | 173,610 | 97% | 100% | 37 | 9 | 4 | 41 |

**GHG Significance Threshold Development - Residential (514) Projects - Using OPR Data (2007-2008)**
**DRAFT - FOR DISCUSSION PURPOSES ONLY**

| | Project ID# | Resi size in units | Cum. resi units | # of project capture rate | unit capture rate | Direct CO2 (MT/yr)[1] | Annual Electricity Usage[2] (8580kWh/unit 8.58 MW/unit) | Annual Electricity Usage CO2e (1,100 lbs/MWh)[3] (MT/yr) | Total CO2e (MT/y) |
|---|---|---|---|---|---|---|---|---|---|
| 501 | 718 | 1 | 173,611 | 97% | 100% | 37 | 9 | 4 | 41 |
| 502 | 722 | 1 | 173,612 | 98% | 100% | 37 | 9 | 4 | 41 |
| 503 | 724 | 1 | 173,613 | 98% | 100% | 37 | 9 | 4 | 41 |
| 504 | 732 | 1 | 173,614 | 98% | 100% | 37 | 9 | 4 | 41 |
| 505 | 733 | 1 | 173,615 | 98% | 100% | 37 | 9 | 4 | 41 |
| 506 | 744 | 1 | 173,616 | 98% | 100% | 37 | 9 | 4 | 41 |
| 507 | 746 | 1 | 173,617 | 99% | 100% | 37 | 9 | 4 | 41 |
| 508 | 759 | 1 | 173,618 | 99% | 100% | 37 | 9 | 4 | 41 |
| 509 | 775 | 1 | 173,619 | 99% | 100% | 37 | 9 | 4 | 41 |
| 510 | 781 | 1 | 173,620 | 99% | 100% | 37 | 9 | 4 | 41 |
| 511 | 787 | 1 | 173,621 | 99% | 100% | 37 | 9 | 4 | 41 |
| 512 | 790 | 1 | 173,622 | 100% | 100% | 37 | 9 | 4 | 41 |
| 513 | 793 | 1 | 173,623 | 100% | 100% | 37 | 9 | 4 | 41 |
| 514 | 361 | 0 | 173,623 | 100% | 100% | 0 | 0 | 0 | 0 |
| | | | | | TOTALs | 6,350,458 | 1,489,685 | 743,130 | 7,093,587 |

1. Direct CO2 emissions calculated using the URBEMIS model for CO2 emissions only.
2. Annual Electricity Usage based on annual electricity and water-related energy use in Southern California from the California Energy Consumption Data Management System (http://ecdms.energy.ca.gov/elecbycounty.asp#results)
3. Annual Statewide Energy Intensity from the "Reporting and Verification of GHG Emissions in Electricity Sector" (California Public Utilities Commmission and California Energy Commission Joint Decision, September 2007)

# Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #13

August 26, 2009

SCAQMD

Diamond Bar, California

# Agenda Item #2 – Updated GHG Threshold Analysis for Residential/Commercial Development Projects

- Summary of July 29th WG meeting presentation
  - ✓ OPR database = 798 projects
  - ✓ After removing GP/MP/SP projects, remaining projects = 738
  - ✓ Analysis separated residential & commercial projects into separate databases
    - Mixed use projects separated into their component parts & added to the appropriate database
    - Did not include office projects

# Agenda Item #2 – Updated GHG Threshold Analysis for Residential/Commercial Development Projects *(continued)*

- ✓ Analysis separated residential & commercial projects into separate databases *(cont.)*
  - 90% emissions capture rate for residential = 8,580 - 9,151 MTCO2e/yr
  - 90% capture rate for commercial = 2,427 – 3,041 MTCO2e/yr
  - Staff recommended & WG agreed the analysis should be based only on the OPR database

# Agenda Item #2 – Updated GHG Threshold Analysis for Residential/Commercial Development Projects *(continued)*

- Feedback from WG members included:
  - ✓ Need to re-evaluate the largest projects as they might not represent individual projects
  - ✓ Should not separate mixed use projects into their component parts as this does not represent an actual project (economies of scale with mixed use projects – less VTs)
  - ✓ Combine all projects, including mixed use, into a single database
  - ✓ GHG ST threshold should encourage mixed use development

# Agenda Item #2 – Updated GHG Threshold Analysis for Residential/Commercial Development Projects *(continued)*

- Additional analysis conducted based on WG comments
- Further review of OPR database resulted in removing 27 additional GP/MP/SP projects, remaining projects = 711
- 1st scenario analysis consisted of combining all projects into a single database
  - ✓ Same assumptions as 1st analysis used, i.e.,
    - Construction GHG emissions amortized over 30 years
    - Direct GHG emissions calculated using URBEMIS
    - Indirect electricity/water use GHG emissions calculated
    - Direct & indirect emissions summed & 90th percentile identified
  - ✓ 90th percentile ranged from 2,983 – 3,143 MTCO2e/yr

# Agenda Item #2 – Updated GHG Threshold Analysis for Residential/Commercial Development Projects *(continued)*

- 2nd scenario analysis consisted of a residential only plus mixed use residential database
  - ✓ Same assumptions as 1st analysis used
  - ✓ Activated double counting & pass by functions
  - ✓ 90th percentile for residential ranged from 3,310 – 3,596 MTCO2e/yr
- 3rd scenario analysis consisted of a commercial only plus mixed us commercial database
  - ✓ Same assumptions as 1st analysis used
  - ✓ Activated double counting & pass by functions
  - ✓ 90th percentile for commercial ranged from 1,390 – 1,481 MTCO2e/yr

# Agenda Item #2 – Updated GHG Threshold Analysis for Residential/Commercial Development Projects *(continued)*

- Discussion/considerations for deriving GHG STs for residential, commercial & mixed use project
  - ✓ Develop a single GHG ST be developed based on the 90% capture rate from the combined database?
  - ✓ Develop separate thresholds for residential & commercial?
  - ✓ Develop separate residential & commercial GHG STs, which could be used to develop a weighted GHG ST for mixed use projects based on the GHG contributions from each project
  - ✓ Other recommendations?

# Agenda Item #3 – Discussion of Tier 4 Performance Standards Approach

- WG members requested staff begin work on the Tier 4 performance standards (PFs)
- Initial considerations for developing the Tier 4 – compliance option #1: uniform percent emission reduction target objective
  - ✓ Future projected emissions (construction amortized over 30 years + operational)
  - ✓ % GHG emission reductions

# Agenda Item #3 – Discussion of Tier 4 Performance

- Future projected emissions
  - ✓ CEQA existing setting (baseline) definition does not change
  - ✓ Same assumptions as the most recently adopted AB32 Scoping Plan
    - Adopted regulations
    - Latest planning assumptions
    - Emission quantification methods

# Agenda Item #3 – Discussion of Tier 4 Performance Standards Approach

- % GHG emission reduction target
- ✓ The higher of the following 2 approaches:
  1. Achieve project GHG emission reduction ≥ overall goal of the most recently adopted AB 32 Scoping Plan (currently ~ 30%),

     Or

  2. Aggregate % GHG reductions from all proposed measures applicable to the source category under evaluation
- If GHG emission reduction less than either % reduction target derived from above, GHG impacts are significant
- Other approaches?
- Discussion

# Agenda Items #4, #5, & #6

- Other topics?
- Closing remarks
- Other business
- Next working group meeting scheduled for 9/23/09, 10:00 a.m.

# Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13

**Wednesday, August 26, 2009**
**SCAQMD, Room GB, 10:00 AM – 12:00 PM**

## 1. Welcome and Introductions

Dr. Elaine Chang, Deputy Executive Officer of SCAQMD's Planning Rule Development and Area Sources Division, called the meeting to order at 10:10 A.M. and asked for self introductions of the working group members and SCAQMD staff. Dr. Chang then presented an overview of the meeting agenda.

## 2. Updated GHG Threshold Analysis for Residential/Commercial/Mixed Use Development Projects

Dr. Steve Smith, Program Supervisor of the CEQA section in SCAQMD's Planning Rule Development and Area Sources Division, provided a summary of the July 29, 2009 GHG Working Group meeting. On June 15, 2009, SCAQMD staff received a database from the Office of Planning and Research (OPR) of 798 projects with environmental impact reports (EIRs) and mitigated negative declarations (MNDs) prepared and submitted to OPR in the years 2007 and 2008. Staff reviewed the database and eliminated 60 projects because: they did not provide sufficiently detailed project descriptions (e.g., square footage, units, etc.) were zone changes or modifications, were CEQA documents for redundant projects (i.e., subsequent CEQA documents for the same project), and/or were regional general/master/specific plans. General/master/specific plans documents were specifically excluded because they are comprised of large regional multiuse projects as opposed to individual projects undertaken at the local level.

Direct carbon dioxide (CO2) emissions from the remaining 738 projects were calculated using the Urban Emissions 2007 (URBEMIS2007) model and presented in an Excel spreadsheet. Separate URBEMIS2007 analyses were performed for residential and commercial projects using the model's default factors except that the default trip rate factor was modified to include weighted trip rates to reflect trips during the week days and weekends according to land use type. Mixed use projects were divided into their component parts, either residential or commercial and then incorporated into the appropriate dataset. The analysis did not include office projects. Indirect CO2 equivalent (CO2e) emissions generated from electricity usage and water-related electricity usage were then calculated for each project in the residential and commercial databases. Natural gas usage is already included in the direct emissions from area sources calculated in the URBEMIS2007 model. Electricity and water-related electricity usage emission factors for the residential sector were specific for the southern California region, but only statewide emission factors were available for the commercial sector. The direct and indirect CO2e emissions were then summed for all projects in both the residential and commercial databases to obtain total annual CO2e emissions. The 90 percent capture rate for residential projects ranged from 8,580 metric tons (MT)CO2e/year (210 units) to 9,151 MTCO2e/year (224 units). The 90 percent capture rate for commercial projects ranged from 2,427 MTCO2e/year (126,705 sq. ft.) to 3,041

MTCO2e/year (158,930 sq. ft.). Staff and the working group concurred that the analysis should be based only on the OPR database.

Based on feedback from the working group, additional analysis was conducted. Further review of the OPR database resulted in removing 27 additional general plan/master plan/specific plan projects. Therefore, the additional analysis was conducted on the remaining 711 projects. The first scenario analysis consisted of combining all projects into a single database. The same assumptions as the first analysis were used, including:

- Construction GHG emissions amortized over 30 years
- Direct GHG emissions calculated using URBEMIS
- Indirect electricity/water use GHG emissions calculated
- Direct and indirect emissions assumed and 90$^{th}$ percentile identified.

The 90 percent capture rate for residential/commercial projects ranged from 2,983 MTCO2e/year to 3,143 MTCO2e/year. A second scenario analysis was conducted using a residential only plus mixed use residential database:

- Same assumptions as first analysis were used
- Activated double counting and pass by functions.

The 90 percent capture rate for residential/mixed use residential projects ranged from 3,310 MTCO2e/year to 3,596 MTCO2e/year. A third scenario analysis was conducted using a commercial only plus mixed use commercial database:

- Same assumptions as first analysis were used
- Activated double counting and pass by functions.

The 90 percent capture rate for commercial/mixed use commercial projects ranged from 1,390 MTCO2e/year to 1,481 MTCO2e/year.

The working group was then asked for comments and considerations regarding the development of a significance threshold for commercial, residential and mixed use projects, and was provided with the following possible scenarios:

- Develop a single GHG significance threshold based on the 90 percent capture rate from the combined database
- Develop separate thresholds for residential and commercial
- Develop separate residential and commercial GHG significance thresholds, which could be used to develop a weighted GHG significance threshold for mixed use projects based on the GHG contributions from each project.

**Comments/Questions on the Residential/Commercial GHG Significance Threshold Survey**

- A comment was made that we should not refer to the number as a threshold, but as a screening level.
- A working group member commented that a mixed use approach technically makes sense, however, when working on a General Plan level, a percent reduction approach may be more appropriate.

**3. Recent Attorney General's Comments on GHGs for General Plans**

On July 13, 2009, the California Attorney General's (AG) Office submitted a comment letter to the County of Sacramento (County) regarding its General Plan. The comment letter noted that the CEQA document analyzed the impacts of future growth using the assumption that future growth would be twice as much as would be necessary to meet projected future demand. However, the AG's comment letter noted that the County needs to more aggressively mitigate impacts through: feasible alternatives, adoption of a phased development approach, and city-county coordination to optimize growth and reduce GHG emissions. With regard to mitigation measures, efficiency-based performance standards are acceptable as long as the lead agency is able to show that those performance standards, together with all other measures and strategies, are likely to achieve the emission reduction targets in the General Plan. In addition, the AG's letter recommended that the GHG mitigation measures in the Climate Action Plan to be developed should be included in the General Plan and should demonstrate a reduction in vehicle miles traveled (VMT).

**Comments on Attorney General's Comment Letter**

- One working group member noted that the General Plan update is a good time to include a GHG emission reduction element.
- A second working group member agreed stating, "substantial evidence" required by CEQA is best proven through General Plan compliance.
- A comment was made that if the current results of the analysis are used to establish numerical thresholds, they do not fulfill the "substantial evidence" test. Further, if the current results are used as numerical thresholds a large number of projects would fall under such thresholds and would not be required to implement measures to reduce GHG emissions. All projects should be subject to some kind of GHG reduction requirement (or performance standard). Staff responded that one option could be similar to an option being considered by by Bay Area AQMD that requires all projects to comply with a GHG reduction performance standard based on the size of the projects, with projects below a certain size being required to reduce GHG emissions by five percent. However, if all projects must incorporate GHG reduction measures to reduce GHG emissions by a certain percent, it would be more appropriate to establish a rule, regulation or state law similar to Title 24 requirements, which would be applied to existing and new projects over time.

## 4. General Comments

- A question was asked regarding whether or not the SCAQMD is coordinating its GHG significance threshold development process with similar efforts by other air districts. Staff is monitoring GHG significance threshold proposals currently in progress by other air districts through CAPCOA and directly with some of the other air districts. However, it is not necessarily expected that SCAQMD staff will develop the same or similar thresholds as other districts or use the same methodologies to develop thresholds. Staff reiterated, however, that the best approach would be statewide GHG threshold(s) developed at the state level.

- A working group member asked when staff anticipates taking a GHG significance threshold proposal for residential and commercial projects to the Governing Board for adoption. Staff responded that the tentative schedule is to take significance threshold(s) for residential and commercial projects to the Board for consideration in fall 2009.

- A follow-up question was asked regarding what the GHG significance threshold would "look like?" Although there was initial reluctance on staff's part to develop a numerical GHG significance threshold, SCAQMD's staff's tiered approach recommendation, which includes a numerical threshold (Tier 3) appeared to be an acceptable proposal by most stakeholders because it requires a quantitative GHG analysis for all nonexempt projects in order to justify the significance determination, which may then trigger mitigation requirements, consistent with current CEQA requirements.

- A second follow-up question was asked regarding whether or not those projects below the numerical significance threshold would still be required to comply with some kind of performance standard (e.g., percent reduction.). Staff responded that staff's currently recommended tiered approach does not include a requirement for all projects to reduce GHG emissions by a certain percent and reiterated that a rule, regulation, or statewide law would be more appropriate to obtain GHG emission reductions from all projects.

- From a "legal perspective," one working group member expressed the concern that a numerical threshold could be construed as a de minimus level, which is not allowed under CEQA. Any numerical GHG significance threshold must be legally defensible. In response, a second working group member suggested that staff perform a review and develop criteria for what would be a legally defensible approach for developing a numerical GHG significance threshold.

- A working group member believed a 90 percent emission capture rate was not an appropriate cut-off because projects below that level (e.g., 210 residential units) are still large projects that should be required to reduce GHG emissions "given the context of the GHG problem." A possible solution was suggested that using a higher emissions capture rate or, alternatively, using a project size capture rate could be the basis for establishing a lower numerical threshold. This approach may be more legally defensible and less vulnerable to a "fair argument" legal standard.

- One working group member reminded the working group of the importance in accurately calculating GHG emissions (i.e., what sources should be considered when quantifying GHG emissions from a project). Further, since the URBEMIS model is currently the primary tool used to quantify GHG emissions (and construction and operational emissions), it needs to be updated to provide the most accurate method of quantifying GHG emissions. Staff agreed that the model needs to be updated to more accurately quantify GHG emissions. A scope of work has been drafted to revise the GHG component to more accurately quantify GHG emissions. There are, however, some issues that need to be resolved before the model can be updated. Another working group member agreed that more accurate quantification of GHG emissions is necessary, noting that if GHG emissions are not accurately calculated there may be problems determining when mitigation measures should be imposed.

- A follow-up concern was expressed that the assumption that all trips are new trips does not accurately reflect the real world situation. For example, trips associated with new residential units are not necessarily new trips, but may actually be displaced trips that existed somewhere else. In this situation, staff recommends that projects should to be evaluated on a case-by-case basis and, if there is enough evidence to support the assumption that trips generated by a new projects are displaced, then this assumption could be used in the analysis.

**5. Other Topics**

None.

**6. Closing Remarks**

The next meeting is scheduled for August 26, 2009 in meeting room GB at 10:00 AM.

**7. Other Business**

None.

**MEMBERS PRESENT (14)**

James Arnone – Latham & Watkins – *on conference call*
Debbie Stevens – Refineries
Doug Feremenga – San Bernardino County Land Use Planning Department
Patrick Griffith for Greg Adams – City of Los Angeles Bureau of Sanitation
Michael Hendrix – Association of Environmental Professionals (AEP)
Shari Libicki – Green Developers Coalition
Clayton Miller – Construction Industry Air Quality Coalition (CIAQC)
Peter Okurowski – Pillsbury Law– *on conference call*
Bill Piazza – Los Angeles Unified School District (LAUSD)
Janill Richards –Attorney General's Office – *on conference call*
Matt Vespa – Center for Biological Diversity (CBD) – *on conference call*
Carla Walecka – Realtors Committee on Air Quality (RCAQ)

Lee Wallace – Sempra Energy Utilities
Michael Wang for Cathy Reheis-Boyd – Western State Petroleum Association (WSPA)

**OTHERS PRESENT (8)**

Lilia Barker – LADWP - – *on conference call*
Marcia Baverman for Debbie Stevens – Environmental Audit, Inc.
Adam Moke – City of Los Angeles Bureau of Sanitation
Danielle Morone – Gatzke, Dillon & Balance, LLP – *on conference call*
Haseeb Qureshi – Urban Crossroads
Greg Tholen – Bay Area Air Quality Management District – *on conference call*
Christina Tran – LA County Planning – *on conference call*
Suzanne Wilson – Public Utilities Department

**AQMD STAFF PRESENT (8)**

Elaine Chang – Deputy Executive Officer
Steve Smith – Program Supervisor
Daniel Garcia – Air Quality Specialist
Jeff Inabinet – Air Quality Specialist
James Koizumi – Air Quality Specialist
Mike Krause – Air Quality Specialist
Gordon Mize – Air Quality Specialist
Barbara Radlein – Air Quality Specialist

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 443 | 2,995 | 75,000 | 620,000 | 695,000 | 104,047 | 12,849 | 5,279 | 122,174 | 122,174 | 0% | 3% |
| 2 | 25 | 1,677 | 0 | 0 | 0 | 61,334 | 7,194 | 0 | 68,528 | 190,702 | 0% | 5% |
| 3 | 644 | 1,525 | 0 | 0 | 0 | 55,775 | 6,542 | 0 | 62,317 | 253,019 | 0% | 7% |
| 4 | 471 | 1,500 | 0 | 0 | 0 | 54,860 | 6,435 | 0 | 61,295 | 314,315 | 1% | 9% |
| 5 | 12 | 0 | 1,490,000 | 1,495,000 | 2,985,000 | 34,447 | 0 | 22,671 | 57,118 | 371,433 | 1% | 10% |
| 6 | 8 | 1,297 | 0 | 113,573 | 113,573 | 43,286 | 5,564 | 863 | 49,713 | 421,145 | 1% | 12% |
| 7 | 31 | 232 | 0 | 2,250,946 | 2,250,946 | 28,997 | 995 | 17,096 | 47,088 | 468,233 | 1% | 13% |
| 8 | 101 | 1,208 | 100,000 | 50,000 | 150,000 | 40,739 | 5,182 | 1,139 | 47,060 | 515,294 | 1% | 15% |
| 9 | 66 | 1,115 | 0 | 0 | 0 | 40,779 | 4,783 | 0 | 45,563 | 560,856 | 1% | 16% |
| 10 | 762 | 1093 | 0 | 0 | 0 | 39,975 | 4,689 | 0 | 44,664 | 605,520 | 1% | 17% |
| 11 | 125 | 1,086 | 0 | 0 | 0 | 39,719 | 4,659 | 0 | 44,378 | 649,898 | 2% | 18% |
| 12 | 111 | 1074 | 0 | 0 | 0 | 39,280 | 4,607 | 0 | 43,887 | 693,785 | 2% | 20% |
| 13 | 100 | 603 | 0 | 1,200,000 | 1,200,000 | 31,056 | 2,587 | 9,114 | 42,757 | 736,542 | 2% | 21% |
| 14 | 110 | 1,035 | 0 | 0 | 0 | 37,854 | 4,440 | 0 | 42,294 | 778,836 | 2% | 22% |
| 15 | 675 | 955 | 0 | 400,000 | 400,000 | 34,888 | 4,097 | 3,038 | 42,023 | 820,858 | 2% | 23% |
| 16 | 336 | 980 | 0 | 0 | 0 | 35,842 | 4,204 | 0 | 40,046 | 860,904 | 2% | 24% |
| 17 | 16 | 721 | 0 | 778,500 | 778,500 | 30,880 | 3,093 | 5,913 | 39,886 | 900,790 | 2% | 25% |
| 18 | 285 | 400 | 1,400,000 | 46,000 | 1,446,000 | 26,796 | 1,716 | 10,982 | 39,495 | 940,285 | 3% | 27% |
| 19 | 109 | 1,000 | 44,000 | 30,000 | 74,000 | 33,247 | 4,290 | 562 | 38,099 | 978,384 | 3% | 28% |
| 20 | 138 | 903 | 0 | 139,600 | 139,600 | 30,716 | 3,874 | 1,060 | 35,650 | 1,014,034 | 3% | 29% |
| 21 | 6 | 742 | 0 | 477,142 | 477,142 | 28,694 | 3,183 | 3,624 | 35,501 | 1,049,535 | 3% | 30% |
| 22 | 381 | 854 | 0 | 0 | 0 | 31,234 | 3,664 | 0 | 34,897 | 1,084,433 | 3% | 31% |
| 23 | 580 | 713 | 0 | 414,000 | 414,000 | 27,150 | 3,059 | 3,144 | 33,353 | 1,117,786 | 3% | 32% |
| 24 | 288 | 808 | 0 | 0 | 0 | 29,551 | 3,466 | 0 | 33,018 | 1,150,803 | 3% | 32% |
| 25 | 130 | 807 | 0 | 0 | 0 | 29,515 | 3,462 | 0 | 32,977 | 1,183,780 | 4% | 33% |
| 26 | 215 | 806 | 0 | 0 | 0 | 29,478 | 3,458 | 0 | 32,936 | 1,216,716 | 4% | 34% |
| 27 | 68 | 787 | 0 | 0 | 0 | 28,783 | 3,376 | 0 | 32,160 | 1,248,876 | 4% | 35% |
| 28 | 2 | 760 | 0 | 0 | 0 | 27,796 | 3,260 | 0 | 31,056 | 1,279,932 | 4% | 36% |
| 29 | 144 | 0 | 0 | 1,600,000 | 1,600,000 | 18,464 | 0 | 12,152 | 30,616 | 1,310,548 | 4% | 37% |
| 30 | 106 | 450 | 590,000 | 229,300 | 819,300 | 22,456 | 1,931 | 6,223 | 30,609 | 1,341,156 | 4% | 38% |
| 31 | 200 | 790 | 0 | 32,000 | 32,000 | 26,017 | 3,389 | 243 | 29,649 | 1,370,805 | 4% | 39% |
| 32 | 189 | 786 | 0 | 22,200 | 22,200 | 25,793 | 3,372 | 169 | 29,334 | 1,400,139 | 5% | 40% |
| 33 | 60 | 665 | 0 | 0 | 0 | 24,321 | 2,853 | 0 | 27,174 | 1,427,314 | 5% | 40% |
| 34 | 64 | 650 | 0 | 0 | 0 | 23,773 | 2,789 | 0 | 26,561 | 1,453,875 | 5% | 41% |
| 35 | 59 | 504 | 0 | 452,400 | 452,400 | 20,718 | 2,162 | 3,436 | 26,317 | 1,480,191 | 5% | 42% |
| 36 | 186 | 536 | 0 | 240,000 | 240,000 | 19,737 | 2,299 | 1,823 | 23,859 | 1,504,051 | 5% | 42% |
| 37 | 757 | 600 | 0 | 1,500 | 1,500 | 19,548 | 2,574 | 11 | 22,133 | 1,526,184 | 5% | 43% |
| 38 | 351 | 535 | 0 | 0 | 0 | 19,567 | 2,295 | 0 | 21,862 | 1,548,046 | 5% | 44% |
| 39 | 316 | 562 | 0 | 45,000 | 45,000 | 18,726 | 2,411 | 342 | 21,479 | 1,569,524 | 5% | 44% |
| 40 | 93 | 532 | 0 | 76,000 | 76,000 | 18,045 | 2,282 | 577 | 20,905 | 1,590,429 | 6% | 45% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 102 | 398 | 138,000 | 221,982 | 359,982 | 16,391 | 1,707 | 2,734 | 20,833 | 1,611,262 | 6% | 45% |
| 42 | 14 | 484 | 0 | 0 | 0 | 17,702 | 2,076 | 0 | 19,778 | 1,631,040 | 6% | 46% |
| 43 | 89 | 469 | 0 | 0 | 0 | 17,153 | 2,012 | 0 | 19,165 | 1,650,205 | 6% | 47% |
| 44 | 208 | 457 | 0 | 0 | 0 | 16,714 | 1,961 | 0 | 18,675 | 1,668,879 | 6% | 47% |
| 45 | 630 | 471 | 0 | 29,400 | 29,400 | 15,618 | 2,021 | 223 | 17,862 | 1,686,741 | 6% | 48% |
| 46 | 229 | 439 | 0 | 27,600 | 27,600 | 14,560 | 1,883 | 210 | 16,653 | 1,703,395 | 6% | 48% |
| 47 | 45 | 400 | 0 | 100,000 | 100,000 | 13,981 | 1,716 | 760 | 16,457 | 1,719,851 | 7% | 49% |
| 48 | 511 | 440 | 0 | 10,000 | 10,000 | 14,425 | 1,888 | 76 | 16,389 | 1,736,240 | 7% | 49% |
| 49 | 513 | 398 | 0 | 0 | 0 | 14,556 | 1,707 | 0 | 16,264 | 1,752,504 | 7% | 49% |
| 50 | 308 | 396 | 0 | 0 | 0 | 14,483 | 1,699 | 0 | 16,182 | 1,768,686 | 7% | 50% |
| 51 | 478 | 396 | 0 | 0 | 0 | 14,483 | 1,699 | 0 | 16,182 | 1,784,868 | 7% | 50% |
| 52 | 63 | 262 | 0 | 358,881 | 358,881 | 11,956 | 1,124 | 2,726 | 15,805 | 1,800,673 | 7% | 51% |
| 53 | 501 | 384 | 0 | 0 | 0 | 14,044 | 1,647 | 0 | 15,692 | 1,816,365 | 7% | 51% |
| 54 | 311 | 0 | 15,500 | 785,000 | 800,500 | 9,238 | 0 | 6,080 | 15,318 | 1,831,682 | 8% | 52% |
| 55 | 56 | 204 | 106,276 | 344,328 | 450,604 | 10,943 | 875 | 3,422 | 15,240 | 1,846,922 | 8% | 52% |
| 56 | 574 | 359 | 0 | 0 | 0 | 13,130 | 1,540 | 0 | 14,670 | 1,861,592 | 8% | 53% |
| 57 | 221 | 353 | 0 | 0 | 0 | 12,910 | 1,514 | 0 | 14,425 | 1,876,017 | 8% | 53% |
| 58 | 355 | 353 | 0 | 0 | 0 | 12,910 | 1,514 | 0 | 14,425 | 1,890,442 | 8% | 53% |
| 59 | 179 | 375 | 0 | 30,000 | 30,000 | 12,499 | 1,609 | 228 | 14,336 | 1,904,778 | 8% | 54% |
| 60 | 294 | 340 | 0 | 0 | 0 | 12,435 | 1,459 | 0 | 13,894 | 1,918,672 | 8% | 54% |
| 61 | 401 | 348 | 40,654 | 15,101 | 55,755 | 11,867 | 1,493 | 423 | 13,783 | 1,932,454 | 9% | 55% |
| 62 | 264 | 330 | 0 | 84,000 | 84,000 | 11,550 | 1,416 | 638 | 13,604 | 1,946,058 | 9% | 55% |
| 63 | 310 | 330 | 0 | 0 | 0 | 12,069 | 1,416 | 0 | 13,485 | 1,959,543 | 9% | 55% |
| 64 | 40 | 358 | 0 | 13,561 | 13,561 | 11,790 | 1,536 | 103 | 13,429 | 1,972,972 | 9% | 56% |
| 65 | 655 | 320 | 0 | 0 | 0 | 11,704 | 1,373 | 0 | 13,076 | 1,986,048 | 9% | 56% |
| 66 | 543 | 330 | 0 | 50,000 | 50,000 | 11,226 | 1,416 | 380 | 13,022 | 1,999,070 | 9% | 56% |
| 67 | 187 | 307 | 0 | 72,869 | 72,869 | 10,696 | 1,317 | 553 | 12,567 | 2,011,637 | 9% | 57% |
| 68 | 103 | 311 | 40,000 | 13,500 | 53,500 | 10,642 | 1,334 | 406 | 12,382 | 2,024,019 | 10% | 57% |
| 69 | 553 | 300 | 0 | 0 | 0 | 10,972 | 1,287 | 0 | 12,259 | 2,036,278 | 10% | 57% |
| 70 | 723 | 300 | 0 | 0 | 0 | 10,972 | 1,287 | 0 | 12,259 | 2,048,537 | 10% | 58% |
| 71 | 408 | 0 | 0 | 627,200 | 627,200 | 7,238 | 0 | 4,764 | 12,001 | 2,060,539 | 10% | 58% |
| 72 | 283 | 292 | 0 | 0 | 0 | 10,679 | 1,253 | 0 | 11,932 | 2,072,471 | 10% | 58% |
| 73 | 719 | 292 | 0 | 0 | 0 | 10,679 | 1,253 | 0 | 11,932 | 2,084,403 | 10% | 59% |
| 74 | 28 | 0 | 0 | 616,000 | 616,000 | 7,109 | 0 | 4,679 | 11,787 | 2,096,190 | 10% | 59% |
| 75 | 61 | 0 | 0 | 613,000 | 613,000 | 7,074 | 0 | 4,656 | 11,730 | 2,107,920 | 11% | 59% |
| 76 | 369 | 288 | 0 | 63,748 | 63,748 | 9,991 | 1,236 | 484 | 11,711 | 2,119,631 | 11% | 60% |
| 77 | 153 | 286 | 0 | 0 | 0 | 10,460 | 1,227 | 0 | 11,687 | 2,131,318 | 11% | 60% |
| 78 | 219 | 0 | 0 | 600,000 | 600,000 | 6,924 | 0 | 4,557 | 11,481 | 2,142,799 | 11% | 60% |
| 79 | 730 | 278 | 0 | 0 | 0 | 10,167 | 1,193 | 0 | 11,360 | 2,154,159 | 11% | 61% |
| 80 | 537 | 274 | 0 | 0 | 0 | 10,021 | 1,175 | 0 | 11,197 | 2,165,356 | 11% | 61% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 81 | 225 | 272 | 0 | 0 | 0 | 9,948 | 1,167 | 0 | 11,115 | 2,176,470 | 11% | 61% |
| 82 | 99 | 65 | 82,000 | 400,000 | 482,000 | 6,713 | 279 | 3,661 | 10,653 | 2,187,123 | 12% | 62% |
| 83 | 48 | 287 | 0 | 3,600 | 3,600 | 9,386 | 1,231 | 27 | 10,645 | 2,197,768 | 12% | 62% |
| 84 | 194 | 260 | 0 | 0 | 0 | 9,509 | 1,115 | 0 | 10,625 | 2,208,393 | 12% | 62% |
| 85 | 663 | 257 | 0 | 0 | 0 | 9,399 | 1,103 | 0 | 10,502 | 2,218,895 | 12% | 63% |
| 86 | 487 | 255 | 0 | 0 | 0 | 9,326 | 1,094 | 0 | 10,420 | 2,229,315 | 12% | 63% |
| 87 | 393 | 251 | 0 | 0 | 0 | 9,180 | 1,077 | 0 | 10,257 | 2,239,572 | 12% | 63% |
| 88 | 1 | 251 | 0 | 0 | 0 | 9,180 | 1,077 | 0 | 10,257 | 2,249,828 | 12% | 63% |
| 89 | 76 | 250 | 0 | 0 | 0 | 9,143 | 1,073 | 0 | 10,216 | 2,260,044 | 13% | 64% |
| 90 | 146 | 249 | 0 | 0 | 0 | 9,107 | 1,068 | 0 | 10,175 | 2,270,219 | 13% | 64% |
| 91 | 207 | 0 | 0 | 526,800 | 526,800 | 6,079 | 0 | 4,001 | 10,080 | 2,280,300 | 13% | 64% |
| 92 | 492 | 246 | 0 | 0 | 0 | 8,997 | 1,055 | 0 | 10,052 | 2,290,352 | 13% | 65% |
| 93 | 35 | 0 | 0 | 520,000 | 520,000 | 6,001 | 0 | 3,949 | 9,950 | 2,300,302 | 13% | 65% |
| 94 | 436 | 240 | 0 | 0 | 0 | 8,778 | 1,030 | 0 | 9,807 | 2,310,109 | 13% | 65% |
| 95 | 422 | 237 | 0 | 0 | 0 | 8,668 | 1,017 | 0 | 9,685 | 2,319,794 | 13% | 65% |
| 96 | 70 | 252 | 0 | 19,856 | 19,856 | 8,403 | 1,081 | 151 | 9,635 | 2,329,429 | 14% | 66% |
| 97 | 27 | 233 | 0 | 0 | 0 | 8,522 | 1,000 | 0 | 9,521 | 2,338,950 | 14% | 66% |
| 98 | 248 | 0 | 0 | 491,860 | 491,860 | 5,676 | 0 | 3,736 | 9,412 | 2,348,362 | 14% | 66% |
| 99 | 437 | 230 | 0 | 0 | 0 | 8,412 | 987 | 0 | 9,399 | 2,357,760 | 14% | 67% |
| 100 | 567 | 228 | 0 | 0 | 0 | 8,339 | 978 | 0 | 9,317 | 2,367,077 | 14% | 67% |
| 101 | 95 | 0 | 0 | 484,265 | 484,265 | 5,588 | 0 | 3,678 | 9,266 | 2,376,344 | 14% | 67% |
| 102 | 198 | 226 | 0 | 0 | 0 | 8,266 | 970 | 0 | 9,235 | 2,385,579 | 14% | 67% |
| 103 | 439 | 225 | 0 | 0 | 0 | 8,229 | 965 | 0 | 9,194 | 2,394,773 | 14% | 68% |
| 104 | 573 | 225 | 0 | 52,000 | 52,000 | 7,826 | 965 | 395 | 9,186 | 2,403,959 | 15% | 68% |
| 105 | 462 | 224 | 0 | 0 | 0 | 8,192 | 961 | 0 | 9,153 | 2,413,113 | 15% | 68% |
| 106 | 397 | 0 | 0 | 47,5757 | 475,757 | 5,490 | 0 | 3,613 | 9,104 | 2,422,216 | 15% | 68% |
| 107 | 670 | 175 | 0 | 153,071 | 153,071 | 7,162 | 751 | 1,163 | 9,076 | 2,431,292 | 15% | 69% |
| 108 | 647 | 219 | 0 | 0 | 0 | 8,010 | 940 | 0 | 8,949 | 2,440,241 | 15% | 69% |
| 109 | 145 | 215 | 0 | 0 | 0 | 7,863 | 922 | 0 | 8,786 | 2,449,026 | 15% | 69% |
| 110 | 605 | 219 | 0 | 35,000 | 35,000 | 7,469 | 940 | 266 | 8,674 | 2,457,701 | 15% | 69% |
| 111 | 532 | 211 | 0 | 0 | 0 | 7,717 | 905 | 0 | 8,622 | 2,466,323 | 16% | 70% |
| 112 | 297 | 0 | 0 | 450,000 | 450,000 | 5,193 | 0 | 3,418 | 8,611 | 2,474,934 | 16% | 70% |
| 113 | 206 | 212 | 0 | 45,000 | 45,000 | 7,337 | 909 | 342 | 8,588 | 2,483,522 | 16% | 70% |
| 114 | 234 | 210 | 0 | 0 | 0 | 7,680 | 901 | 0 | 8,581 | 2,492,103 | 16% | 70% |
| 115 | 555 | 214 | 0 | 38,768 | 38,768 | 7,342 | 918 | 294 | 8,555 | 2,500,658 | 16% | 71% |
| 116 | 43 | 0 | 0 | 441,709 | 441,709 | 5,097 | 0 | 3,355 | 8,452 | 2,509,110 | 16% | 71% |
| 117 | 216 | 206 | 0 | 0 | 0 | 7,534 | 884 | 0 | 8,418 | 2,517,528 | 16% | 71% |
| 118 | 20 | 195 | 0 | 70,259 | 70,259 | 7,024 | 837 | 534 | 8,394 | 2,525,922 | 17% | 71% |
| 119 | 583 | 0 | 0 | 438,438 | 438,438 | 5,060 | 0 | 3,330 | 8,390 | 2,534,311 | 17% | 72% |
| 120 | 272 | 0 | 361,000 | 74,000 | 435,000 | 5,020 | 0 | 3,304 | 8,324 | 2,542,635 | 17% | 72% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 121 | 578 | 0 | 427,000 | 0 | 427,000 | 4,928 | 0 | 3,243 | 8,171 | 2,550,806 | 17% | 72% |
| 122 | 62 | 0 | 0 | 426,038 | 426,038 | 4,916 | 0 | 3,236 | 8,152 | 2,558,958 | 17% | 72% |
| 123 | 589 | 198 | 0 | 0 | 0 | 7,242 | 849 | 0 | 8,091 | 2,567,049 | 17% | 72% |
| 124 | 736 | 197 | 0 | 0 | 0 | 7,205 | 845 | 0 | 8,050 | 2,575,099 | 17% | 73% |
| 125 | 280 | 196 | 0 | 0 | 0 | 7,168 | 841 | 0 | 8,009 | 2,583,108 | 18% | 73% |
| 126 | 517 | 194 | 0 | 0 | 0 | 7,095 | 832 | 0 | 7,928 | 2,591,036 | 18% | 73% |
| 127 | 81 | 120 | 0 | 193,637 | 193,637 | 5,757 | 515 | 1,471 | 7,742 | 2,598,778 | 18% | 73% |
| 128 | 404 | 60 | 0 | 320,000 | 320,000 | 5,008 | 257 | 2,430 | 7,696 | 2,606,474 | 18% | 74% |
| 129 | 50 | 188 | 0 | 0 | 0 | 6,876 | 807 | 0 | 7,682 | 2,614,156 | 18% | 74% |
| 130 | 78 | 0 | 0 | 393,400 | 393,400 | 4,540 | 0 | 2,988 | 7,528 | 2,621,684 | 18% | 74% |
| 131 | 514 | 0 | 90,000 | 300,000 | 390,000 | 4,501 | 0 | 2,962 | 7,463 | 2,629,147 | 18% | 74% |
| 132 | 65 | 201 | 0 | 2,650 | 2,650 | 6,576 | 862 | 20 | 7,458 | 2,636,605 | 19% | 74% |
| 133 | 191 | 180 | 0 | 0 | 0 | 6,583 | 772 | 0 | 7,355 | 2,643,960 | 19% | 75% |
| 134 | 470 | 191 | 0 | 14,741 | 14,741 | 6,366 | 819 | 112 | 7,297 | 2,651,257 | 19% | 75% |
| 135 | 139 | 177 | 0 | 0 | 0 | 6,474 | 759 | 0 | 7,233 | 2,658,490 | 19% | 75% |
| 136 | 235 | 0 | 375,270 | 0 | 375,270 | 4,331 | 0 | 2,850 | 7,181 | 2,665,671 | 19% | 75% |
| 137 | 51 | 0 | 0 | 374,513 | 374,513 | 4,322 | 0 | 2,844 | 7,166 | 2,672,837 | 19% | 75% |
| 138 | 406 | 174 | 0 | 0 | 0 | 6,364 | 746 | 0 | 7,110 | 2,679,947 | 19% | 76% |
| 139 | 453 | 174 | 0 | 0 | 0 | 6,364 | 746 | 0 | 7,110 | 2,687,057 | 20% | 76% |
| 140 | 196 | 171 | 0 | 0 | 0 | 6,254 | 734 | 0 | 6,988 | 2,694,045 | 20% | 76% |
| 141 | 398 | 166 | 0 | 46,000 | 46,000 | 5,847 | 712 | 349 | 6,908 | 2,700,953 | 20% | 76% |
| 142 | 653 | 168 | 0 | 0 | 0 | 6,144 | 721 | 0 | 6,865 | 2,707,819 | 20% | 76% |
| 143 | 57 | 184 | 0 | 4,089 | 4,089 | 6,036 | 789 | 31 | 6,857 | 2,714,675 | 20% | 77% |
| 144 | 586 | 0 | 0 | 356,000 | 356,000 | 4,108 | 0 | 2,704 | 6,812 | 2,721,488 | 20% | 77% |
| 145 | 5 | 165 | 0 | 0 | 0 | 6,035 | 708 | 0 | 6,742 | 2,728,230 | 20% | 77% |
| 146 | 96 | 0 | 350,000 | 0 | 350,000 | 4,039 | 0 | 2,658 | 6,697 | 2,734,927 | 21% | 77% |
| 147 | 42 | 163 | 0 | 0 | 0 | 5,961 | 699 | 0 | 6,661 | 2,741,588 | 21% | 77% |
| 148 | 84 | 163 | 0 | 0 | 0 | 5,961 | 699 | 0 | 6,661 | 2,748,249 | 21% | 78% |
| 149 | 236 | 0 | 342,409 | 0 | 342,409 | 3,951 | 0 | 2,601 | 6,552 | 2,754,801 | 21% | 78% |
| 150 | 150 | 160 | 0 | 0 | 0 | 5,852 | 686 | 0 | 6,538 | 2,761,339 | 21% | 78% |
| 151 | 592 | 160 | 0 | 0 | 0 | 5,852 | 686 | 0 | 6,538 | 2,767,877 | 21% | 78% |
| 152 | 379 | 156 | 0 | 42,000 | 42,000 | 5,484 | 669 | 319 | 6,472 | 2,774,349 | 21% | 78% |
| 153 | 459 | 158 | 0 | 0 | 0 | 5,779 | 678 | 0 | 6,456 | 2,780,805 | 22% | 78% |
| 154 | 494 | 0 | 0 | 336,233 | 336,233 | 3,880 | 0 | 2,554 | 6,434 | 2,787,239 | 22% | 79% |
| 155 | 230 | 156 | 0 | 0 | 0 | 5,705 | 669 | 0 | 6,375 | 2,793,614 | 22% | 79% |
| 156 | 349 | 0 | 0 | 331,974 | 331,974 | 3,831 | 0 | 2,521 | 6,352 | 2,799,966 | 22% | 79% |
| 157 | 575 | 155 | 0 | 0 | 0 | 5,669 | 665 | 0 | 6,334 | 2,806,300 | 22% | 79% |
| 158 | 525 | 0 | 0 | 330,255 | 330,255 | 3,811 | 0 | 2,508 | 6,319 | 2,812,619 | 22% | 79% |
| 159 | 472 | 164 | 14,990 | 0 | 14,990 | 5,487 | 704 | 114 | 6,304 | 2,818,923 | 22% | 80% |
| 160 | 273 | 151 | 0 | 0 | 0 | 5,523 | 648 | 0 | 6,170 | 2,825,094 | 23% | 80% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 161 | **176** | 0 | 0 | 318,000 | 318,000 | 3,670 | 0 | 2,415 | 6,085 | 2,831,179 | 23% | 80% |
| 162 | **735** | 0 | 0 | 314,288 | 314,288 | 3,627 | 0 | 2,387 | 6,014 | 2,837,193 | 23% | 80% |
| 163 | **79** | 158 | 0 | 3,178 | 3,178 | 5,179 | 678 | 24 | 5,881 | 2,843,074 | 23% | 80% |
| 164 | **416** | 142 | 0 | 0 | 0 | 5,193 | 609 | 0 | 5,803 | 2,848,876 | 23% | 80% |
| 165 | **666** | 0 | 0 | 303,000 | 303,000 | 3,497 | 0 | 2,301 | 5,798 | 2,854,674 | 23% | 81% |
| 166 | **591** | 141 | 0 | 0 | 0 | 5,157 | 605 | 0 | 5,762 | 2,860,436 | 23% | 81% |
| 167 | **729** | 0 | 300,000 | 0 | 300,000 | 3,462 | 0 | 2,279 | 5,741 | 2,866,176 | 23% | 81% |
| 168 | **384** | 140 | 0 | 0 | 0 | 5,120 | 601 | 0 | 5,721 | 2,871,897 | 24% | 81% |
| 169 | **534** | 140 | 0 | 0 | 0 | 5,120 | 601 | 0 | 5,721 | 2,877,618 | 24% | 81% |
| 170 | **454** | 0 | 0 | 291,886 | 291,886 | 3,368 | 0 | 2,217 | 5,585 | 2,883,204 | 24% | 81% |
| 171 | **18** | 0 | 0 | 283,925 | 283,925 | 3,276 | 0 | 2,156 | 5,433 | 2,888,636 | 24% | 82% |
| 172 | **330** | 0 | 0 | 280,000 | 280,000 | 3,231 | 0 | 2,127 | 5,358 | 2,893,994 | 24% | 82% |
| 173 | **748** | 131 | 0 | 0 | 0 | 4,791 | 562 | 0 | 5,353 | 2,899,347 | 24% | 82% |
| 174 | **669** | 108 | 62,096 | 11,200 | 73,296 | 4,220 | 463 | 557 | 5,240 | 2,904,588 | 24% | 82% |
| 175 | **105** | 128 | 0 | 0 | 0 | 4,681 | 549 | 0 | 5,231 | 2,909,818 | 25% | 82% |
| 176 | **405** | 128 | 0 | 0 | 0 | 4,681 | 549 | 0 | 5,231 | 2,915,049 | 25% | 82% |
| 177 | **367** | 127 | 0 | 0 | 0 | 4,645 | 545 | 0 | 5,190 | 2,920,238 | 25% | 82% |
| 178 | **121** | 126 | 0 | 0 | 0 | 4,608 | 541 | 0 | 5,149 | 2,925,387 | 25% | 83% |
| 179 | **488** | 136 | 7,600 | 0 | 7,600 | 4,506 | 583 | 58 | 5,147 | 2,930,534 | 25% | 83% |
| 180 | **527** | 125 | 0 | 0 | 0 | 4,572 | 536 | 0 | 5,108 | 2,935,642 | 25% | 83% |
| 181 | **149** | 123 | 0 | 0 | 0 | 4,499 | 528 | 0 | 5,026 | 2,940,668 | 25% | 83% |
| 182 | **423** | 0 | 50,000 | 210,000 | 260,000 | 3,000 | 0 | 1,975 | 4,975 | 2,945,643 | 26% | 83% |
| 183 | **353** | 130 | 0 | 9,000 | 9,000 | 4,324 | 558 | 68 | 4,950 | 2,950,593 | 26% | 83% |
| 184 | **108** | 120 | 0 | 0 | 0 | 4,389 | 515 | 0 | 4,904 | 2,955,497 | 26% | 83% |
| 185 | **134** | 120 | 0 | 0 | 0 | 4,389 | 515 | 0 | 4,904 | 2,960,400 | 26% | 84% |
| 186 | **603** | 118 | 0 | 0 | 0 | 4,316 | 506 | 0 | 4,822 | 2,965,222 | 26% | 84% |
| 187 | **74** | 125 | 0 | 8,968 | 8,968 | 4,161 | 536 | 68 | 4,765 | 2,969,988 | 26% | 84% |
| 188 | **641** | 0 | 0 | 246,217 | 246,217 | 2,841 | 0 | 1,870 | 4,711 | 2,974,699 | 26% | 84% |
| 189 | **90** | 0 | 0 | 245,600 | 245,600 | 2,834 | 0 | 1,865 | 4,700 | 2,979,399 | 27% | 84% |
| 190 | **226** | 115 | 0 | 0 | 0 | 4,206 | 493 | 0 | 4,699 | 2,984,098 | 27% | 84% |
| 191 | **347** | 114 | 0 | 0 | 0 | 4,169 | 489 | 0 | 4,658 | 2,988,756 | 27% | 84% |
| 192 | **174** | 0 | 237,568 | 4,000 | 241,568 | 2,788 | 0 | 1,835 | 4,622 | 2,993,379 | 27% | 84% |
| 193 | **358** | 0 | 0 | 240,966 | 240,966 | 2,781 | 0 | 1,830 | 4,611 | 2,997,990 | 27% | 85% |
| 194 | **639** | 112 | 0 | 0 | 0 | 4,096 | 480 | 0 | 4,577 | 3,002,566 | 27% | 85% |
| 195 | **317** | 0 | 0 | 236,109 | 236,109 | 2,725 | 0 | 1,793 | 4,518 | 3,007,084 | 27% | 85% |
| 196 | **19** | 0 | 0 | 233,000 | 233,000 | 2,689 | 0 | 1,770 | 4,458 | 3,011,543 | 28% | 85% |
| 197 | **142** | 109 | 0 | 0 | 0 | 3,987 | 468 | 0 | 4,454 | 3,015,997 | 28% | 85% |
| 198 | **127** | 107 | 0 | 0 | 0 | 3,913 | 459 | 0 | 4,372 | 3,020,369 | 28% | 85% |
| 199 | **585** | 0 | 227,196.1 | 0 | 227,196 | 2,622 | 0 | 1,726 | 4,347 | 3,024,717 | 28% | 85% |
| 200 | **438** | 102 | 0 | 0 | 0 | 3,730 | 438 | 0 | 4,168 | 3,028,885 | 28% | 85% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 201 | **512** | 102 | 0 | 0 | 0 | 3,730 | 438 | 0 | 4,168 | 3,033,053 | 28% | 86% |
| 202 | **374** | 0 | 0 | 216,410 | 216,410 | 2,497 | 0 | 1,644 | 4,141 | 3,037,194 | 28% | 86% |
| 203 | **75** | 0 | 177,225 | 30,000 | 207,225 | 2,391 | 0 | 1,574 | 3,965 | 3,041,159 | 29% | 86% |
| 204 | **309** | 97 | 0 | 0 | 0 | 3,548 | 416 | 0 | 3,964 | 3,045,123 | 29% | 86% |
| 205 | **342** | 0 | 0 | 206,000 | 206,000 | 2,377 | 0 | 1,565 | 3,942 | 3,049,065 | 29% | 86% |
| 206 | **307** | 96 | 0 | 0 | 0 | 3,511 | 412 | 0 | 3,923 | 3,052,988 | 29% | 86% |
| 207 | **741** | 96 | 0 | 0 | 0 | 3,511 | 412 | 0 | 3,923 | 3,056,910 | 29% | 86% |
| 208 | **314** | 95 | 0 | 0 | 0 | 3,474 | 408 | 0 | 3,882 | 3,060,792 | 29% | 86% |
| 209 | **388** | 94 | 0 | 0 | 0 | 3,438 | 403 | 0 | 3,841 | 3,064,634 | 29% | 86% |
| 210 | **400** | 0 | 0 | 200,000 | 200,000 | 2,308 | 0 | 1,519 | 3,827 | 3,068,461 | 30% | 87% |
| 211 | **160** | 0 | 200,000 | 0 | 200,000 | 2,308 | 0 | 1,519 | 3,827 | 3,072,288 | 30% | 87% |
| 212 | **113** | 93 | 0 | 0 | 0 | 3,401 | 399 | 0 | 3,800 | 3,076,088 | 30% | 87% |
| 213 | **261** | 92 | 0 | 0 | 0 | 3,365 | 395 | 0 | 3,759 | 3,079,847 | 30% | 87% |
| 214 | **86** | 95 | 13,790 | 0 | 13,790 | 3,231 | 408 | 105 | 3,743 | 3,083,591 | 30% | 87% |
| 215 | **46** | 91 | 0 | 0 | 0 | 3,328 | 390 | 0 | 3,719 | 3,087,309 | 30% | 87% |
| 216 | **94** | 0 | 0 | 190,803 | 190,803 | 2,202 | 0 | 1,449 | 3,651 | 3,090,960 | 30% | 87% |
| 217 | **281** | 89 | 0 | 0 | 0 | 3,255 | 382 | 0 | 3,637 | 3,094,597 | 31% | 87% |
| 218 | **635** | 0 | 0 | 190,000 | 190,000 | 2,193 | 0 | 1,443 | 3,636 | 3,098,233 | 31% | 87% |
| 219 | **85** | 88 | 0 | 0 | 0 | 3,218 | 378 | 0 | 3,596 | 3,101,829 | 31% | 88% |
| 220 | **195** | 87 | 0 | 0 | 0 | 3,182 | 373 | 0 | 3,555 | 3,105,384 | 31% | 88% |
| 221 | **10** | 86 | 0 | 0 | 0 | 3,145 | 369 | 0 | 3,514 | 3,108,898 | 31% | 88% |
| 222 | **11** | 86 | 0 | 0 | 0 | 3,145 | 369 | 0 | 3,514 | 3,112,412 | 31% | 88% |
| 223 | **633** | 0 | 0 | 180,000 | 180,000 | 2,077 | 0 | 1,367 | 3,444 | 3,115,857 | 31% | 88% |
| 224 | **468** | 0 | 177,742 | 0 | 177,742 | 2,051 | 0 | 1,350 | 3,401 | 3,119,258 | 32% | 88% |
| 225 | **481** | 82 | 0 | 0 | 0 | 2,999 | 352 | 0 | 3,351 | 3,122,609 | 32% | 88% |
| 226 | **624** | 82 | 0 | 0 | 0 | 2,999 | 352 | 0 | 3,351 | 3,125,959 | 32% | 88% |
| 227 | **716** | 0 | 175,000 | 0 | 175,000 | 2,020 | 0 | 1,329 | 3,349 | 3,129,308 | 32% | 88% |
| 228 | **570** | 0 | 173,774 | 0 | 173,774 | 2,005 | 0 | 1,320 | 3,325 | 3,132,633 | 32% | 88% |
| 229 | **69** | 0 | 0 | 173,157 | 173,157 | 1,998 | 0 | 1,315 | 3,313 | 3,135,947 | 32% | 89% |
| 230 | **210** | 81 | 0 | 0 | 0 | 2,962 | 347 | 0 | 3,310 | 3,139,256 | 32% | 89% |
| 231 | **656** | 81 | 0 | 0 | 0 | 2,962 | 347 | 0 | 3,310 | 3,142,566 | 32% | 89% |
| 232 | **164** | 0 | 0 | 171,000 | 171,000 | 1,973 | 0 | 1,299 | 3,272 | 3,145,839 | 33% | 89% |
| 233 | **238** | 80 | 0 | 0 | 0 | 2,926 | 343 | 0 | 3,269 | 3,149,108 | 33% | 89% |
| 234 | **507** | 0 | 0 | 168,000 | 168,000 | 1,939 | 0 | 1,276 | 3,215 | 3,152,322 | 33% | 89% |
| 235 | **166** | 78 | 0 | 0 | 0 | 2,853 | 335 | 0 | 3,187 | 3,155,510 | 33% | 89% |
| 236 | **192** | 0 | 0 | 166,016 | 166,016 | 1,916 | 0 | 1,261 | 3,177 | 3,158,686 | 33% | 89% |
| 237 | **159** | 50 | 0 | 77,427 | 77,427 | 2,373 | 215 | 588 | 3,176 | 3,161,862 | 33% | 89% |
| 238 | **112** | 77 | 0 | 0 | 0 | 2,816 | 330 | 0 | 3,146 | 3,165,009 | 33% | 89% |
| 239 | **610** | 77 | 0 | 0 | 0 | 2,816 | 330 | 0 | 3,146 | 3,168,155 | 34% | 89% |
| 240 | **456** | 79 | 0 | 13,135 | 13,135 | 2,704 | 339 | 100 | 3,143 | 3,171,298 | 34% | 90% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 241 | **444** | 0 | 0 | 162,620 | 162,620 | 1,877 | 0 | 1,235 | 3,112 | 3,174,410 | 34% | 90% |
| 242 | **676** | 76 | 0 | 0 | 0 | 2,780 | 326 | 0 | 3,106 | 3,177,516 | 34% | 90% |
| 243 | **175** | 75 | 0 | 0 | 0 | 2,743 | 322 | 0 | 3,065 | 3,180,581 | 34% | 90% |
| 244 | **559** | 0 | 160,000 | 0 | 160,000 | 1,846 | 0 | 1,215 | 3,062 | 3,183,642 | 34% | 90% |
| 245 | **304** | 0 | 145,564 | 14,407 | 159,971 | 1,846 | 0 | 1,215 | 3,061 | 3,186,703 | 34% | 90% |
| 246 | **455** | 0 | 0 | 158,930 | 158,930 | 1,834 | 0 | 1,207 | 3,041 | 3,189,744 | 35% | 90% |
| 247 | **182** | 74 | 0 | 0 | 0 | 2,706 | 317 | 0 | 3,024 | 3,192,768 | 35% | 90% |
| 248 | **266** | 74 | 0 | 0 | 0 | 2,706 | 317 | 0 | 3,024 | 3,195,792 | 35% | 90% |
| 249 | **348** | 74 | 0 | 0 | 0 | 2,706 | 317 | 0 | 3,024 | 3,198,816 | 35% | 90% |
| 250 | **126** | 0 | 150,000 | 7,200 | 157,200 | 1,814 | 0 | 1,194 | 3,008 | 3,201,824 | 35% | 90% |
| 251 | **425** | 73 | 0 | 0 | 0 | 2,670 | 313 | 0 | 2,983 | 3,204,807 | 35% | 90% |
| 252 | **169** | 60 | 6,543 | 35,948 | 42,491 | 2,366 | 257 | 323 | 2,946 | 3,207,753 | 35% | 91% |
| 253 | **228** | 72 | 0 | 0 | 0 | 2,633 | 309 | 0 | 2,942 | 3,210,695 | 36% | 91% |
| 254 | **173** | 71 | 0 | 0 | 0 | 2,597 | 305 | 0 | 2,901 | 3,213,597 | 36% | 91% |
| 255 | **123** | 70 | 0 | 0 | 0 | 2,560 | 300 | 0 | 2,860 | 3,216,457 | 36% | 91% |
| 256 | **331** | 70 | 0 | 0 | 0 | 2,560 | 300 | 0 | 2,860 | 3,219,318 | 36% | 91% |
| 257 | **158** | 69 | 0 | 0 | 0 | 2,524 | 296 | 0 | 2,820 | 3,222,137 | 36% | 91% |
| 258 | **67** | 66 | 0 | 0 | 0 | 2,414 | 283 | 0 | 2,697 | 3,224,834 | 36% | 91% |
| 259 | **323** | 66 | 0 | 0 | 0 | 2,414 | 283 | 0 | 2,697 | 3,227,531 | 36% | 91% |
| 260 | **29** | 0 | 140,000 | 0 | 140,000 | 1,616 | 0 | 1,063 | 2,679 | 3,230,210 | 37% | 91% |
| 261 | **143** | 65 | 0 | 0 | 0 | 2,377 | 279 | 0 | 2,656 | 3,232,866 | 37% | 91% |
| 262 | **202** | 65 | 0 | 0 | 0 | 2,377 | 279 | 0 | 2,656 | 3,235,522 | 37% | 91% |
| 263 | **461** | 64 | 0 | 0 | 0 | 2,341 | 275 | 0 | 2,615 | 3,238,138 | 37% | 91% |
| 264 | **241** | 0 | 0 | 134,563 | 134,563 | 1,553 | 0 | 1,022 | 2,575 | 3,240,712 | 37% | 91% |
| 265 | **240** | 63 | 0 | 0 | 0 | 2,304 | 270 | 0 | 2,574 | 3,243,287 | 37% | 92% |
| 266 | **82** | 62 | 0 | 0 | 0 | 2,268 | 266 | 0 | 2,534 | 3,245,820 | 37% | 92% |
| 267 | **299** | 62 | 0 | 0 | 0 | 2,268 | 266 | 0 | 2,534 | 3,248,354 | 38% | 92% |
| 268 | **363** | 62 | 0 | 0 | 0 | 2,268 | 266 | 0 | 2,534 | 3,250,887 | 38% | 92% |
| 269 | **457** | 62 | 0 | 0 | 0 | 2,268 | 266 | 0 | 2,534 | 3,253,421 | 38% | 92% |
| 270 | **795** | 62 | 0 | 0 | 0 | 2,268 | 266 | 0 | 2,534 | 3,255,955 | 38% | 92% |
| 271 | **344** | 61 | 0 | 0 | 0 | 2,231 | 262 | 0 | 2,493 | 3,258,447 | 38% | 92% |
| 272 | **726** | 61 | 0 | 0 | 0 | 2,231 | 262 | 0 | 2,493 | 3,260,940 | 38% | 92% |
| 273 | **476** | 60 | 0 | 0 | 0 | 2,194 | 257 | 0 | 2,452 | 3,263,392 | 38% | 92% |
| 274 | **523** | 60 | 0 | 0 | 0 | 2,194 | 257 | 0 | 2,452 | 3,265,844 | 39% | 92% |
| 275 | **699** | 60 | 0 | 0 | 0 | 2,194 | 257 | 0 | 2,452 | 3,268,295 | 39% | 92% |
| 276 | **37** | 60 | 0 | 12,000 | 12,000 | 2,076 | 257 | 91 | 2,424 | 3,270,720 | 39% | 92% |
| 277 | **147** | 59 | 0 | 0 | 0 | 2,158 | 253 | 0 | 2,411 | 3,273,131 | 39% | 92% |
| 278 | **163** | 59 | 0 | 0 | 0 | 2,158 | 253 | 0 | 2,411 | 3,275,541 | 39% | 92% |
| 279 | **717** | 56 | 0 | 18,000 | 18,000 | 2,001 | 240 | 137 | 2,378 | 3,277,920 | 39% | 93% |
| 280 | **155** | 0 | 123,000 | 0 | 123,000 | 1,419 | 0 | 934 | 2,354 | 3,280,273 | 39% | 93% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 281 | **172** | 56 | 0 | 0 | 0 | 2,048 | 240 | 0 | 2,288 | 3,282,562 | 40% | 93% |
| 282 | **362** | 0 | 100,700 | 18,700 | 119,400 | 1,378 | 0 | 907 | 2,285 | 3,284,846 | 40% | 93% |
| 283 | **419** | 2 | 1,500 | 126,705 | 128,205 | 1,294 | 9 | 974 | 2,277 | 3,287,123 | 40% | 93% |
| 284 | **239** | 55 | 0 | 0 | 0 | 2,012 | 236 | 0 | 2,247 | 3,289,371 | 40% | 93% |
| 285 | **760** | 0 | 0 | 116,756 | 116,756 | 1,347 | 0 | 887 | 2,234 | 3,291,605 | 40% | 93% |
| 286 | **267** | 0 | 0 | 115,632 | 115,632 | 1,334 | 0 | 878 | 2,213 | 3,293,817 | 40% | 93% |
| 287 | **97** | 54 | 0 | 0 | 0 | 1,975 | 232 | 0 | 2,207 | 3,296,024 | 40% | 93% |
| 288 | **296** | 0 | 0 | 114,765 | 114,765 | 1,324 | 0 | 872 | 2,196 | 3,298,220 | 41% | 93% |
| 289 | **136** | 53 | 0 | 0 | 0 | 1,938 | 227 | 0 | 2,166 | 3,300,386 | 41% | 93% |
| 290 | **148** | 53 | 0 | 0 | 0 | 1,938 | 227 | 0 | 2,166 | 3,302,552 | 41% | 93% |
| 291 | **650** | 53 | 0 | 0 | 0 | 1,938 | 227 | 0 | 2,166 | 3,304,717 | 41% | 93% |
| 292 | **205** | 54 | 0 | 8,350 | 8,350 | 1,844 | 232 | 63 | 2,139 | 3,306,857 | 41% | 93% |
| 293 | **558** | 0 | 0 | 111,000 | 111,000 | 1,281 | 0 | 843 | 2,124 | 3,308,981 | 41% | 93% |
| 294 | **789** | 0 | 0 | 110,138 | 110,138 | 1,271 | 0 | 836 | 2,107 | 3,311,088 | 41% | 93% |
| 295 | **710** | 51 | 0 | 0 | 0 | 1,865 | 219 | 0 | 2,084 | 3,313,172 | 41% | 94% |
| 296 | **338** | 50 | 0 | 0 | 0 | 1,829 | 215 | 0 | 2,043 | 3,315,215 | 42% | 94% |
| 297 | **190** | 0 | 106,500 | 0 | 106,500 | 1,229 | 0 | 809 | 2,038 | 3,317,253 | 42% | 94% |
| 298 | **794** | 0 | 0 | 105,385 | 105,385 | 1,216 | 0 | 800 | 2,017 | 3,319,270 | 42% | 94% |
| 299 | **357** | 49 | 0 | 0 | 0 | 1,792 | 210 | 0 | 2,002 | 3,321,272 | 42% | 94% |
| 300 | **495** | 49 | 0 | 0 | 0 | 1,792 | 210 | 0 | 2,002 | 3,323,275 | 42% | 94% |
| 301 | **649** | 49 | 0 | 0 | 0 | 1,792 | 210 | 0 | 2,002 | 3,325,277 | 42% | 94% |
| 302 | **777** | 49 | 0 | 0 | 0 | 1,792 | 210 | 0 | 2,002 | 3,327,279 | 42% | 94% |
| 303 | **181** | 48 | 0 | 0 | 0 | 1,756 | 206 | 0 | 1,961 | 3,329,241 | 43% | 94% |
| 304 | **662** | 48 | 0 | 0 | 0 | 1,756 | 206 | 0 | 1,961 | 3,331,202 | 43% | 94% |
| 305 | **752** | 47 | 0 | 0 | 0 | 1,719 | 202 | 0 | 1,921 | 3,333,123 | 43% | 94% |
| 306 | **473** | 0 | 100,000 | 0 | 100,000 | 1,154 | 0 | 760 | 1,914 | 3,335,036 | 43% | 94% |
| 307 | **701** | 0 | 0 | 98,587 | 98,587 | 1,138 | 0 | 749 | 1,886 | 3,336,923 | 43% | 94% |
| 308 | **58** | 0 | 97,895 | 0 | 97,895 | 1,130 | 0 | 744 | 1,873 | 3,338,796 | 43% | 94% |
| 309 | **135** | 45 | 0 | 0 | 0 | 1,646 | 193 | 0 | 1,839 | 3,340,635 | 43% | 94% |
| 310 | **298** | 45 | 0 | 0 | 0 | 1,646 | 193 | 0 | 1,839 | 3,342,474 | 44% | 94% |
| 311 | **518** | 45 | 0 | 0 | 0 | 1,646 | 193 | 0 | 1,839 | 3,344,312 | 44% | 94% |
| 312 | **785** | 48 | 0 | 1500 | 1,500 | 1,584 | 206 | 11 | 1,801 | 3,346,114 | 44% | 94% |
| 313 | **132** | 44 | 0 | 0 | 0 | 1,609 | 189 | 0 | 1,798 | 3,347,912 | 44% | 94% |
| 314 | **289** | 44 | 0 | 0 | 0 | 1,609 | 189 | 0 | 1,798 | 3,349,710 | 44% | 95% |
| 315 | **380** | 0 | 0 | 93,425 | 93,425 | 1,078 | 0 | 710 | 1,788 | 3,351,497 | 44% | 95% |
| 316 | **696** | 0 | 0 | 90,978 | 90,978 | 1,050 | 0 | 691 | 1,741 | 3,353,238 | 44% | 95% |
| 317 | **590** | 0 | 0 | 90,900 | 90,900 | 1,049 | 0 | 690 | 1,739 | 3,354,978 | 45% | 95% |
| 318 | **728** | 0 | 0 | 90,000 | 90,000 | 1,039 | 0 | 684 | 1,722 | 3,356,700 | 45% | 95% |
| 319 | **41** | 0 | 0 | 89,900 | 89,900 | 1,037 | 0 | 683 | 1,720 | 3,358,420 | 45% | 95% |
| 320 | **104** | 0 | 73,500 | 14,800 | 88,300 | 1,019 | 0 | 671 | 1,690 | 3,360,110 | 45% | 95% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 321 | **484** | 0 | 0 | 87,635 | 87,635 | 1,011 | 0 | 666 | 1,677 | 3,361,787 | 45% | 95% |
| 322 | **253** | 41 | 0 | 0 | 0 | 1,500 | 176 | 0 | 1,675 | 3,363,462 | 45% | 95% |
| 323 | **792** | 41 | 0 | 0 | 0 | 1,500 | 176 | 0 | 1,675 | 3,365,137 | 45% | 95% |
| 324 | **36** | 0 | 0 | 86,386 | 86,386 | 997 | 0 | 656 | 1,653 | 3,366,790 | 46% | 95% |
| 325 | **612** | 0 | 0 | 85,496 | 85,496 | 987 | 0 | 649 | 1,636 | 3,368,426 | 46% | 95% |
| 326 | **23** | 40 | 0 | 0 | 0 | 1,463 | 172 | 0 | 1,635 | 3,370,061 | 46% | 95% |
| 327 | **464** | 40 | 0 | 0 | 0 | 1,463 | 172 | 0 | 1,635 | 3,371,695 | 46% | 95% |
| 328 | **168** | 0 | 84,615 | 0 | 84,615 | 976 | 0 | 643 | 1,619 | 3,373,315 | 46% | 95% |
| 329 | **92** | 0 | 84,000 | 0 | 84,000 | 969 | 0 | 638 | 1,607 | 3,374,922 | 46% | 95% |
| 330 | **475** | 0 | 84,000 | 0 | 84,000 | 969 | 0 | 638 | 1,607 | 3,376,529 | 46% | 95% |
| 331 | **244** | 39 | 0 | 0 | 0 | 1,426 | 167 | 0 | 1,594 | 3,378,123 | 47% | 95% |
| 332 | **247** | 39 | 0 | 0 | 0 | 1,426 | 167 | 0 | 1,594 | 3,379,717 | 47% | 95% |
| 333 | **365** | 0 | 0 | 83,245 | 83,245 | 961 | 0 | 632 | 1,593 | 3,381,309 | 47% | 95% |
| 334 | **193** | 0 | 0 | 83,217 | 83,217 | 960 | 0 | 632 | 1,592 | 3,382,902 | 47% | 95% |
| 335 | **214** | 38 | 0 | 0 | 0 | 1,390 | 163 | 0 | 1,553 | 3,384,455 | 47% | 96% |
| 336 | **509** | 0 | 0 | 80,000 | 80,000 | 923 | 0 | 608 | 1,531 | 3,385,985 | 47% | 96% |
| 337 | **38** | 37 | 0 | 0 | 0 | 1,353 | 159 | 0 | 1,512 | 3,387,497 | 47% | 96% |
| 338 | **469** | 37 | 0 | 0 | 0 | 1,353 | 159 | 0 | 1,512 | 3,389,009 | 48% | 96% |
| 339 | **449** | 0 | 0 | 77,952 | 77,952 | 900 | 0 | 592 | 1,492 | 3,390,501 | 48% | 96% |
| 340 | **170** | 0 | 0 | 77,400 | 77,400 | 893 | 0 | 588 | 1,481 | 3,391,982 | 48% | 96% |
| 341 | **122** | 36 | 0 | 0 | 0 | 1,317 | 154 | 0 | 1,471 | 3,393,453 | 48% | 96% |
| 342 | **224** | 36 | 0 | 0 | 0 | 1,317 | 154 | 0 | 1,471 | 3,394,924 | 48% | 96% |
| 343 | **368** | 36 | 0 | 0 | 0 | 1,317 | 154 | 0 | 1,471 | 3,396,395 | 48% | 96% |
| 344 | **399** | 36 | 0 | 0 | 0 | 1,317 | 154 | 0 | 1,471 | 3,397,866 | 48% | 96% |
| 345 | **504** | 36 | 0 | 0 | 0 | 1,317 | 154 | 0 | 1,471 | 3,399,337 | 49% | 96% |
| 346 | **664** | 0 | 0 | 76,394 | 76,394 | 882 | 0 | 580 | 1,462 | 3,400,799 | 49% | 96% |
| 347 | **9** | 35 | 0 | 0 | 0 | 1,280 | 150 | 0 | 1,430 | 3,402,229 | 49% | 96% |
| 348 | **249** | 35 | 0 | 0 | 0 | 1,280 | 150 | 0 | 1,430 | 3,403,660 | 49% | 96% |
| 349 | **337** | 0 | 0 | 74,208 | 74,208 | 856 | 0 | 564 | 1,420 | 3,405,080 | 49% | 96% |
| 350 | **118** | 0 | 0 | 72,618 | 72,618 | 838 | 0 | 552 | 1,390 | 3,406,469 | 49% | 96% |
| 351 | **389** | 34 | 0 | 0 | 0 | 1,243 | 146 | 0 | 1,389 | 3,407,859 | 49% | 96% |
| 352 | **601** | 34 | 0 | 0 | 0 | 1,243 | 146 | 0 | 1,389 | 3,409,248 | 50% | 96% |
| 353 | **632** | 30 | 0 | 15,160 | 15,160 | 1,129 | 129 | 115 | 1,373 | 3,410,620 | 50% | 96% |
| 354 | **426** | 0 | 0 | 70,559 | 70,559 | 814 | 0 | 536 | 1,350 | 3,411,971 | 50% | 96% |
| 355 | **371** | 33 | 0 | 0 | 0 | 1,207 | 142 | 0 | 1,348 | 3,413,319 | 50% | 96% |
| 356 | **667** | 33 | 0 | 0 | 0 | 1,207 | 142 | 0 | 1,348 | 3,414,668 | 50% | 96% |
| 357 | **333** | 0 | 0 | 70,100 | 70,100 | 809 | 0 | 532 | 1,341 | 3,416,009 | 50% | 96% |
| 358 | **579** | 0 | 0 | 70,000 | 70,000 | 808 | 0 | 532 | 1,339 | 3,417,348 | 50% | 96% |
| 359 | **547** | 0 | 0 | 69,922 | 69,922 | 807 | 0 | 531 | 1,338 | 3,418,686 | 50% | 96% |
| 360 | **646** | 32 | 0 | 0 | 0 | 1,170 | 137 | 0 | 1,308 | 3,419,994 | 51% | 97% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 361 | **721** | 0 | 68,000 | 0 | 68,000 | 785 | 0 | 516 | 1,301 | 3,421,295 | 51% | 97% |
| 362 | **516** | 0 | 67,813 | 0 | 67,813 | 783 | 0 | 515 | 1,298 | 3,422,593 | 51% | 97% |
| 363 | **115** | 20 | 0 | 31,790 | 31,790 | 962 | 86 | 241 | 1,289 | 3,423,882 | 51% | 97% |
| 364 | **418** | 0 | 0 | 66,780 | 66,780 | 771 | 0 | 507 | 1,278 | 3,425,160 | 51% | 97% |
| 365 | **4** | 31.0 | 0 | 0 | 0 | 1,134 | 133 | 0 | 1,267 | 3,426,426 | 51% | 97% |
| 366 | **282** | 31 | 0 | 0 | 0 | 1,134 | 133 | 0 | 1,267 | 3,427,693 | 51% | 97% |
| 367 | **607** | 31 | 0 | 0 | 0 | 1,134 | 133 | 0 | 1,267 | 3,428,960 | 52% | 97% |
| 368 | **703** | 31.0 | 0 | 0 | 0 | 1,134 | 133 | 0 | 1,267 | 3,430,227 | 52% | 97% |
| 369 | **185** | 0 | 65,000 | 0 | 65,000 | 750 | 0 | 494 | 1,244 | 3,431,470 | 52% | 97% |
| 370 | **356** | 0 | 64,973 | 0 | 64,973 | 750 | 0 | 493 | 1,243 | 3,432,714 | 52% | 97% |
| 371 | **788** | 0 | 64,734 | 0 | 64,734 | 747 | 0 | 492 | 1,239 | 3,433,952 | 52% | 97% |
| 372 | **480** | 30 | 0 | 0 | 0 | 1,097 | 129 | 0 | 1,226 | 3,435,178 | 52% | 97% |
| 373 | **554** | 30 | 0 | 0 | 0 | 1,097 | 129 | 0 | 1,226 | 3,436,404 | 52% | 97% |
| 374 | **766** | 0 | 0 | 62,000 | 62,000 | 715 | 0 | 471 | 1,186 | 3,437,591 | 53% | 97% |
| 375 | **276** | 29 | 0 | 0 | 0 | 1,061 | 124 | 0 | 1,185 | 3,438,776 | 53% | 97% |
| 376 | **705** | 0 | 0 | 61,104 | 61,104 | 705 | 0 | 464 | 1,169 | 3,439,945 | 53% | 97% |
| 377 | **26** | 0 | 61,000 | 0 | 61,000 | 704 | 0 | 463 | 1,167 | 3,441,112 | 53% | 97% |
| 378 | **506** | 28 | 0 | 0 | 0 | 1,024 | 120 | 0 | 1,144 | 3,442,256 | 53% | 97% |
| 379 | **560** | 28 | 0 | 0 | 0 | 1,024 | 120 | 0 | 1,144 | 3,443,400 | 53% | 97% |
| 380 | **117** | 27 | 0 | 0 | 0 | 987 | 116 | 0 | 1,103 | 3,444,504 | 53% | 97% |
| 381 | **129** | 26 | 0 | 0 | 0 | 951 | 112 | 0 | 1,062 | 3,445,566 | 54% | 97% |
| 382 | **287** | 26 | 0 | 0 | 0 | 951 | 112 | 0 | 1,062 | 3,446,629 | 54% | 97% |
| 383 | **695** | 26 | 0 | 0 | 0 | 951 | 112 | 0 | 1,062 | 3,447,691 | 54% | 97% |
| 384 | **536** | 0 | 0 | 54,000 | 54,000 | 623 | 0 | 410 | 1,033 | 3,448,724 | 54% | 97% |
| 385 | **538** | 0 | 0 | 53,629 | 53,629 | 619 | 0 | 407 | 1,026 | 3,449,751 | 54% | 97% |
| 386 | **594** | 25 | 0 | 0 | 0 | 914 | 107 | 0 | 1,022 | 3,450,772 | 54% | 97% |
| 387 | **683** | 25 | 0 | 0 | 0 | 914 | 107 | 0 | 1,022 | 3,451,794 | 54% | 97% |
| 388 | **183** | 24 | 0 | 0 | 0 | 878 | 103 | 0 | 981 | 3,452,775 | 55% | 97% |
| 389 | **265** | 24 | 0 | 0 | 0 | 878 | 103 | 0 | 981 | 3,453,755 | 55% | 97% |
| 390 | **548** | 24 | 0 | 0 | 0 | 878 | 103 | 0 | 981 | 3,454,736 | 55% | 98% |
| 391 | **128** | 0 | 50,814 | 0 | 50,814 | 586 | 0 | 386 | 972 | 3,455,708 | 55% | 98% |
| 392 | **434** | 0 | 0 | 50,340 | 50,340 | 581 | 0 | 382 | 963 | 3,456,672 | 55% | 98% |
| 393 | **713** | 0 | 0 | 50,000 | 50,000 | 577 | 0 | 380 | 957 | 3,457,628 | 55% | 98% |
| 394 | **463** | 23 | 0 | 0 | 0 | 841 | 99 | 0 | 940 | 3,458,568 | 55% | 98% |
| 395 | **798** | 0 | 35,323 | 13,089 | 48,412 | 559 | 0 | 368 | 926 | 3,459,495 | 56% | 98% |
| 396 | **290** | 22 | 0 | 0 | 0 | 805 | 94 | 0 | 899 | 3,460,394 | 56% | 98% |
| 397 | **396** | 22 | 0 | 0 | 0 | 805 | 94 | 0 | 899 | 3,461,293 | 56% | 98% |
| 398 | **557** | 22 | 0 | 0 | 0 | 805 | 94 | 0 | 899 | 3,462,192 | 56% | 98% |
| 399 | **571** | 22 | 0 | 0 | 0 | 805 | 94 | 0 | 899 | 3,463,091 | 56% | 98% |
| 400 | **258** | 0 | 46,750 | 0 | 46,750 | 539 | 0 | 355 | 895 | 3,463,985 | 56% | 98% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 401 | **616** | 0 | 0 | 45,000 | 45,000 | 519 | 0 | 342 | 861 | 3,464,846 | 56% | 98% |
| 402 | **428** | 21 | 0 | 0 | 0 | 768 | 90 | 0 | 858 | 3,465,704 | 57% | 98% |
| 403 | **665** | 0 | 0 | 43,494 | 43,494 | 502 | 0 | 330 | 832 | 3,466,537 | 57% | 98% |
| 404 | **373** | 0 | 43,168 | 0 | 43,168 | 498 | 0 | 328 | 826 | 3,467,363 | 57% | 98% |
| 405 | **596** | 0 | 0 | 43,050 | 43,050 | 497 | 0 | 327 | 824 | 3,468,186 | 57% | 98% |
| 406 | **114** | 20 | 0 | 0 | 0 | 731 | 86 | 0 | 817 | 3,469,004 | 57% | 98% |
| 407 | **515** | 20 | 0 | 0 | 0 | 731 | 86 | 0 | 817 | 3,469,821 | 57% | 98% |
| 408 | **564** | 20 | 0 | 0 | 0 | 731 | 86 | 0 | 817 | 3,470,638 | 57% | 98% |
| 409 | **593** | 20 | 0 | 0 | 0 | 731 | 86 | 0 | 817 | 3,471,455 | 58% | 98% |
| 410 | **725** | 20 | 0 | 0 | 0 | 731 | 86 | 0 | 817 | 3,472,273 | 58% | 98% |
| 411 | **301** | 0 | 42,000 | 0 | 42,000 | 485 | 0 | 319 | 804 | 3,473,076 | 58% | 98% |
| 412 | **508** | 0 | 0 | 41,283 | 41,283 | 476 | 0 | 314 | 790 | 3,473,866 | 58% | 98% |
| 413 | **260** | 0 | 19,933 | 21,130 | 41,063 | 474 | 0 | 312 | 786 | 3,474,652 | 58% | 98% |
| 414 | **133** | 19 | 0 | 0 | 0 | 695 | 82 | 0 | 776 | 3,475,428 | 58% | 98% |
| 415 | **743** | 19 | 0 | 0 | 0 | 695 | 82 | 0 | 776 | 3,476,205 | 58% | 98% |
| 416 | **764** | 0 | 0 | 38,506 | 38,506 | 444 | 0 | 292 | 737 | 3,476,942 | 59% | 98% |
| 417 | **440** | 18 | 0 | 0 | 0 | 658 | 77 | 0 | 736 | 3,477,677 | 59% | 98% |
| 418 | **522** | 18 | 0 | 0 | 0 | 658 | 77 | 0 | 736 | 3,478,413 | 59% | 98% |
| 419 | **768** | 18 | 0 | 0 | 0 | 658 | 77 | 0 | 736 | 3,479,148 | 59% | 98% |
| 420 | **784** | 18 | 0 | 0 | 0 | 658 | 77 | 0 | 736 | 3,479,884 | 59% | 98% |
| 421 | **250** | 17 | 0 | 0 | 0 | 622 | 73 | 0 | 695 | 3,480,579 | 59% | 98% |
| 422 | **433** | 17 | 0 | 0 | 0 | 622 | 73 | 0 | 695 | 3,481,273 | 59% | 98% |
| 423 | **424** | 0 | 36,224 | 0 | 36,224 | 418 | 0 | 275 | 693 | 3,481,966 | 59% | 98% |
| 424 | **209** | 0 | 35,874 | 0 | 35,874 | 414 | 0 | 272 | 686 | 3,482,653 | 60% | 98% |
| 425 | **243** | 0 | 0 | 35,600 | 35,600 | 411 | 0 | 270 | 681 | 3,483,334 | 60% | 98% |
| 426 | **375** | 0 | 0 | 34,500 | 34,500 | 398 | 0 | 262 | 660 | 3,483,994 | 60% | 98% |
| 427 | **783** | 0 | 0 | 34,194 | 34,194 | 395 | 0 | 260 | 654 | 3,484,648 | 60% | 98% |
| 428 | **88** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 3,485,302 | 60% | 98% |
| 429 | **162** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 3,485,956 | 60% | 98% |
| 430 | **279** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 3,486,610 | 60% | 98% |
| 431 | **372** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 3,487,264 | 61% | 98% |
| 432 | **377** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 3,487,918 | 61% | 98% |
| 433 | **465** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 3,488,571 | 61% | 98% |
| 434 | **572** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 3,489,225 | 61% | 98% |
| 435 | **758** | 0 | 0 | 33,375 | 33,375 | 385 | 0 | 253 | 639 | 3,489,864 | 61% | 98% |
| 436 | **326** | 15 | 0 | 0 | 0 | 549 | 64 | 0 | 613 | 3,490,477 | 61% | 99% |
| 437 | **479** | 15 | 0 | 0 | 0 | 549 | 64 | 0 | 613 | 3,491,090 | 61% | 99% |
| 438 | **682** | 15 | 0 | 0 | 0 | 549 | 64 | 0 | 613 | 3,491,703 | 62% | 99% |
| 439 | **529** | 0 | 0 | 31,780 | 31,780 | 367 | 0 | 241 | 608 | 3,492,311 | 62% | 99% |
| 440 | **286** | 14 | 0 | 4,130 | 4,130 | 503 | 60 | 31 | 595 | 3,492,906 | 62% | 99% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 441 | **256** | 0 | 0 | 30,331 | 30,331 | 350 | 0 | 230 | 580 | 3,493,486 | 62% | 99% |
| 442 | **354** | 0 | 0 | 30,000 | 30,000 | 346 | 0 | 228 | 574 | 3,494,060 | 62% | 99% |
| 443 | **623** | 14 | 0 | 0 | 0 | 512 | 60 | 0 | 572 | 3,494,632 | 62% | 99% |
| 444 | **693** | 14 | 0 | 0 | 0 | 512 | 60 | 0 | 572 | 3,495,204 | 62% | 99% |
| 445 | **582** | 0 | 29,660 | 0 | 29,660 | 342 | 0 | 225 | 568 | 3,495,772 | 63% | 99% |
| 446 | **474** | 0 | 29,642 | 0 | 29,642 | 342 | 0 | 225 | 567 | 3,496,339 | 63% | 99% |
| 447 | **197** | 13 | 0 | 0 | 0 | 475 | 56 | 0 | 531 | 3,496,870 | 63% | 99% |
| 448 | **346** | 13 | 0 | 0 | 0 | 475 | 56 | 0 | 531 | 3,497,401 | 63% | 99% |
| 449 | **360** | 13 | 0 | 0 | 0 | 475 | 56 | 0 | 531 | 3,497,933 | 63% | 99% |
| 450 | **278** | 0 | 0 | 27,248 | 27,248 | 314 | 0 | 207 | 521 | 3,498,454 | 63% | 99% |
| 451 | **220** | 0 | 0 | 26,576 | 26,576 | 307 | 0 | 202 | 509 | 3,498,963 | 63% | 99% |
| 452 | **275** | 0 | 0 | 26,000 | 26,000 | 300 | 0 | 197 | 498 | 3,499,460 | 64% | 99% |
| 453 | **620** | 0 | 0 | 26,000 | 26,000 | 300 | 0 | 197 | 498 | 3,499,958 | 64% | 99% |
| 454 | **154** | 12 | 0 | 0 | 0 | 439 | 51 | 0 | 490 | 3,500,448 | 64% | 99% |
| 455 | **747** | 12 | 0 | 0 | 0 | 439 | 51 | 0 | 490 | 3,500,938 | 64% | 99% |
| 456 | **107** | 0 | 0 | 25,298 | 25,298 | 292 | 0 | 192 | 484 | 3,501,422 | 64% | 99% |
| 457 | **502** | 0 | 24,378 | 0 | 24,378 | 281 | 0 | 185 | 466 | 3,501,889 | 64% | 99% |
| 458 | **378** | 0 | 24,150 | 0 | 24,150 | 279 | 0 | 183 | 462 | 3,502,351 | 64% | 99% |
| 459 | **410** | 0 | 23,766 | 0 | 23,766 | 274 | 0 | 181 | 455 | 3,502,806 | 65% | 99% |
| 460 | **218** | 11 | 0 | 0 | 0 | 402 | 47 | 0 | 449 | 3,503,255 | 65% | 99% |
| 461 | **237** | 11 | 0 | 0 | 0 | 402 | 47 | 0 | 449 | 3,503,705 | 65% | 99% |
| 462 | **271** | 11 | 0 | 0 | 0 | 402 | 47 | 0 | 449 | 3,504,154 | 65% | 99% |
| 463 | **318** | 11 | 0 | 0 | 0 | 402 | 47 | 0 | 449 | 3,504,604 | 65% | 99% |
| 464 | **320** | 11 | 0 | 0 | 0 | 402 | 47 | 0 | 449 | 3,505,053 | 65% | 99% |
| 465 | **370** | 0 | 0 | 23,094 | 23,094 | 267 | 0 | 175 | 442 | 3,505,495 | 65% | 99% |
| 466 | **120** | 0 | 0 | 23,000 | 23,000 | 265 | 0 | 175 | 440 | 3,505,935 | 66% | 99% |
| 467 | **274** | 0 | 0 | 22,200 | 22,200 | 256 | 0 | 169 | 425 | 3,506,360 | 66% | 99% |
| 468 | **684** | 0 | 22,000 | 0 | 22,000 | 254 | 0 | 167 | 421 | 3,506,781 | 66% | 99% |
| 469 | **151** | 0 | 0 | 21,662 | 21,662 | 250 | 0 | 165 | 415 | 3,507,195 | 66% | 99% |
| 470 | **291** | 10 | 0 | 0 | 0 | 366 | 43 | 0 | 409 | 3,507,604 | 66% | 99% |
| 471 | **292** | 10 | 0 | 0 | 0 | 366 | 43 | 0 | 409 | 3,508,013 | 66% | 99% |
| 472 | **300** | 10 | 0 | 0 | 0 | 366 | 43 | 0 | 409 | 3,508,421 | 66% | 99% |
| 473 | **395** | 10 | 0 | 0 | 0 | 366 | 43 | 0 | 409 | 3,508,830 | 67% | 99% |
| 474 | **429** | 0 | 0 | 21,119.94 | 21,120 | 244 | 0 | 160 | 404 | 3,509,234 | 67% | 99% |
| 475 | **673** | 0 | 0 | 20,000 | 20,000 | 231 | 0 | 152 | 383 | 3,509,617 | 67% | 99% |
| 476 | **277** | 9 | 0 | 0 | 0 | 329 | 39 | 0 | 368 | 3,509,985 | 67% | 99% |
| 477 | **319** | 9 | 0 | 0 | 0 | 329 | 39 | 0 | 368 | 3,510,352 | 67% | 99% |
| 478 | **622** | 9 | 0 | 0 | 0 | 329 | 39 | 0 | 368 | 3,510,720 | 67% | 99% |
| 479 | **577** | 0 | 0 | 19,028 | 19,028 | 220 | 0 | 145 | 364 | 3,511,084 | 67% | 99% |
| 480 | **715** | 0 | 0 | 18,195 | 18,195 | 210 | 0 | 138 | 348 | 3,511,432 | 68% | 99% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 481 | 324 | 0 | 0 | 18,058 | 18,058 | 208 | 0 | 137 | 346 | 3,511,778 | 68% | 99% |
| 482 | 257 | 9 | 0 | 200 | 200 | 301 | 39 | 2 | 342 | 3,512,119 | 68% | 99% |
| 483 | 270 | 0 | 17,845 | 0 | 17,845 | 206 | 0 | 136 | 341 | 3,512,461 | 68% | 99% |
| 484 | 704 | 7 | 0 | 4,089 | 4,089 | 273 | 30 | 31 | 334 | 3,512,795 | 68% | 99% |
| 485 | 119 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,513,122 | 68% | 99% |
| 486 | 156 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,513,449 | 68% | 99% |
| 487 | 171 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,513,776 | 68% | 99% |
| 488 | 245 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,514,103 | 69% | 99% |
| 489 | 302 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,514,430 | 69% | 99% |
| 490 | 303 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,514,757 | 69% | 99% |
| 491 | 329 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,515,084 | 69% | 99% |
| 492 | 343 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,515,411 | 69% | 99% |
| 493 | 376 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,515,738 | 69% | 99% |
| 494 | 383 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,516,065 | 69% | 99% |
| 495 | 526 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,516,391 | 70% | 99% |
| 496 | 588 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,516,718 | 70% | 99% |
| 497 | 626 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,517,045 | 70% | 99% |
| 498 | 638 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,517,372 | 70% | 99% |
| 499 | 686 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 3,517,699 | 70% | 99% |
| 500 | 441 | 0 | 0 | 16,856 | 16,856 | 195 | 0 | 128 | 323 | 3,518,022 | 70% | 99% |
| 501 | 222 | 0 | 16,000 | 0 | 16,000 | 185 | 0 | 122 | 306 | 3,518,328 | 70% | 99% |
| 502 | 305 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 3,518,614 | 71% | 99% |
| 503 | 321 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 3,518,900 | 71% | 99% |
| 504 | 366 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 3,519,186 | 71% | 99% |
| 505 | 385 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 3,519,472 | 71% | 99% |
| 506 | 477 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 3,519,758 | 71% | 99% |
| 507 | 625 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 3,520,044 | 71% | 99% |
| 508 | 691 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 3,520,330 | 71% | 99% |
| 509 | 255 | 3 | 5,770 | 4,000 | 9,770 | 197 | 13 | 74 | 284 | 3,520,615 | 72% | 99% |
| 510 | 313 | 0 | 0 | 14,820 | 14,820 | 171 | 0 | 113 | 284 | 3,520,898 | 72% | 99% |
| 511 | 505 | 0 | 0 | 14,820 | 14,820 | 171 | 0 | 113 | 284 | 3,521,182 | 72% | 99% |
| 512 | 685 | 0 | 0 | 14,670 | 14,670 | 169 | 0 | 111 | 281 | 3,521,462 | 72% | 99% |
| 513 | 524 | 0 | 0 | 14,483 | 14,483 | 167 | 0 | 110 | 277 | 3,521,740 | 72% | 99% |
| 514 | 165 | 0 | 14,400 | 0 | 14,400 | 166 | 0 | 109 | 276 | 3,522,015 | 72% | 99% |
| 515 | 177 | 0 | 14,400 | 0 | 14,400 | 166 | 0 | 109 | 276 | 3,522,291 | 72% | 99% |
| 516 | 774 | 0 | 0 | 13,652 | 13,652 | 158 | 0 | 104 | 261 | 3,522,552 | 73% | 99% |
| 517 | 328 | 0 | 0 | 13,614 | 13,614 | 157 | 0 | 103 | 261 | 3,522,812 | 73% | 99% |
| 518 | 442 | 0 | 0 | 13,612 | 13,612 | 157 | 0 | 103 | 260 | 3,523,073 | 73% | 99% |
| 519 | 421 | 0 | 0 | 13,000 | 13,000 | 150 | 0 | 99 | 249 | 3,523,322 | 73% | 99% |
| 520 | 489 | 0 | 12,860 | 0 | 12,860 | 148 | 0 | 98 | 246 | 3,523,568 | 73% | 99% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 521 | **246** | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 3,523,813 | 73% | 99% |
| 522 | **334** | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 3,524,058 | 73% | 99% |
| 523 | **341** | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 3,524,303 | 74% | 99% |
| 524 | **387** | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 3,524,548 | 74% | 99% |
| 525 | **521** | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 3,524,794 | 74% | 99% |
| 526 | **608** | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 3,525,039 | 74% | 99% |
| 527 | **614** | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 3,525,284 | 74% | 99% |
| 528 | **490** | 0 | 0 | 12,024 | 12,024 | 139 | 0 | 91 | 230 | 3,525,514 | 74% | 100% |
| 529 | **753** | 0 | 0 | 11,800 | 11,800 | 136 | 0 | 90 | 226 | 3,525,740 | 74% | 100% |
| 530 | **203** | 0 | 0 | 11,691 | 11,691 | 135 | 0 | 89 | 224 | 3,525,964 | 75% | 100% |
| 531 | **503** | 5 | 0 | 1,250 | 1,250 | 181 | 21 | 9 | 212 | 3,526,176 | 75% | 100% |
| 532 | **542** | 0 | 0 | 11,000 | 11,000 | 127 | 0 | 84 | 210 | 3,526,386 | 75% | 100% |
| 533 | **485** | 0 | 0 | 10,780 | 10,780 | 124 | 0 | 82 | 206 | 3,526,593 | 75% | 100% |
| 534 | **91** | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 3,526,797 | 75% | 100% |
| 535 | **141** | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 3,527,001 | 75% | 100% |
| 536 | **167** | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 3,527,206 | 75% | 100% |
| 537 | **232** | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 3,527,410 | 76% | 100% |
| 538 | **394** | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 3,527,614 | 76% | 100% |
| 539 | **450** | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 3,527,818 | 76% | 100% |
| 540 | **458** | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 3,528,023 | 76% | 100% |
| 541 | **510** | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 3,528,227 | 76% | 100% |
| 542 | **631** | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 3,528,431 | 76% | 100% |
| 543 | **619** | 2 | 0 | 6,700 | 6,700 | 136 | 9 | 51 | 195 | 3,528,627 | 76% | 100% |
| 544 | **157** | 0 | 10,000 | 0 | 10,000 | 115 | 0 | 76 | 191 | 3,528,818 | 77% | 100% |
| 545 | **364** | 0 | 0 | 9,600 | 9,600 | 111 | 0 | 73 | 184 | 3,529,002 | 77% | 100% |
| 546 | **124** | 0 | 9,500 | 0 | 9,500 | 110 | 0 | 72 | 182 | 3,529,183 | 77% | 100% |
| 547 | **486** | 0 | 0 | 9,460 | 9,460 | 109 | 0 | 72 | 181 | 3,529,364 | 77% | 100% |
| 548 | **727** | 0 | 0 | 9,388 | 9,388 | 108 | 0 | 71 | 180 | 3,529,544 | 77% | 100% |
| 549 | **648** | 0 | 0 | 8,640 | 8,640 | 100 | 0 | 66 | 165 | 3,529,709 | 77% | 100% |
| 550 | **199** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,529,873 | 77% | 100% |
| 551 | **211** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,530,036 | 77% | 100% |
| 552 | **227** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,530,200 | 78% | 100% |
| 553 | **312** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,530,363 | 78% | 100% |
| 554 | **382** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,530,527 | 78% | 100% |
| 555 | **412** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,530,690 | 78% | 100% |
| 556 | **417** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,530,854 | 78% | 100% |
| 557 | **447** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,531,017 | 78% | 100% |
| 558 | **451** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,531,180 | 78% | 100% |
| 559 | **482** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,531,344 | 79% | 100% |
| 560 | **528** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,531,507 | 79% | 100% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 561 | **545** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,531,671 | 79% | 100% |
| 562 | **581** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,531,834 | 79% | 100% |
| 563 | **637** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,531,998 | 79% | 100% |
| 564 | **689** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,532,161 | 79% | 100% |
| 565 | **694** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,532,325 | 79% | 100% |
| 566 | **709** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,532,488 | 80% | 100% |
| 567 | **731** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,532,652 | 80% | 100% |
| 568 | **755** | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 3,532,815 | 80% | 100% |
| 569 | **643** | 0 | 0 | 8,270 | 8,270 | 95 | 0 | 63 | 158 | 3,532,973 | 80% | 100% |
| 570 | **390** | 0 | 0 | 8,189 | 8,189 | 95 | 0 | 62 | 157 | 3,533,130 | 80% | 100% |
| 571 | **345** | 0 | 0 | 8,070 | 8,070 | 93 | 0 | 61 | 154 | 3,533,284 | 80% | 100% |
| 572 | **325** | 0 | 0 | 8,010 | 8,010 | 92 | 0 | 61 | 153 | 3,533,438 | 80% | 100% |
| 573 | **327** | 0 | 0 | 7,575 | 7,575 | 87 | 0 | 58 | 145 | 3,533,583 | 81% | 100% |
| 574 | **499** | 0 | 0 | 7,300 | 7,300 | 84 | 0 | 55 | 140 | 3,533,722 | 81% | 100% |
| 575 | **609** | 0 | 0 | 7,206 | 7,206 | 83 | 0 | 55 | 138 | 3,533,860 | 81% | 100% |
| 576 | **497** | 0 | 0 | 7,188 | 7,188 | 83 | 0 | 55 | 138 | 3,533,998 | 81% | 100% |
| 577 | **445** | 0 | 0 | 6,713 | 6,713 | 77 | 0 | 51 | 128 | 3,534,126 | 81% | 100% |
| 578 | **600** | 0 | 0 | 6,640 | 6,640 | 77 | 0 | 50 | 127 | 3,534,253 | 81% | 100% |
| 579 | **49** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,534,376 | 81% | 100% |
| 580 | **212** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,534,498 | 82% | 100% |
| 581 | **223** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,534,621 | 82% | 100% |
| 582 | **409** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,534,744 | 82% | 100% |
| 583 | **427** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,534,866 | 82% | 100% |
| 584 | **435** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,534,989 | 82% | 100% |
| 585 | **541** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,535,111 | 82% | 100% |
| 586 | **552** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,535,234 | 82% | 100% |
| 587 | **629** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,535,356 | 83% | 100% |
| 588 | **657** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,535,479 | 83% | 100% |
| 589 | **672** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,535,602 | 83% | 100% |
| 590 | **678** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,535,724 | 83% | 100% |
| 591 | **769** | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 3,535,847 | 83% | 100% |
| 592 | **690** | 0 | 0 | 6,100 | 6,100 | 70 | 0 | 46 | 117 | 3,535,964 | 83% | 100% |
| 593 | **569** | 0 | 0 | 5,359 | 5,359 | 62 | 0 | 41 | 103 | 3,536,066 | 83% | 100% |
| 594 | **618** | 0 | 5,322 | 0 | 5,322 | 61 | 0 | 40 | 102 | 3,536,168 | 84% | 100% |
| 595 | **551** | 0 | 0 | 5,208 | 5,208 | 60 | 0 | 40 | 100 | 3,536,268 | 84% | 100% |
| 596 | **392** | 0 | 2,290 | 2,769 | 5,059 | 58 | 0 | 38 | 97 | 3,536,364 | 84% | 100% |
| 597 | **533** | 0 | 0 | 4,890 | 4,890 | 56 | 0 | 37 | 94 | 3,536,458 | 84% | 100% |
| 598 | **674** | 0 | 0 | 4,800 | 4,800 | 55 | 0 | 36 | 92 | 3,536,550 | 84% | 100% |
| 599 | **452** | 0 | 0 | 4,605 | 4,605 | 53 | 0 | 35 | 88 | 3,536,638 | 84% | 100% |
| 600 | **519** | 0 | 0 | 4,500 | 4,500 | 52 | 0 | 34 | 86 | 3,536,724 | 84% | 100% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 601 | **22** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,536,806 | 85% | 100% |
| 602 | **152** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,536,888 | 85% | 100% |
| 603 | **161** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,536,969 | 85% | 100% |
| 604 | **184** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,051 | 85% | 100% |
| 605 | **204** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,133 | 85% | 100% |
| 606 | **213** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,214 | 85% | 100% |
| 607 | **262** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,296 | 85% | 100% |
| 608 | **263** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,378 | 86% | 100% |
| 609 | **293** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,460 | 86% | 100% |
| 610 | **315** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,541 | 86% | 100% |
| 611 | **335** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,623 | 86% | 100% |
| 612 | **339** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,705 | 86% | 100% |
| 613 | **359** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,787 | 86% | 100% |
| 614 | **411** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,868 | 86% | 100% |
| 615 | **430** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,537,950 | 86% | 100% |
| 616 | **431** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,032 | 87% | 100% |
| 617 | **448** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,113 | 87% | 100% |
| 618 | **467** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,195 | 87% | 100% |
| 619 | **500** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,277 | 87% | 100% |
| 620 | **535** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,359 | 87% | 100% |
| 621 | **546** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,440 | 87% | 100% |
| 622 | **549** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,522 | 87% | 100% |
| 623 | **561** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,604 | 88% | 100% |
| 624 | **584** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,686 | 88% | 100% |
| 625 | **599** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,767 | 88% | 100% |
| 626 | **617** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,849 | 88% | 100% |
| 627 | **621** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,538,931 | 88% | 100% |
| 628 | **627** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,012 | 88% | 100% |
| 629 | **636** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,094 | 88% | 100% |
| 630 | **660** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,176 | 89% | 100% |
| 631 | **671** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,258 | 89% | 100% |
| 632 | **677** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,339 | 89% | 100% |
| 633 | **702** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,421 | 89% | 100% |
| 634 | **720** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,503 | 89% | 100% |
| 635 | **738** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,585 | 89% | 100% |
| 636 | **750** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,666 | 89% | 100% |
| 637 | **761** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,748 | 90% | 100% |
| 638 | **765** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,830 | 90% | 100% |
| 639 | **767** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,911 | 90% | 100% |
| 640 | **782** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,539,993 | 90% | 100% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 641 | **791** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 3,540,075 | 90% | 100% |
| 642 | **420** | 0 | 0 | 4,196 | 4,196 | 48 | 0 | 32 | 80 | 3,540,155 | 90% | 100% |
| 643 | **611** | 0 | 0 | 3,820 | 3,820 | 44 | 0 | 29 | 73 | 3,540,228 | 90% | 100% |
| 644 | **688** | 0 | 0 | 3,640 | 3,640 | 42 | 0 | 28 | 70 | 3,540,298 | 91% | 100% |
| 645 | **530** | 0 | 3,625 | 0 | 3,625 | 42 | 0 | 28 | 69 | 3,540,367 | 91% | 100% |
| 646 | **737** | 0 | 0 | 3,300 | 3,300 | 38 | 0 | 25 | 63 | 3,540,430 | 91% | 100% |
| 647 | **284** | 0 | 0 | 3,025 | 3,025 | 35 | 0 | 23 | 58 | 3,540,488 | 91% | 100% |
| 648 | **539** | 0 | 3,000 | 0 | 3,000 | 35 | 0 | 23 | 57 | 3,540,546 | 91% | 100% |
| 649 | **780** | 0 | 0 | 2,950 | 2,950 | 34 | 0 | 22 | 56 | 3,540,602 | 91% | 100% |
| 650 | **700** | 0 | 1,205 | 1,595 | 2,800 | 32 | 0 | 21 | 54 | 3,540,656 | 91% | 100% |
| 651 | **576** | 0 | 0 | 2,736 | 2,736 | 32 | 0 | 21 | 52 | 3,540,708 | 92% | 100% |
| 652 | **242** | 0 | 0 | 2,730 | 2,730 | 32 | 0 | 21 | 52 | 3,540,760 | 92% | 100% |
| 653 | **749** | 0 | 2,650 | 0 | 2,650 | 31 | 0 | 20 | 51 | 3,540,811 | 92% | 100% |
| 654 | **391** | 0 | 0 | 2,600 | 2,600 | 30 | 0 | 20 | 50 | 3,540,861 | 92% | 100% |
| 655 | **681** | 0 | 0 | 2,532 | 2,532 | 29 | 0 | 19 | 48 | 3,540,909 | 92% | 100% |
| 656 | **711** | 0 | 0 | 2,320 | 2,320 | 27 | 0 | 18 | 44 | 3,540,954 | 92% | 100% |
| 657 | **531** | 0 | 0 | 2,240 | 2,240 | 26 | 0 | 17 | 43 | 3,540,996 | 92% | 100% |
| 658 | **634** | 0 | 0 | 2,139 | 2,139 | 25 | 0 | 16 | 41 | 3,541,037 | 93% | 100% |
| 659 | **13** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,078 | 93% | 100% |
| 660 | **55** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,119 | 93% | 100% |
| 661 | **71** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,160 | 93% | 100% |
| 662 | **116** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,201 | 93% | 100% |
| 663 | **180** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,242 | 93% | 100% |
| 664 | **188** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,283 | 93% | 100% |
| 665 | **231** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,323 | 94% | 100% |
| 666 | **251** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,364 | 94% | 100% |
| 667 | **252** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,405 | 94% | 100% |
| 668 | **254** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,446 | 94% | 100% |
| 669 | **269** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,487 | 94% | 100% |
| 670 | **295** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,528 | 94% | 100% |
| 671 | **386** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,569 | 94% | 100% |
| 672 | **446** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,610 | 95% | 100% |
| 673 | **460** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,650 | 95% | 100% |
| 674 | **491** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,691 | 95% | 100% |
| 675 | **496** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,732 | 95% | 100% |
| 676 | **498** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,773 | 95% | 100% |
| 677 | **556** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,814 | 95% | 100% |
| 678 | **568** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,855 | 95% | 100% |
| 679 | **587** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,896 | 95% | 100% |
| 680 | **595** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,936 | 96% | 100% |

## GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 681 | **598** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,541,977 | 96% | 100% |
| 682 | **613** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,018 | 96% | 100% |
| 683 | **640** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,059 | 96% | 100% |
| 684 | **642** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,100 | 96% | 100% |
| 685 | **645** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,141 | 96% | 100% |
| 686 | **658** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,182 | 96% | 100% |
| 687 | **661** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,222 | 97% | 100% |
| 688 | **680** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,263 | 97% | 100% |
| 689 | **712** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,304 | 97% | 100% |
| 690 | **714** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,345 | 97% | 100% |
| 691 | **718** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,386 | 97% | 100% |
| 692 | **722** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,427 | 97% | 100% |
| 693 | **724** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,468 | 97% | 100% |
| 694 | **732** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,509 | 98% | 100% |
| 695 | **733** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,549 | 98% | 100% |
| 696 | **744** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,590 | 98% | 100% |
| 697 | **746** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,631 | 98% | 100% |
| 698 | **759** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,672 | 98% | 100% |
| 699 | **775** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,713 | 98% | 100% |
| 700 | **781** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,754 | 98% | 100% |
| 701 | **787** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,795 | 99% | 100% |
| 702 | **790** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,835 | 99% | 100% |
| 703 | **793** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 3,542,876 | 99% | 100% |
| 704 | **697** | 0 | 0 | 2,000 | 2,000 | 23 | 0 | 15 | 38 | 3,542,915 | 99% | 100% |
| 705 | **739** | 0 | 0 | 1,904 | 1,904 | 22 | 0 | 14 | 36 | 3,542,951 | 99% | 100% |
| 706 | **679** | 0 | 0 | 1,750 | 1,750 | 20 | 0 | 13 | 33 | 3,542,984 | 99% | 100% |
| 707 | **403** | 0 | 0 | 924 | 924 | 11 | 0 | 7 | 18 | 3,543,002 | 99% | 100% |
| 708 | **137** | 0 | 0 | 900 | 900 | 10 | 0 | 7 | 17 | 3,543,019 | 100% | 100% |
| 709 | **756** | 0 | 0 | 840 | 840 | 10 | 0 | 6 | 16 | 3,543,035 | 100% | 100% |
| 710 | **751** | 0 | 0 | 800 | 800 | 9 | 0 | 6 | 15 | 3,543,051 | 100% | 100% |
| 711 | **350** | 0 | 744 | 0 | 744 | 9 | 0 | 6 | 14 | 3,543,065 | 100% | 100% |

1. Direct CO2 emissions calculated using URBEMIS model fo CO2 emissions only. Defaults were used except for the avg trip rates which were weighted for the week (19.54 for residential, 6.02 for office). Total direct CO2 emissions includes construction, area and operational emissions (construction emissions amortized over 30 years).

Ratio for direct commercial CO2 based on project #144: 18,464 MT/yr/1,600,000 ft2 = 0.01154 and residential based on project #30: 109,757 MT/yr/3,001 units = 36.5735

2. Annual Electricity Usage based on annual electricity and water-related energy use (8.58 MW/unit) in Southern California from the California Energy Consumption Data Management System (http://ecdms.energy.ca.gov/elecbycounty.asp#results). Annual Statewide Energy Intensity (1,100 lbs/MWh) from the "Reporting and Verification of GHG Emissions in Electricity Sector" (California Public Utilities Commmission and California Energy Commission Joint Decision, September 2007)

3. Annual Electricity Usage based on statewide annual electricity and water-related energy use (0.01519 MW/ft$^2$) from the California Commercial End-Use Survey (Itron, Inc for California Energy Commission, March 2006). Annual Statewide Energy Intensity (1,100 lbs/MWh) from the "Reporting and Verification of GHG Emissions in Electricity Sector"

**GHG Emissions and Capture Rates for 711 SCAQMD Residential, Commercial and Mixed Use Projects (2007-2008) from OPR Database**

| Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions[3] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|

(California Public Utilities Commmission and California Energy Commission Joint Decision, September 2007)

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 443 | 2,995 | 0 | 0 | 0 | 97,430 | 12,849 | 0 | 110,278 | 110,278 | 0% | 4% |
| 2 | 25 | 1,677 | 0 | 0 | 0 | 61,333 | 7,194 | 0 | 68,527 | 178,806 | 0% | 7% |
| 3 | 644 | 1,525 | 0 | 0 | 0 | 55,774 | 6,542 | 0 | 62,316 | 241,122 | 1% | 9% |
| 4 | 471 | 1,500 | 0 | 0 | 0 | 54,860 | 6,435 | 0 | 61,295 | 302,416 | 1% | 11% |
| 5 | 8 | 1,297 | 0 | 0 | 0 | 42,204 | 5,564 | 0 | 47,769 | 350,185 | 1% | 13% |
| 6 | 66 | 1,115 | 0 | 0 | 0 | 40,779 | 4,783 | 0 | 45,562 | 395,747 | 1% | 14% |
| 7 | 762 | 1093 | 0 | 0 | 0 | 39,974 | 4,689 | 0 | 44,663 | 440,410 | 1% | 16% |
| 8 | 101 | 1,208 | 0 | 0 | 0 | 39,310 | 5,182 | 0 | 44,492 | 484,903 | 2% | 18% |
| 9 | 125 | 1,086 | 0 | 0 | 0 | 39,718 | 4,659 | 0 | 44,377 | 529,280 | 2% | 19% |
| 10 | 111 | 1074 | 0 | 0 | 0 | 39,279 | 4,607 | 0 | 43,887 | 573,167 | 2% | 21% |
| 11 | 110 | 1,035 | 0 | 0 | 0 | 37,853 | 4,440 | 0 | 42,293 | 615,460 | 2% | 23% |
| 12 | 336 | 980 | 0 | 0 | 0 | 35,842 | 4,204 | 0 | 40,046 | 655,506 | 2% | 24% |
| 13 | 109 | 1,000 | 0 | 0 | 0 | 32,542 | 4,290 | 0 | 36,832 | 692,338 | 3% | 25% |
| 14 | 675 | 955 | 0 | 0 | 0 | 31,079 | 4,097 | 0 | 35,176 | 727,514 | 3% | 27% |
| 15 | 381 | 854 | 0 | 0 | 0 | 31,233 | 3,664 | 0 | 34,897 | 762,411 | 3% | 28% |
| 16 | 138 | 903 | 0 | 0 | 0 | 29,386 | 3,874 | 0 | 33,260 | 795,671 | 3% | 29% |
| 17 | 288 | 808 | 0 | 0 | 0 | 29,551 | 3,466 | 0 | 33,017 | 828,689 | 3% | 30% |
| 18 | 130 | 807 | 0 | 0 | 0 | 29,514 | 3,462 | 0 | 32,976 | 861,665 | 4% | 32% |
| 19 | 215 | 806 | 0 | 0 | 0 | 29,478 | 3,458 | 0 | 32,936 | 894,601 | 4% | 33% |
| 20 | 68 | 787 | 0 | 0 | 0 | 28,783 | 3,376 | 0 | 32,159 | 926,760 | 4% | 34% |
| 21 | 2 | 760 | 0 | 0 | 0 | 27,795 | 3,260 | 0 | 31,056 | 957,816 | 4% | 35% |
| 22 | 200 | 790 | 0 | 0 | 0 | 25,712 | 3,389 | 0 | 29,101 | 986,916 | 5% | 36% |
| 23 | 189 | 786 | 0 | 0 | 0 | 25,582 | 3,372 | 0 | 28,954 | 1,015,870 | 5% | 37% |
| 24 | 6 | 742 | 0 | 0 | 0 | 24,151 | 3,183 | 0 | 27,334 | 1,043,204 | 5% | 38% |
| 25 | 60 | 665 | 0 | 0 | 0 | 24,321 | 2,853 | 0 | 27,174 | 1,070,378 | 5% | 39% |
| 26 | 64 | 650 | 0 | 0 | 0 | 23,772 | 2,789 | 0 | 26,561 | 1,096,939 | 5% | 40% |
| 27 | 16 | 721 | 0 | 0 | 0 | 23,468 | 3,093 | 0 | 26,561 | 1,123,500 | 6% | 41% |
| 28 | 580 | 713 | 0 | 0 | 0 | 23,208 | 3,059 | 0 | 26,266 | 1,149,766 | 6% | 42% |
| 29 | 100 | 603 | 0 | 0 | 0 | 19,630 | 2,587 | 0 | 22,217 | 1,171,983 | 6% | 43% |
| 30 | 757 | 600 | 0 | 0 | 0 | 19,533 | 2,574 | 0 | 22,107 | 1,194,090 | 6% | 44% |
| 31 | 351 | 535 | 0 | 0 | 0 | 19,567 | 2,295 | 0 | 21,862 | 1,215,952 | 6% | 45% |
| 32 | 316 | 562 | 0 | 0 | 0 | 18,297 | 2,411 | 0 | 20,708 | 1,236,659 | 7% | 45% |
| 33 | 14 | 484 | 0 | 0 | 0 | 17,701 | 2,076 | 0 | 19,778 | 1,256,437 | 7% | 46% |
| 34 | 186 | 536 | 0 | 0 | 0 | 17,451 | 2,299 | 0 | 19,751 | 1,276,188 | 7% | 47% |
| 35 | 93 | 532 | 0 | 0 | 0 | 17,321 | 2,282 | 0 | 19,604 | 1,295,792 | 7% | 47% |
| 36 | 89 | 469 | 0 | 0 | 0 | 17,153 | 2,012 | 0 | 19,165 | 1,314,956 | 7% | 48% |
| 37 | 208 | 457 | 0 | 0 | 0 | 16,714 | 1,961 | 0 | 18,674 | 1,333,631 | 8% | 49% |
| 38 | 59 | 504 | 0 | 0 | 0 | 16,411 | 2,162 | 0 | 18,573 | 1,352,204 | 8% | 50% |
| 39 | 630 | 471 | 0 | 0 | 0 | 15,338 | 2,021 | 0 | 17,358 | 1,369,562 | 8% | 50% |
| 40 | 106 | 450 | 0 | 0 | 0 | 14,655 | 1,931 | 0 | 16,585 | 1,386,147 | 8% | 51% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 513 | 398 | 0 | 0 | 0 | 14,556 | 1,707 | 0 | 16,263 | 1,402,411 | 8% | 51% |
| 42 | 511 | 440 | 0 | 0 | 0 | 14,329 | 1,888 | 0 | 16,217 | 1,418,628 | 9% | 52% |
| 43 | 308 | 396 | 0 | 0 | 0 | 14,483 | 1,699 | 0 | 16,182 | 1,434,810 | 9% | 53% |
| 44 | 478 | 396 | 0 | 0 | 0 | 14,483 | 1,699 | 0 | 16,182 | 1,450,991 | 9% | 53% |
| 45 | 229 | 439 | 0 | 0 | 0 | 14,297 | 1,883 | 0 | 16,180 | 1,467,172 | 9% | 54% |
| 46 | 501 | 384 | 0 | 0 | 0 | 14,044 | 1,647 | 0 | 15,691 | 1,482,863 | 9% | 54% |
| 47 | 285 | 400 | 0 | 0 | 0 | 13,026 | 1,716 | 0 | 14,742 | 1,497,605 | 10% | 55% |
| 48 | 45 | 400 | 0 | 0 | 0 | 13,026 | 1,716 | 0 | 14,742 | 1,512,348 | 10% | 55% |
| 49 | 574 | 359 | 0 | 0 | 0 | 13,130 | 1,540 | 0 | 14,670 | 1,527,017 | 10% | 56% |
| 50 | 102 | 398 | 0 | 0 | 0 | 12,961 | 1,707 | 0 | 14,669 | 1,541,686 | 10% | 56% |
| 51 | 221 | 353 | 0 | 0 | 0 | 12,910 | 1,514 | 0 | 14,425 | 1,556,111 | 10% | 57% |
| 52 | 355 | 353 | 0 | 0 | 0 | 12,910 | 1,514 | 0 | 14,425 | 1,570,535 | 11% | 58% |
| 53 | 294 | 340 | 0 | 0 | 0 | 12,435 | 1,459 | 0 | 13,893 | 1,584,429 | 11% | 58% |
| 54 | 179 | 375 | 0 | 0 | 0 | 12,213 | 1,609 | 0 | 13,822 | 1,598,251 | 11% | 59% |
| 55 | 310 | 330 | 0 | 0 | 0 | 12,069 | 1,416 | 0 | 13,485 | 1,611,736 | 11% | 59% |
| 56 | 40 | 358 | 0 | 0 | 0 | 11,660 | 1,536 | 0 | 13,196 | 1,624,932 | 11% | 59% |
| 57 | 655 | 320 | 0 | 0 | 0 | 11,703 | 1,373 | 0 | 13,076 | 1,638,008 | 12% | 60% |
| 58 | 401 | 348 | 0 | 0 | 0 | 11,335 | 1,493 | 0 | 12,828 | 1,650,836 | 12% | 60% |
| 59 | 553 | 300 | 0 | 0 | 0 | 10,972 | 1,287 | 0 | 12,259 | 1,663,095 | 12% | 61% |
| 60 | 723 | 300 | 0 | 0 | 0 | 10,972 | 1,287 | 0 | 12,259 | 1,675,354 | 12% | 61% |
| 61 | 264 | 330 | 0 | 0 | 0 | 10,750 | 1,416 | 0 | 12,166 | 1,687,519 | 13% | 62% |
| 62 | 543 | 330 | 0 | 0 | 0 | 10,750 | 1,416 | 0 | 12,166 | 1,699,685 | 13% | 62% |
| 63 | 283 | 292 | 0 | 0 | 0 | 10,679 | 1,253 | 0 | 11,932 | 1,711,617 | 13% | 63% |
| 64 | 719 | 292 | 0 | 0 | 0 | 10,679 | 1,253 | 0 | 11,932 | 1,723,549 | 13% | 63% |
| 65 | 153 | 286 | 0 | 0 | 0 | 10,460 | 1,227 | 0 | 11,687 | 1,735,236 | 13% | 64% |
| 66 | 103 | 311 | 0 | 0 | 0 | 10,132 | 1,334 | 0 | 11,466 | 1,746,702 | 14% | 64% |
| 67 | 730 | 278 | 0 | 0 | 0 | 10,167 | 1,193 | 0 | 11,360 | 1,758,062 | 14% | 64% |
| 68 | 187 | 307 | 0 | 0 | 0 | 10,002 | 1,317 | 0 | 11,319 | 1,769,381 | 14% | 65% |
| 69 | 537 | 274 | 0 | 0 | 0 | 10,021 | 1,175 | 0 | 11,196 | 1,780,577 | 14% | 65% |
| 70 | 225 | 272 | 0 | 0 | 0 | 9,948 | 1,167 | 0 | 11,115 | 1,791,692 | 14% | 66% |
| 71 | 194 | 260 | 0 | 0 | 0 | 9,509 | 1,115 | 0 | 10,624 | 1,802,316 | 15% | 66% |
| 72 | 369 | 288 | 0 | 0 | 0 | 9,384 | 1,236 | 0 | 10,619 | 1,812,936 | 15% | 66% |
| 73 | 48 | 287 | 0 | 0 | 0 | 9,351 | 1,231 | 0 | 10,583 | 1,823,519 | 15% | 67% |
| 74 | 663 | 257 | 0 | 0 | 0 | 9,399 | 1,103 | 0 | 10,502 | 1,834,020 | 15% | 67% |
| 75 | 487 | 255 | 0 | 0 | 0 | 9,326 | 1,094 | 0 | 10,420 | 1,844,440 | 15% | 68% |
| 76 | 393 | 251 | 0 | 0 | 0 | 9,180 | 1,077 | 0 | 10,257 | 1,854,697 | 16% | 68% |
| 77 | 1 | 251 | 0 | 0 | 0 | 9,180 | 1,077 | 0 | 10,257 | 1,864,954 | 16% | 68% |
| 78 | 76 | 250 | 0 | 0 | 0 | 9,143 | 1,073 | 0 | 10,216 | 1,875,169 | 16% | 69% |
| 79 | 146 | 249 | 0 | 0 | 0 | 9,107 | 1,068 | 0 | 10,175 | 1,885,344 | 16% | 69% |
| 80 | 492 | 246 | 0 | 0 | 0 | 8,997 | 1,055 | 0 | 10,052 | 1,895,397 | 16% | 69% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 81 | 436 | 240 | 0 | 0 | 0 | 8,778 | 1,030 | 0 | 9,807 | 1,905,204 | 17% | 70% |
| 82 | 422 | 237 | 0 | 0 | 0 | 8,668 | 1,017 | 0 | 9,685 | 1,914,888 | 17% | 70% |
| 83 | 63 | 262 | 0 | 0 | 0 | 8,538 | 1,124 | 0 | 9,662 | 1,924,551 | 17% | 70% |
| 84 | 27 | 233 | 0 | 0 | 0 | 8,522 | 1,000 | 0 | 9,521 | 1,934,072 | 17% | 71% |
| 85 | 437 | 230 | 0 | 0 | 0 | 8,412 | 987 | 0 | 9,398 | 1,943,470 | 17% | 71% |
| 86 | 567 | 228 | 0 | 0 | 0 | 8,339 | 978 | 0 | 9,317 | 1,952,787 | 18% | 72% |
| 87 | 70 | 252 | 0 | 0 | 0 | 8,213 | 1,081 | 0 | 9,294 | 1,962,081 | 18% | 72% |
| 88 | 198 | 226 | 0 | 0 | 0 | 8,265 | 970 | 0 | 9,235 | 1,971,316 | 18% | 72% |
| 89 | 439 | 225 | 0 | 0 | 0 | 8,229 | 965 | 0 | 9,194 | 1,980,511 | 18% | 73% |
| 90 | 462 | 224 | 0 | 0 | 0 | 8,192 | 961 | 0 | 9,153 | 1,989,664 | 18% | 73% |
| 91 | 647 | 219 | 0 | 0 | 0 | 8,009 | 940 | 0 | 8,949 | 1,998,613 | 19% | 73% |
| 92 | 145 | 215 | 0 | 0 | 0 | 7,863 | 922 | 0 | 8,786 | 2,007,398 | 19% | 74% |
| 93 | 532 | 211 | 0 | 0 | 0 | 7,717 | 905 | 0 | 8,622 | 2,016,020 | 19% | 74% |
| 94 | 234 | 210 | 0 | 0 | 0 | 7,680 | 901 | 0 | 8,581 | 2,024,602 | 19% | 74% |
| 95 | 31 | 232 | 0 | 0 | 0 | 7,558 | 995 | 0 | 8,553 | 2,033,155 | 19% | 74% |
| 96 | 216 | 206 | 0 | 0 | 0 | 7,534 | 884 | 0 | 8,418 | 2,041,573 | 20% | 75% |
| 97 | 573 | 225 | 0 | 0 | 0 | 7,330 | 965 | 0 | 8,296 | 2,049,869 | 20% | 75% |
| 98 | 589 | 198 | 0 | 0 | 0 | 7,241 | 849 | 0 | 8,091 | 2,057,959 | 20% | 75% |
| 99 | 605 | 219 | 0 | 0 | 0 | 7,135 | 940 | 0 | 8,075 | 2,066,034 | 20% | 76% |
| 100 | 736 | 197 | 0 | 0 | 0 | 7,205 | 845 | 0 | 8,050 | 2,074,084 | 20% | 76% |
| 101 | 280 | 196 | 0 | 0 | 0 | 7,168 | 841 | 0 | 8,009 | 2,082,093 | 21% | 76% |
| 102 | 517 | 194 | 0 | 0 | 0 | 7,095 | 832 | 0 | 7,927 | 2,090,021 | 21% | 77% |
| 103 | 555 | 214 | 0 | 0 | 0 | 6,973 | 918 | 0 | 7,891 | 2,097,912 | 21% | 77% |
| 104 | 206 | 212 | 0 | 0 | 0 | 6,908 | 909 | 0 | 7,817 | 2,105,729 | 21% | 77% |
| 105 | 50 | 188 | 0 | 0 | 0 | 6,876 | 807 | 0 | 7,682 | 2,113,411 | 22% | 77% |
| 106 | 56 | 204 | 0 | 0 | 0 | 6,647 | 875 | 0 | 7,523 | 2,120,934 | 22% | 78% |
| 107 | 65 | 201 | 0 | 0 | 0 | 6,550 | 862 | 0 | 7,412 | 2,128,346 | 22% | 78% |
| 108 | 191 | 180 | 0 | 0 | 0 | 6,583 | 772 | 0 | 7,355 | 2,135,701 | 22% | 78% |
| 109 | 139 | 177 | 0 | 0 | 0 | 6,473 | 759 | 0 | 7,233 | 2,142,934 | 22% | 78% |
| 110 | 20 | 195 | 0 | 0 | 0 | 6,355 | 837 | 0 | 7,191 | 2,150,125 | 23% | 79% |
| 111 | 406 | 174 | 0 | 0 | 0 | 6,364 | 746 | 0 | 7,110 | 2,157,235 | 23% | 79% |
| 112 | 453 | 174 | 0 | 0 | 0 | 6,364 | 746 | 0 | 7,110 | 2,164,346 | 23% | 79% |
| 113 | 470 | 191 | 0 | 0 | 0 | 6,225 | 819 | 0 | 7,044 | 2,171,390 | 23% | 80% |
| 114 | 196 | 171 | 0 | 0 | 0 | 6,254 | 734 | 0 | 6,988 | 2,178,377 | 23% | 80% |
| 115 | 653 | 168 | 0 | 0 | 0 | 6,144 | 721 | 0 | 6,865 | 2,185,242 | 24% | 80% |
| 116 | 57 | 184 | 0 | 0 | 0 | 5,997 | 789 | 0 | 6,786 | 2,192,029 | 24% | 80% |
| 117 | 5 | 165 | 0 | 0 | 0 | 6,035 | 708 | 0 | 6,742 | 2,198,771 | 24% | 81% |
| 118 | 42 | 163 | 0 | 0 | 0 | 5,961 | 699 | 0 | 6,661 | 2,205,432 | 24% | 81% |
| 119 | 84 | 163 | 0 | 0 | 0 | 5,961 | 699 | 0 | 6,661 | 2,212,092 | 24% | 81% |
| 120 | 150 | 160 | 0 | 0 | 0 | 5,852 | 686 | 0 | 6,538 | 2,218,630 | 25% | 81% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 121 | 592 | 160 | 0 | 0 | 0 | 5,852 | 686 | 0 | 6,538 | 2,225,169 | 25% | 81% |
| 122 | 459 | 158 | 0 | 0 | 0 | 5,779 | 678 | 0 | 6,456 | 2,231,625 | 25% | 82% |
| 123 | 670 | 175 | 0 | 0 | 0 | 5,701 | 751 | 0 | 6,452 | 2,238,077 | 25% | 82% |
| 124 | 230 | 156 | 0 | 0 | 0 | 5,705 | 669 | 0 | 6,375 | 2,244,451 | 25% | 82% |
| 125 | 575 | 155 | 0 | 0 | 0 | 5,669 | 665 | 0 | 6,334 | 2,250,785 | 26% | 82% |
| 126 | 273 | 151 | 0 | 0 | 0 | 5,523 | 648 | 0 | 6,170 | 2,256,955 | 26% | 83% |
| 127 | 398 | 166 | 0 | 0 | 0 | 5,408 | 712 | 0 | 6,121 | 2,263,076 | 26% | 83% |
| 128 | 472 | 164 | 0 | 0 | 0 | 5,343 | 704 | 0 | 6,047 | 2,269,123 | 26% | 83% |
| 129 | 79 | 158 | 0 | 0 | 0 | 5,148 | 678 | 0 | 5,826 | 2,274,949 | 26% | 83% |
| 130 | 416 | 142 | 0 | 0 | 0 | 5,193 | 609 | 0 | 5,803 | 2,280,752 | 27% | 84% |
| 131 | 591 | 141 | 0 | 0 | 0 | 5,157 | 605 | 0 | 5,762 | 2,286,513 | 27% | 84% |
| 132 | 379 | 156 | 0 | 0 | 0 | 5,083 | 669 | 0 | 5,753 | 2,292,266 | 27% | 84% |
| 133 | 384 | 140 | 0 | 0 | 0 | 5,120 | 601 | 0 | 5,721 | 2,297,987 | 27% | 84% |
| 134 | 534 | 140 | 0 | 0 | 0 | 5,120 | 601 | 0 | 5,721 | 2,303,708 | 27% | 84% |
| 135 | 748 | 131 | 0 | 0 | 0 | 4,791 | 562 | 0 | 5,353 | 2,309,061 | 28% | 85% |
| 136 | 105 | 128 | 0 | 0 | 0 | 4,681 | 549 | 0 | 5,230 | 2,314,291 | 28% | 85% |
| 137 | 405 | 128 | 0 | 0 | 0 | 4,681 | 549 | 0 | 5,230 | 2,319,522 | 28% | 85% |
| 138 | 367 | 127 | 0 | 0 | 0 | 4,645 | 545 | 0 | 5,190 | 2,324,711 | 28% | 85% |
| 139 | 121 | 126 | 0 | 0 | 0 | 4,608 | 541 | 0 | 5,149 | 2,329,860 | 28% | 85% |
| 140 | 527 | 125 | 0 | 0 | 0 | 4,572 | 536 | 0 | 5,108 | 2,334,968 | 29% | 85% |
| 141 | 149 | 123 | 0 | 0 | 0 | 4,498 | 528 | 0 | 5,026 | 2,339,994 | 29% | 86% |
| 142 | 488 | 136 | 0 | 0 | 0 | 4,433 | 583 | 0 | 5,016 | 2,345,010 | 29% | 86% |
| 143 | 108 | 120 | 0 | 0 | 0 | 4,389 | 515 | 0 | 4,904 | 2,349,914 | 29% | 86% |
| 144 | 134 | 120 | 0 | 0 | 0 | 4,389 | 515 | 0 | 4,904 | 2,354,817 | 30% | 86% |
| 145 | 603 | 118 | 0 | 0 | 0 | 4,316 | 506 | 0 | 4,822 | 2,359,639 | 30% | 86% |
| 146 | 353 | 130 | 0 | 0 | 0 | 4,238 | 558 | 0 | 4,795 | 2,364,435 | 30% | 87% |
| 147 | 226 | 115 | 0 | 0 | 0 | 4,206 | 493 | 0 | 4,699 | 2,369,134 | 30% | 87% |
| 148 | 347 | 114 | 0 | 0 | 0 | 4,169 | 489 | 0 | 4,658 | 2,373,792 | 30% | 87% |
| 149 | 74 | 125 | 0 | 0 | 0 | 4,075 | 536 | 0 | 4,611 | 2,378,404 | 31% | 87% |
| 150 | 639 | 112 | 0 | 0 | 0 | 4,096 | 480 | 0 | 4,577 | 2,382,980 | 31% | 87% |
| 151 | 142 | 109 | 0 | 0 | 0 | 3,986 | 468 | 0 | 4,454 | 2,387,434 | 31% | 87% |
| 152 | 81 | 120 | 0 | 0 | 0 | 3,912 | 515 | 0 | 4,427 | 2,391,861 | 31% | 88% |
| 153 | 127 | 107 | 0 | 0 | 0 | 3,913 | 459 | 0 | 4,372 | 2,396,234 | 31% | 88% |
| 154 | 438 | 102 | 0 | 0 | 0 | 3,730 | 438 | 0 | 4,168 | 2,400,402 | 32% | 88% |
| 155 | 512 | 102 | 0 | 0 | 0 | 3,730 | 438 | 0 | 4,168 | 2,404,570 | 32% | 88% |
| 156 | 669 | 108 | 0 | 0 | 0 | 3,522 | 463 | 0 | 3,985 | 2,408,555 | 32% | 88% |
| 157 | 309 | 97 | 0 | 0 | 0 | 3,548 | 416 | 0 | 3,964 | 2,412,519 | 32% | 88% |
| 158 | 307 | 96 | 0 | 0 | 0 | 3,511 | 412 | 0 | 3,923 | 2,416,442 | 32% | 88% |
| 159 | 741 | 96 | 0 | 0 | 0 | 3,511 | 412 | 0 | 3,923 | 2,420,365 | 33% | 89% |
| 160 | 314 | 95 | 0 | 0 | 0 | 3,474 | 408 | 0 | 3,882 | 2,424,247 | 33% | 89% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 161 | 388 | 94 | 0 | 0 | 0 | 3,438 | 403 | 0 | 3,841 | 2,428,088 | 33% | 89% |
| 162 | 113 | 93 | 0 | 0 | 0 | 3,401 | 399 | 0 | 3,800 | 2,431,888 | 33% | 89% |
| 163 | 261 | 92 | 0 | 0 | 0 | 3,365 | 395 | 0 | 3,759 | 2,435,647 | 33% | 89% |
| 164 | 46 | 91 | 0 | 0 | 0 | 3,328 | 390 | 0 | 3,719 | 2,439,366 | 34% | 89% |
| 165 | 281 | 89 | 0 | 0 | 0 | 3,255 | 382 | 0 | 3,637 | 2,443,003 | 34% | 89% |
| 166 | 85 | 88 | 0 | 0 | 0 | 3,218 | 378 | 0 | 3,596 | 2,446,599 | 34% | 90% |
| 167 | 195 | 87 | 0 | 0 | 0 | 3,182 | 373 | 0 | 3,555 | 2,450,154 | 34% | 90% |
| 168 | 10 | 86 | 0 | 0 | 0 | 3,145 | 369 | 0 | 3,514 | 2,453,668 | 34% | 90% |
| 169 | 11 | 86 | 0 | 0 | 0 | 3,145 | 369 | 0 | 3,514 | 2,457,182 | 35% | 90% |
| 170 | 86 | 95 | 0 | 0 | 0 | 3,099 | 408 | 0 | 3,507 | 2,460,689 | 35% | 90% |
| 171 | 481 | 82 | 0 | 0 | 0 | 2,999 | 352 | 0 | 3,351 | 2,464,040 | 35% | 90% |
| 172 | 624 | 82 | 0 | 0 | 0 | 2,999 | 352 | 0 | 3,351 | 2,467,390 | 35% | 90% |
| 173 | 210 | 81 | 0 | 0 | 0 | 2,962 | 347 | 0 | 3,310 | 2,470,700 | 35% | 90% |
| 174 | 656 | 81 | 0 | 0 | 0 | 2,962 | 347 | 0 | 3,310 | 2,474,010 | 36% | 91% |
| 175 | 238 | 80 | 0 | 0 | 0 | 2,926 | 343 | 0 | 3,269 | 2,477,279 | 36% | 91% |
| 176 | 166 | 78 | 0 | 0 | 0 | 2,853 | 335 | 0 | 3,187 | 2,480,467 | 36% | 91% |
| 177 | 112 | 77 | 0 | 0 | 0 | 2,816 | 330 | 0 | 3,146 | 2,483,613 | 36% | 91% |
| 178 | 610 | 77 | 0 | 0 | 0 | 2,816 | 330 | 0 | 3,146 | 2,486,759 | 36% | 91% |
| 179 | 676 | 76 | 0 | 0 | 0 | 2,780 | 326 | 0 | 3,106 | 2,489,865 | 37% | 91% |
| 180 | 175 | 75 | 0 | 0 | 0 | 2,743 | 322 | 0 | 3,065 | 2,492,930 | 37% | 91% |
| 181 | 182 | 74 | 0 | 0 | 0 | 2,706 | 317 | 0 | 3,024 | 2,495,954 | 37% | 91% |
| 182 | 266 | 74 | 0 | 0 | 0 | 2,706 | 317 | 0 | 3,024 | 2,498,978 | 37% | 92% |
| 183 | 348 | 74 | 0 | 0 | 0 | 2,706 | 317 | 0 | 3,024 | 2,502,001 | 38% | 92% |
| 184 | 425 | 73 | 0 | 0 | 0 | 2,670 | 313 | 0 | 2,983 | 2,504,984 | 38% | 92% |
| 185 | 228 | 72 | 0 | 0 | 0 | 2,633 | 309 | 0 | 2,942 | 2,507,927 | 38% | 92% |
| 186 | 456 | 79 | 0 | 0 | 0 | 2,579 | 339 | 0 | 2,918 | 2,510,844 | 38% | 92% |
| 187 | 173 | 71 | 0 | 0 | 0 | 2,597 | 305 | 0 | 2,901 | 2,513,746 | 38% | 92% |
| 188 | 123 | 70 | 0 | 0 | 0 | 2,560 | 300 | 0 | 2,860 | 2,516,606 | 39% | 92% |
| 189 | 331 | 70 | 0 | 0 | 0 | 2,560 | 300 | 0 | 2,860 | 2,519,466 | 39% | 92% |
| 190 | 158 | 69 | 0 | 0 | 0 | 2,524 | 296 | 0 | 2,820 | 2,522,286 | 39% | 92% |
| 191 | 67 | 66 | 0 | 0 | 0 | 2,414 | 283 | 0 | 2,697 | 2,524,983 | 39% | 92% |
| 192 | 323 | 66 | 0 | 0 | 0 | 2,414 | 283 | 0 | 2,697 | 2,527,680 | 39% | 93% |
| 193 | 143 | 65 | 0 | 0 | 0 | 2,377 | 279 | 0 | 2,656 | 2,530,336 | 40% | 93% |
| 194 | 202 | 65 | 0 | 0 | 0 | 2,377 | 279 | 0 | 2,656 | 2,532,992 | 40% | 93% |
| 195 | 461 | 64 | 0 | 0 | 0 | 2,341 | 275 | 0 | 2,615 | 2,535,607 | 40% | 93% |
| 196 | 240 | 63 | 0 | 0 | 0 | 2,304 | 270 | 0 | 2,574 | 2,538,182 | 40% | 93% |
| 197 | 82 | 62 | 0 | 0 | 0 | 2,268 | 266 | 0 | 2,534 | 2,540,715 | 40% | 93% |
| 198 | 299 | 62 | 0 | 0 | 0 | 2,268 | 266 | 0 | 2,534 | 2,543,249 | 41% | 93% |
| 199 | 363 | 62 | 0 | 0 | 0 | 2,268 | 266 | 0 | 2,534 | 2,545,782 | 41% | 93% |
| 200 | 457 | 62 | 0 | 0 | 0 | 2,268 | 266 | 0 | 2,534 | 2,548,316 | 41% | 93% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 201 | **795** | 62 | 0 | 0 | 0 | 2,268 | 266 | 0 | 2,534 | 2,550,849 | 41% | 93% |
| 202 | **344** | 61 | 0 | 0 | 0 | 2,231 | 262 | 0 | 2,493 | 2,553,342 | 41% | 93% |
| 203 | **726** | 61 | 0 | 0 | 0 | 2,231 | 262 | 0 | 2,493 | 2,555,834 | 42% | 94% |
| 204 | **476** | 60 | 0 | 0 | 0 | 2,194 | 257 | 0 | 2,452 | 2,558,286 | 42% | 94% |
| 205 | **523** | 60 | 0 | 0 | 0 | 2,194 | 257 | 0 | 2,452 | 2,560,738 | 42% | 94% |
| 206 | **699** | 60 | 0 | 0 | 0 | 2,194 | 257 | 0 | 2,452 | 2,563,190 | 42% | 94% |
| 207 | **147** | 59 | 0 | 0 | 0 | 2,158 | 253 | 0 | 2,411 | 2,565,601 | 42% | 94% |
| 208 | **163** | 59 | 0 | 0 | 0 | 2,158 | 253 | 0 | 2,411 | 2,568,012 | 43% | 94% |
| 209 | **99** | 65 | 0 | 0 | 0 | 2,124 | 279 | 0 | 2,402 | 2,570,414 | 43% | 94% |
| 210 | **172** | 56 | 0 | 0 | 0 | 2,048 | 240 | 0 | 2,288 | 2,572,702 | 43% | 94% |
| 211 | **239** | 55 | 0 | 0 | 0 | 2,012 | 236 | 0 | 2,247 | 2,574,950 | 43% | 94% |
| 212 | **404** | 60 | 0 | 0 | 0 | 1,960 | 257 | 0 | 2,217 | 2,577,167 | 43% | 94% |
| 213 | **169** | 60 | 0 | 0 | 0 | 1,960 | 257 | 0 | 2,217 | 2,579,384 | 44% | 94% |
| 214 | **37** | 60 | 0 | 0 | 0 | 1,960 | 257 | 0 | 2,217 | 2,581,601 | 44% | 95% |
| 215 | **97** | 54 | 0 | 0 | 0 | 1,975 | 232 | 0 | 2,207 | 2,583,807 | 44% | 95% |
| 216 | **136** | 53 | 0 | 0 | 0 | 1,938 | 227 | 0 | 2,166 | 2,585,973 | 44% | 95% |
| 217 | **148** | 53 | 0 | 0 | 0 | 1,938 | 227 | 0 | 2,166 | 2,588,139 | 44% | 95% |
| 218 | **650** | 53 | 0 | 0 | 0 | 1,938 | 227 | 0 | 2,166 | 2,590,304 | 45% | 95% |
| 219 | **710** | 51 | 0 | 0 | 0 | 1,865 | 219 | 0 | 2,084 | 2,592,389 | 45% | 95% |
| 220 | **717** | 56 | 0 | 0 | 0 | 1,829 | 240 | 0 | 2,070 | 2,594,458 | 45% | 95% |
| 221 | **338** | 50 | 0 | 0 | 0 | 1,829 | 215 | 0 | 2,043 | 2,596,501 | 45% | 95% |
| 222 | **357** | 49 | 0 | 0 | 0 | 1,792 | 210 | 0 | 2,002 | 2,598,504 | 45% | 95% |
| 223 | **495** | 49 | 0 | 0 | 0 | 1,792 | 210 | 0 | 2,002 | 2,600,506 | 46% | 95% |
| 224 | **649** | 49 | 0 | 0 | 0 | 1,792 | 210 | 0 | 2,002 | 2,602,508 | 46% | 95% |
| 225 | **777** | 49 | 0 | 0 | 0 | 1,792 | 210 | 0 | 2,002 | 2,604,510 | 46% | 95% |
| 226 | **205** | 54 | 0 | 0 | 0 | 1,764 | 232 | 0 | 1,996 | 2,606,507 | 46% | 95% |
| 227 | **181** | 48 | 0 | 0 | 0 | 1,756 | 206 | 0 | 1,961 | 2,608,468 | 47% | 96% |
| 228 | **662** | 48 | 0 | 0 | 0 | 1,756 | 206 | 0 | 1,961 | 2,610,429 | 47% | 96% |
| 229 | **752** | 47 | 0 | 0 | 0 | 1,719 | 202 | 0 | 1,921 | 2,612,350 | 47% | 96% |
| 230 | **159** | 50 | 0 | 0 | 0 | 1,634 | 215 | 0 | 1,849 | 2,614,199 | 47% | 96% |
| 231 | **135** | 45 | 0 | 0 | 0 | 1,646 | 193 | 0 | 1,839 | 2,616,038 | 47% | 96% |
| 232 | **298** | 45 | 0 | 0 | 0 | 1,646 | 193 | 0 | 1,839 | 2,617,876 | 48% | 96% |
| 233 | **518** | 45 | 0 | 0 | 0 | 1,646 | 193 | 0 | 1,839 | 2,619,715 | 48% | 96% |
| 234 | **132** | 44 | 0 | 0 | 0 | 1,609 | 189 | 0 | 1,798 | 2,621,513 | 48% | 96% |
| 235 | **289** | 44 | 0 | 0 | 0 | 1,609 | 189 | 0 | 1,798 | 2,623,311 | 48% | 96% |
| 236 | **785** | 48 | 0 | 0 | 0 | 1,569 | 206 | 0 | 1,775 | 2,625,086 | 48% | 96% |
| 237 | **253** | 41 | 0 | 0 | 0 | 1,499 | 176 | 0 | 1,675 | 2,626,762 | 49% | 96% |
| 238 | **792** | 41 | 0 | 0 | 0 | 1,499 | 176 | 0 | 1,675 | 2,628,437 | 49% | 96% |
| 239 | **23** | 40 | 0 | 0 | 0 | 1,463 | 172 | 0 | 1,635 | 2,630,072 | 49% | 96% |
| 240 | **464** | 40 | 0 | 0 | 0 | 1,463 | 172 | 0 | 1,635 | 2,631,706 | 49% | 96% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 241 | **244** | 39 | 0 | 0 | 0 | 1,426 | 167 | 0 | 1,594 | 2,633,300 | 49% | 96% |
| 242 | **247** | 39 | 0 | 0 | 0 | 1,426 | 167 | 0 | 1,594 | 2,634,894 | 50% | 96% |
| 243 | **214** | 38 | 0 | 0 | 0 | 1,390 | 163 | 0 | 1,553 | 2,636,446 | 50% | 97% |
| 244 | **38** | 37 | 0 | 0 | 0 | 1,353 | 159 | 0 | 1,512 | 2,637,958 | 50% | 97% |
| 245 | **469** | 37 | 0 | 0 | 0 | 1,353 | 159 | 0 | 1,512 | 2,639,470 | 50% | 97% |
| 246 | **122** | 36 | 0 | 0 | 0 | 1,317 | 154 | 0 | 1,471 | 2,640,941 | 50% | 97% |
| 247 | **224** | 36 | 0 | 0 | 0 | 1,317 | 154 | 0 | 1,471 | 2,642,412 | 51% | 97% |
| 248 | **368** | 36 | 0 | 0 | 0 | 1,317 | 154 | 0 | 1,471 | 2,643,883 | 51% | 97% |
| 249 | **399** | 36 | 0 | 0 | 0 | 1,317 | 154 | 0 | 1,471 | 2,645,355 | 51% | 97% |
| 250 | **504** | 36 | 0 | 0 | 0 | 1,317 | 154 | 0 | 1,471 | 2,646,826 | 51% | 97% |
| 251 | **9** | 35 | 0 | 0 | 0 | 1,280 | 150 | 0 | 1,430 | 2,648,256 | 51% | 97% |
| 252 | **249** | 35 | 0 | 0 | 0 | 1,280 | 150 | 0 | 1,430 | 2,649,686 | 52% | 97% |
| 253 | **389** | 34 | 0 | 0 | 0 | 1,243 | 146 | 0 | 1,389 | 2,651,075 | 52% | 97% |
| 254 | **601** | 34 | 0 | 0 | 0 | 1,243 | 146 | 0 | 1,389 | 2,652,465 | 52% | 97% |
| 255 | **371** | 33 | 0 | 0 | 0 | 1,207 | 142 | 0 | 1,348 | 2,653,813 | 52% | 97% |
| 256 | **667** | 33 | 0 | 0 | 0 | 1,207 | 142 | 0 | 1,348 | 2,655,162 | 52% | 97% |
| 257 | **646** | 32 | 0 | 0 | 0 | 1,170 | 137 | 0 | 1,308 | 2,656,469 | 53% | 97% |
| 258 | **4** | 31.0 | 0 | 0 | 0 | 1,134 | 133 | 0 | 1,267 | 2,657,736 | 53% | 97% |
| 259 | **282** | 31 | 0 | 0 | 0 | 1,134 | 133 | 0 | 1,267 | 2,659,003 | 53% | 97% |
| 260 | **607** | 31 | 0 | 0 | 0 | 1,134 | 133 | 0 | 1,267 | 2,660,270 | 53% | 97% |
| 261 | **703** | 31.0 | 0 | 0 | 0 | 1,134 | 133 | 0 | 1,267 | 2,661,536 | 53% | 97% |
| 262 | **480** | 30 | 0 | 0 | 0 | 1,097 | 129 | 0 | 1,226 | 2,662,762 | 54% | 98% |
| 263 | **554** | 30 | 0 | 0 | 0 | 1,097 | 129 | 0 | 1,226 | 2,663,988 | 54% | 98% |
| 264 | **276** | 29 | 0 | 0 | 0 | 1,061 | 124 | 0 | 1,185 | 2,665,173 | 54% | 98% |
| 265 | **506** | 28 | 0 | 0 | 0 | 1,024 | 120 | 0 | 1,144 | 2,666,317 | 54% | 98% |
| 266 | **560** | 28 | 0 | 0 | 0 | 1,024 | 120 | 0 | 1,144 | 2,667,461 | 55% | 98% |
| 267 | **632** | 30 | 0 | 0 | 0 | 983 | 129 | 0 | 1,112 | 2,668,573 | 55% | 98% |
| 268 | **117** | 27 | 0 | 0 | 0 | 987 | 116 | 0 | 1,103 | 2,669,676 | 55% | 98% |
| 269 | **129** | 26 | 0 | 0 | 0 | 951 | 112 | 0 | 1,062 | 2,670,739 | 55% | 98% |
| 270 | **287** | 26 | 0 | 0 | 0 | 951 | 112 | 0 | 1,062 | 2,671,801 | 55% | 98% |
| 271 | **695** | 26 | 0 | 0 | 0 | 951 | 112 | 0 | 1,062 | 2,672,864 | 56% | 98% |
| 272 | **594** | 25 | 0 | 0 | 0 | 914 | 107 | 0 | 1,022 | 2,673,885 | 56% | 98% |
| 273 | **683** | 25 | 0 | 0 | 0 | 914 | 107 | 0 | 1,022 | 2,674,907 | 56% | 98% |
| 274 | **183** | 24 | 0 | 0 | 0 | 878 | 103 | 0 | 981 | 2,675,888 | 56% | 98% |
| 275 | **265** | 24 | 0 | 0 | 0 | 878 | 103 | 0 | 981 | 2,676,868 | 56% | 98% |
| 276 | **548** | 24 | 0 | 0 | 0 | 878 | 103 | 0 | 981 | 2,677,849 | 57% | 98% |
| 277 | **463** | 23 | 0 | 0 | 0 | 841 | 99 | 0 | 940 | 2,678,789 | 57% | 98% |
| 278 | **290** | 22 | 0 | 0 | 0 | 805 | 94 | 0 | 899 | 2,679,688 | 57% | 98% |
| 279 | **396** | 22 | 0 | 0 | 0 | 805 | 94 | 0 | 899 | 2,680,587 | 57% | 98% |
| 280 | **557** | 22 | 0 | 0 | 0 | 805 | 94 | 0 | 899 | 2,681,486 | 57% | 98% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 281 | **571** | 22 | 0 | 0 | 0 | 805 | 94 | 0 | 899 | 2,682,385 | 58% | 98% |
| 282 | **428** | 21 | 0 | 0 | 0 | 768 | 90 | 0 | 858 | 2,683,243 | 58% | 98% |
| 283 | **114** | 20 | 0 | 0 | 0 | 731 | 86 | 0 | 817 | 2,684,060 | 58% | 98% |
| 284 | **515** | 20 | 0 | 0 | 0 | 731 | 86 | 0 | 817 | 2,684,877 | 58% | 98% |
| 285 | **564** | 20 | 0 | 0 | 0 | 731 | 86 | 0 | 817 | 2,685,695 | 58% | 98% |
| 286 | **593** | 20 | 0 | 0 | 0 | 731 | 86 | 0 | 817 | 2,686,512 | 59% | 98% |
| 287 | **725** | 20 | 0 | 0 | 0 | 731 | 86 | 0 | 817 | 2,687,329 | 59% | 98% |
| 288 | **133** | 19 | 0 | 0 | 0 | 695 | 82 | 0 | 776 | 2,688,106 | 59% | 98% |
| 289 | **743** | 19 | 0 | 0 | 0 | 695 | 82 | 0 | 776 | 2,688,882 | 59% | 98% |
| 290 | **115** | 20 | 0 | 0 | 0 | 659 | 86 | 0 | 744 | 2,689,626 | 59% | 98% |
| 291 | **440** | 18 | 0 | 0 | 0 | 658 | 77 | 0 | 736 | 2,690,362 | 60% | 99% |
| 292 | **522** | 18 | 0 | 0 | 0 | 658 | 77 | 0 | 736 | 2,691,098 | 60% | 99% |
| 293 | **768** | 18 | 0 | 0 | 0 | 658 | 77 | 0 | 736 | 2,691,833 | 60% | 99% |
| 294 | **784** | 18 | 0 | 0 | 0 | 658 | 77 | 0 | 736 | 2,692,569 | 60% | 99% |
| 295 | **250** | 17 | 0 | 0 | 0 | 622 | 73 | 0 | 695 | 2,693,263 | 60% | 99% |
| 296 | **433** | 17 | 0 | 0 | 0 | 622 | 73 | 0 | 695 | 2,693,958 | 61% | 99% |
| 297 | **88** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 2,694,612 | 61% | 99% |
| 298 | **162** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 2,695,266 | 61% | 99% |
| 299 | **279** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 2,695,919 | 61% | 99% |
| 300 | **372** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 2,696,573 | 61% | 99% |
| 301 | **377** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 2,697,227 | 62% | 99% |
| 302 | **465** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 2,697,881 | 62% | 99% |
| 303 | **572** | 16 | 0 | 0 | 0 | 585 | 69 | 0 | 654 | 2,698,535 | 62% | 99% |
| 304 | **326** | 15 | 0 | 0 | 0 | 549 | 64 | 0 | 613 | 2,699,148 | 62% | 99% |
| 305 | **479** | 15 | 0 | 0 | 0 | 549 | 64 | 0 | 613 | 2,699,761 | 63% | 99% |
| 306 | **682** | 15 | 0 | 0 | 0 | 549 | 64 | 0 | 613 | 2,700,373 | 63% | 99% |
| 307 | **623** | 14 | 0 | 0 | 0 | 512 | 60 | 0 | 572 | 2,700,946 | 63% | 99% |
| 308 | **693** | 14 | 0 | 0 | 0 | 512 | 60 | 0 | 572 | 2,701,518 | 63% | 99% |
| 309 | **197** | 13 | 0 | 0 | 0 | 475 | 56 | 0 | 531 | 2,702,049 | 63% | 99% |
| 310 | **346** | 13 | 0 | 0 | 0 | 475 | 56 | 0 | 531 | 2,702,580 | 64% | 99% |
| 311 | **360** | 13 | 0 | 0 | 0 | 475 | 56 | 0 | 531 | 2,703,111 | 64% | 99% |
| 312 | **286** | 14 | 0 | 0 | 0 | 464 | 60 | 0 | 524 | 2,703,635 | 64% | 99% |
| 313 | **154** | 12 | 0 | 0 | 0 | 439 | 51 | 0 | 490 | 2,704,125 | 64% | 99% |
| 314 | **747** | 12 | 0 | 0 | 0 | 439 | 51 | 0 | 490 | 2,704,616 | 64% | 99% |
| 315 | **218** | 11 | 0 | 0 | 0 | 402 | 47 | 0 | 449 | 2,705,065 | 65% | 99% |
| 316 | **237** | 11 | 0 | 0 | 0 | 402 | 47 | 0 | 449 | 2,705,515 | 65% | 99% |
| 317 | **271** | 11 | 0 | 0 | 0 | 402 | 47 | 0 | 449 | 2,705,964 | 65% | 99% |
| 318 | **318** | 11 | 0 | 0 | 0 | 402 | 47 | 0 | 449 | 2,706,414 | 65% | 99% |
| 319 | **320** | 11 | 0 | 0 | 0 | 402 | 47 | 0 | 449 | 2,706,863 | 65% | 99% |
| 320 | **291** | 10 | 0 | 0 | 0 | 366 | 43 | 0 | 409 | 2,707,272 | 66% | 99% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 321 | 292 | 10 | 0 | 0 | 0 | 366 | 43 | 0 | 409 | 2,707,680 | 66% | 99% |
| 322 | 300 | 10 | 0 | 0 | 0 | 366 | 43 | 0 | 409 | 2,708,089 | 66% | 99% |
| 323 | 395 | 10 | 0 | 0 | 0 | 366 | 43 | 0 | 409 | 2,708,498 | 66% | 99% |
| 324 | 277 | 9 | 0 | 0 | 0 | 329 | 39 | 0 | 368 | 2,708,865 | 66% | 99% |
| 325 | 319 | 9 | 0 | 0 | 0 | 329 | 39 | 0 | 368 | 2,709,233 | 67% | 99% |
| 326 | 622 | 9 | 0 | 0 | 0 | 329 | 39 | 0 | 368 | 2,709,601 | 67% | 99% |
| 327 | 257 | 9 | 0 | 0 | 0 | 299 | 39 | 0 | 338 | 2,709,939 | 67% | 99% |
| 328 | 119 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,710,265 | 67% | 99% |
| 329 | 156 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,710,592 | 67% | 99% |
| 330 | 171 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,710,919 | 68% | 99% |
| 331 | 245 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,711,246 | 68% | 99% |
| 332 | 302 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,711,573 | 68% | 99% |
| 333 | 303 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,711,900 | 68% | 99% |
| 334 | 329 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,712,227 | 68% | 99% |
| 335 | 343 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,712,554 | 69% | 99% |
| 336 | 376 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,712,881 | 69% | 99% |
| 337 | 383 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,713,208 | 69% | 99% |
| 338 | 526 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,713,535 | 69% | 99% |
| 339 | 588 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,713,861 | 69% | 99% |
| 340 | 626 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,714,188 | 70% | 99% |
| 341 | 638 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,714,515 | 70% | 99% |
| 342 | 686 | 8 | 0 | 0 | 0 | 293 | 34 | 0 | 327 | 2,714,842 | 70% | 99% |
| 343 | 305 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 2,715,128 | 70% | 99% |
| 344 | 321 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 2,715,414 | 70% | 99% |
| 345 | 366 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 2,715,700 | 71% | 99% |
| 346 | 385 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 2,715,986 | 71% | 99% |
| 347 | 477 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 2,716,272 | 71% | 99% |
| 348 | 625 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 2,716,558 | 71% | 99% |
| 349 | 691 | 7 | 0 | 0 | 0 | 256 | 30 | 0 | 286 | 2,716,844 | 72% | 99% |
| 350 | 704 | 7 | 0 | 0 | 0 | 234 | 30 | 0 | 264 | 2,717,108 | 72% | 99% |
| 351 | 246 | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 2,717,354 | 72% | 99% |
| 352 | 334 | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 2,717,599 | 72% | 100% |
| 353 | 341 | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 2,717,844 | 72% | 100% |
| 354 | 387 | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 2,718,089 | 73% | 100% |
| 355 | 521 | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 2,718,334 | 73% | 100% |
| 356 | 608 | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 2,718,580 | 73% | 100% |
| 357 | 614 | 6 | 0 | 0 | 0 | 219 | 26 | 0 | 245 | 2,718,825 | 73% | 100% |
| 358 | 91 | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 2,719,029 | 73% | 100% |
| 359 | 141 | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 2,719,233 | 74% | 100% |
| 360 | 167 | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 2,719,438 | 74% | 100% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 361 | 232 | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 2,719,642 | 74% | 100% |
| 362 | 394 | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 2,719,846 | 74% | 100% |
| 363 | 450 | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 2,720,051 | 74% | 100% |
| 364 | 458 | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 2,720,255 | 75% | 100% |
| 365 | 510 | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 2,720,459 | 75% | 100% |
| 366 | 631 | 5 | 0 | 0 | 0 | 183 | 21 | 0 | 204 | 2,720,664 | 75% | 100% |
| 367 | 503 | 5 | 0 | 0 | 0 | 169 | 21 | 0 | 190 | 2,720,854 | 75% | 100% |
| 368 | 199 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,721,017 | 75% | 100% |
| 369 | 211 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,721,181 | 76% | 100% |
| 370 | 227 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,721,344 | 76% | 100% |
| 371 | 312 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,721,508 | 76% | 100% |
| 372 | 382 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,721,671 | 76% | 100% |
| 373 | 412 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,721,835 | 76% | 100% |
| 374 | 417 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,721,998 | 77% | 100% |
| 375 | 447 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,722,162 | 77% | 100% |
| 376 | 451 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,722,325 | 77% | 100% |
| 377 | 482 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,722,488 | 77% | 100% |
| 378 | 528 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,722,652 | 77% | 100% |
| 379 | 545 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,722,815 | 78% | 100% |
| 380 | 581 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,722,979 | 78% | 100% |
| 381 | 637 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,723,142 | 78% | 100% |
| 382 | 689 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,723,306 | 78% | 100% |
| 383 | 694 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,723,469 | 78% | 100% |
| 384 | 709 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,723,633 | 79% | 100% |
| 385 | 731 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,723,796 | 79% | 100% |
| 386 | 755 | 4 | 0 | 0 | 0 | 146 | 17 | 0 | 163 | 2,723,960 | 79% | 100% |
| 387 | 49 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,724,082 | 79% | 100% |
| 388 | 212 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,724,205 | 80% | 100% |
| 389 | 223 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,724,327 | 80% | 100% |
| 390 | 409 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,724,450 | 80% | 100% |
| 391 | 427 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,724,573 | 80% | 100% |
| 392 | 435 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,724,695 | 80% | 100% |
| 393 | 541 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,724,818 | 81% | 100% |
| 394 | 552 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,724,940 | 81% | 100% |
| 395 | 629 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,725,063 | 81% | 100% |
| 396 | 657 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,725,185 | 81% | 100% |
| 397 | 672 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,725,308 | 81% | 100% |
| 398 | 678 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,725,431 | 82% | 100% |
| 399 | 769 | 3 | 0 | 0 | 0 | 110 | 13 | 0 | 123 | 2,725,553 | 82% | 100% |
| 400 | 255 | 3 | 0 | 0 | 0 | 104 | 13 | 0 | 117 | 2,725,670 | 82% | 100% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 401 | **22** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,725,752 | 82% | 100% |
| 402 | **152** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,725,833 | 82% | 100% |
| 403 | **161** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,725,915 | 83% | 100% |
| 404 | **184** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,725,997 | 83% | 100% |
| 405 | **204** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,079 | 83% | 100% |
| 406 | **213** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,160 | 83% | 100% |
| 407 | **262** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,242 | 83% | 100% |
| 408 | **263** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,324 | 84% | 100% |
| 409 | **293** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,406 | 84% | 100% |
| 410 | **315** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,487 | 84% | 100% |
| 411 | **335** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,569 | 84% | 100% |
| 412 | **339** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,651 | 84% | 100% |
| 413 | **359** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,732 | 85% | 100% |
| 414 | **411** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,814 | 85% | 100% |
| 415 | **430** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,896 | 85% | 100% |
| 416 | **431** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,726,978 | 85% | 100% |
| 417 | **448** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,059 | 85% | 100% |
| 418 | **467** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,141 | 86% | 100% |
| 419 | **500** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,223 | 86% | 100% |
| 420 | **535** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,305 | 86% | 100% |
| 421 | **546** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,386 | 86% | 100% |
| 422 | **549** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,468 | 86% | 100% |
| 423 | **561** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,550 | 87% | 100% |
| 424 | **584** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,631 | 87% | 100% |
| 425 | **599** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,713 | 87% | 100% |
| 426 | **617** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,795 | 87% | 100% |
| 427 | **621** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,877 | 88% | 100% |
| 428 | **627** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,727,958 | 88% | 100% |
| 429 | **636** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,040 | 88% | 100% |
| 430 | **660** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,122 | 88% | 100% |
| 431 | **671** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,204 | 88% | 100% |
| 432 | **677** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,285 | 89% | 100% |
| 433 | **702** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,367 | 89% | 100% |
| 434 | **720** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,449 | 89% | 100% |
| 435 | **738** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,530 | 89% | 100% |
| 436 | **750** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,612 | 89% | 100% |
| 437 | **761** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,694 | 90% | 100% |
| 438 | **765** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,776 | 90% | 100% |
| 439 | **767** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,857 | 90% | 100% |
| 440 | **782** | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,728,939 | 90% | 100% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 441 | 791 | 2 | 0 | 0 | 0 | 73 | 9 | 0 | 82 | 2,729,021 | 90% | 100% |
| 442 | 419 | 2 | 0 | 0 | 0 | 71 | 9 | 0 | 80 | 2,729,101 | 91% | 100% |
| 443 | 619 | 2 | 0 | 0 | 0 | 71 | 9 | 0 | 80 | 2,729,181 | 91% | 100% |
| 444 | 13 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,222 | 91% | 100% |
| 445 | 55 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,262 | 91% | 100% |
| 446 | 71 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,303 | 91% | 100% |
| 447 | 116 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,344 | 92% | 100% |
| 448 | 180 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,385 | 92% | 100% |
| 449 | 188 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,426 | 92% | 100% |
| 450 | 231 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,467 | 92% | 100% |
| 451 | 251 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,508 | 92% | 100% |
| 452 | 252 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,549 | 93% | 100% |
| 453 | 254 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,589 | 93% | 100% |
| 454 | 269 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,630 | 93% | 100% |
| 455 | 295 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,671 | 93% | 100% |
| 456 | 386 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,712 | 93% | 100% |
| 457 | 446 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,753 | 94% | 100% |
| 458 | 460 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,794 | 94% | 100% |
| 459 | 491 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,835 | 94% | 100% |
| 460 | 496 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,875 | 94% | 100% |
| 461 | 498 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,916 | 94% | 100% |
| 462 | 556 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,957 | 95% | 100% |
| 463 | 568 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,729,998 | 95% | 100% |
| 464 | 587 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,039 | 95% | 100% |
| 465 | 595 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,080 | 95% | 100% |
| 466 | 598 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,121 | 95% | 100% |
| 467 | 613 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,161 | 96% | 100% |
| 468 | 640 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,202 | 96% | 100% |
| 469 | 642 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,243 | 96% | 100% |
| 470 | 645 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,284 | 96% | 100% |
| 471 | 658 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,325 | 97% | 100% |
| 472 | 661 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,366 | 97% | 100% |
| 473 | 680 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,407 | 97% | 100% |
| 474 | 712 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,447 | 97% | 100% |
| 475 | 714 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,488 | 97% | 100% |
| 476 | 718 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,529 | 98% | 100% |
| 477 | 722 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,570 | 98% | 100% |
| 478 | 724 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,611 | 98% | 100% |
| 479 | 732 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,652 | 98% | 100% |
| 480 | 733 | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,693 | 98% | 100% |

## GHG Emissions and Capture Rates for 488 SCAQMD Residential and Mixed Use Residential Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions[2] (MTCO2e/yr) | Commercial Indirect CO2 Emissions (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 481 | **744** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,734 | 99% | 100% |
| 482 | **746** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,774 | 99% | 100% |
| 483 | **759** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,815 | 99% | 100% |
| 484 | **775** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,856 | 99% | 100% |
| 485 | **781** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,897 | 99% | 100% |
| 486 | **787** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,938 | 100% | 100% |
| 487 | **790** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,730,979 | 100% | 100% |
| 488 | **793** | 1 | 0 | 0 | 0 | 37 | 4 | 0 | 41 | 2,731,020 | 100% | 100% |

1. Direct CO2 emissions calculated using URBEMIS model fo CO2 emissions only. Defaults were used except for the avg trip rates which were weighted for the week (19.54 for residential). Total direct CO2 emissions includes construction, area and operational emissions (construction emissions amortized over 30 years).

Ratio for direct residential CO2 based on project #553: 10,972 MT/yr/300 units = 36.573 (determined by URBEMIS)

2. Annual Electricity Usage based on annual electricity and water-related energy use (8.58 MW/unit) in Southern California from the California Energy Consumption Data Management System (http://ecdms.energy.ca.gov/elecbycounty.asp#results). Annual Statewide Energy Intensity (1,100 lbs/MWh) from the "Reporting and Verification of GHG Emissions in Electricity Sector" (California Public Utilities Commmission and California Energy Commission Joint Decision, September 2007)

## GHG Emissions and Capture Rates for 297 SCAQMD Commercial and Mixed Use Commercial Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions (MTCO2e/yr) | Commercial Indirect CO2 Emissions[2] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 0 | 1,490,000 | 1,495,000 | 2,985,000 | 34,447 | 0 | 22,671 | 57,118 | 57,118 | 0% | 7% |
| 2 | 31 | 0 | 0 | 2,250,946 | 2,250,946 | 21,438 | 0 | 17,096 | 38,534 | 95,652 | 1% | 12% |
| 3 | 144 | 0 | 0 | 1,600,000 | 1,600,000 | 18,464 | 0 | 12,152 | 30,616 | 126,268 | 1% | 16% |
| 4 | 285 | 0 | 1,400,000 | 46,000 | 1,446,000 | 13,770 | 0 | 10,982 | 24,752 | 151,021 | 1% | 19% |
| 5 | 100 | 0 | 0 | 1,200,000 | 1,200,000 | 11,425 | 0 | 9,114 | 20,539 | 171,560 | 2% | 21% |
| 6 | 311 | 0 | 15,500 | 785,000 | 800,500 | 9,238 | 0 | 6,080 | 15,318 | 186,878 | 2% | 23% |
| 7 | 106 | 0 | 590,000 | 229,300 | 819,300 | 7,801 | 0 | 6,223 | 14,023 | 200,901 | 2% | 25% |
| 8 | 16 | 0 | 0 | 778,500 | 778,500 | 7,412 | 0 | 5,913 | 13,325 | 214,226 | 3% | 26% |
| 9 | 408 | 0 | 0 | 627,200 | 627,200 | 7,238 | 0 | 4,764 | 12,001 | 226,228 | 3% | 28% |
| 10 | 443 | 0 | 75,000 | 620,000 | 695,000 | 6,617 | 0 | 5,279 | 11,896 | 238,124 | 3% | 29% |
| 11 | 28 | 0 | 0 | 616,000 | 616,000 | 7,109 | 0 | 4,679 | 11,787 | 249,911 | 4% | 31% |
| 12 | 61 | 0 | 0 | 613,000 | 613,000 | 7,074 | 0 | 4,656 | 11,730 | 261,640 | 4% | 32% |
| 13 | 219 | 0 | 0 | 600,000 | 600,000 | 6,924 | 0 | 4,557 | 11,481 | 273,121 | 4% | 34% |
| 14 | 207 | 0 | 0 | 526,800 | 526,800 | 6,079 | 0 | 4,001 | 10,080 | 283,202 | 5% | 35% |
| 15 | 35 | 0 | 0 | 520,000 | 520,000 | 6,001 | 0 | 3,949 | 9,950 | 293,152 | 5% | 36% |
| 16 | 248 | 0 | 0 | 491,860 | 491,860 | 5,676 | 0 | 3,736 | 9,412 | 302,564 | 5% | 37% |
| 17 | 95 | 0 | 0 | 484,265 | 484,265 | 5,588 | 0 | 3,678 | 9,266 | 311,830 | 6% | 38% |
| 18 | 397 | 0 | 0 | 47,5757 | 475,757 | 5,490 | 0 | 3,613 | 9,104 | 320,934 | 6% | 40% |
| 19 | 297 | 0 | 0 | 450,000 | 450,000 | 5,193 | 0 | 3,418 | 8,611 | 329,544 | 6% | 41% |
| 20 | 43 | 0 | 0 | 441,709 | 441,709 | 5,097 | 0 | 3,355 | 8,452 | 337,997 | 7% | 42% |
| 21 | 583 | 0 | 0 | 438,438 | 438,438 | 5,060 | 0 | 3,330 | 8,390 | 346,386 | 7% | 43% |
| 22 | 272 | 0 | 361,000 | 74,000 | 435,000 | 5,020 | 0 | 3,304 | 8,324 | 354,710 | 7% | 44% |
| 23 | 99 | 0 | 82,000 | 400,000 | 482,000 | 4,590 | 0 | 3,661 | 8,251 | 362,960 | 8% | 45% |
| 24 | 578 | 0 | 427,000 | 0 | 427,000 | 4,928 | 0 | 3,243 | 8,171 | 371,131 | 8% | 46% |
| 25 | 6 | 0 | 0 | 477,142 | 477,142 | 4,543 | 0 | 3,624 | 8,167 | 379,298 | 8% | 47% |
| 26 | 62 | 0 | 0 | 426,038 | 426,038 | 4,916 | 0 | 3,236 | 8,152 | 387,450 | 9% | 48% |
| 27 | 59 | 0 | 0 | 452,400 | 452,400 | 4,308 | 0 | 3,436 | 7,744 | 395,194 | 9% | 49% |
| 28 | 56 | 0 | 106,276 | 344,328 | 450,604 | 4,295 | 0 | 3,422 | 7,718 | 402,912 | 9% | 50% |
| 29 | 78 | 0 | 0 | 393,400 | 393,400 | 4,540 | 0 | 2,988 | 7,528 | 410,439 | 10% | 51% |
| 30 | 514 | 0 | 90,000 | 300,000 | 390,000 | 4,501 | 0 | 2,962 | 7,463 | 417,902 | 10% | 51% |
| 31 | 235 | 0 | 375,270 | 0 | 375,270 | 4,331 | 0 | 2,850 | 7,181 | 425,083 | 10% | 52% |
| 32 | 51 | 0 | 0 | 374,513 | 374,513 | 4,322 | 0 | 2,844 | 7,166 | 432,249 | 11% | 53% |
| 33 | 580 | 0 | 0 | 414,000 | 414,000 | 3,942 | 0 | 3,144 | 7,086 | 439,335 | 11% | 54% |
| 34 | 675 | 0 | 0 | 400,000 | 400,000 | 3,809 | 0 | 3,038 | 6,847 | 446,182 | 11% | 55% |
| 35 | 586 | 0 | 0 | 356,000 | 356,000 | 4,108 | 0 | 2,704 | 6,812 | 452,994 | 12% | 56% |
| 36 | 96 | 0 | 350,000 | 0 | 350,000 | 4,039 | 0 | 2,658 | 6,697 | 459,692 | 12% | 57% |
| 37 | 236 | 0 | 342,409 | 0 | 342,409 | 3,951 | 0 | 2,601 | 6,552 | 466,244 | 12% | 57% |
| 38 | 494 | 0 | 0 | 336,233 | 336,233 | 3,880 | 0 | 2,554 | 6,434 | 472,677 | 13% | 58% |
| 39 | 349 | 0 | 0 | 331,974 | 331,974 | 3,831 | 0 | 2,521 | 6,352 | 479,030 | 13% | 59% |
| 40 | 525 | 0 | 0 | 330,255 | 330,255 | 3,811 | 0 | 2,508 | 6,319 | 485,349 | 13% | 60% |

## GHG Emissions and Capture Rates for 297 SCAQMD Commercial and Mixed Use Commercial Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions (MTCO2e/yr) | Commercial Indirect CO2 Emissions[2] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 102 | 0 | 138,000 | 221,982 | 359,982 | 3,430 | 0 | 2,734 | 6,164 | 491,513 | 14% | 61% |
| 42 | 63 | 0 | 0 | 358,881 | 358,881 | 3,417 | 0 | 2,726 | 6,143 | 497,656 | 14% | 61% |
| 43 | 176 | 0 | 0 | 318,000 | 318,000 | 3,670 | 0 | 2,415 | 6,085 | 503,741 | 14% | 62% |
| 44 | 735 | 0 | 0 | 314,288 | 314,288 | 3,627 | 0 | 2,387 | 6,014 | 509,755 | 15% | 63% |
| 45 | 666 | 0 | 0 | 303,000 | 303,000 | 3,497 | 0 | 2,301 | 5,798 | 515,553 | 15% | 63% |
| 46 | 729 | 0 | 300,000 | 0 | 300,000 | 3,462 | 0 | 2,279 | 5,741 | 521,294 | 15% | 64% |
| 47 | 454 | 0 | 0 | 291,886 | 291,886 | 3,368 | 0 | 2,217 | 5,585 | 526,879 | 16% | 65% |
| 48 | 404 | 0 | 0 | 320,000 | 320,000 | 3,049 | 0 | 2,430 | 5,479 | 532,358 | 16% | 66% |
| 49 | 18 | 0 | 0 | 283,925 | 283,925 | 3,276 | 0 | 2,156 | 5,433 | 537,791 | 16% | 66% |
| 50 | 330 | 0 | 0 | 280,000 | 280,000 | 3,231 | 0 | 2,127 | 5,358 | 543,149 | 17% | 67% |
| 51 | 423 | 0 | 50,000 | 210,000 | 260,000 | 3,000 | 0 | 1,975 | 4,975 | 548,124 | 17% | 68% |
| 52 | 641 | 0 | 0 | 246,217 | 246,217 | 2,841 | 0 | 1,870 | 4,711 | 552,835 | 18% | 68% |
| 53 | 90 | 0 | 0 | 245,600 | 245,600 | 2,834 | 0 | 1,865 | 4,700 | 557,535 | 18% | 69% |
| 54 | 174 | 0 | 237,568 | 4,000 | 241,568 | 2,788 | 0 | 1,835 | 4,622 | 562,157 | 18% | 69% |
| 55 | 358 | 0 | 0 | 240,966 | 240,966 | 2,781 | 0 | 1,830 | 4,611 | 566,768 | 19% | 70% |
| 56 | 317 | 0 | 0 | 236,109 | 236,109 | 2,725 | 0 | 1,793 | 4,518 | 571,286 | 19% | 70% |
| 57 | 19 | 0 | 0 | 233,000 | 233,000 | 2,689 | 0 | 1,770 | 4,458 | 575,744 | 19% | 71% |
| 58 | 585 | 0 | 227,196.1 | 0 | 227,196 | 2,622 | 0 | 1,726 | 4,347 | 580,092 | 20% | 71% |
| 59 | 374 | 0 | 0 | 216,410 | 216,410 | 2,497 | 0 | 1,644 | 4,141 | 584,233 | 20% | 72% |
| 60 | 186 | 0 | 0 | 240,000 | 240,000 | 2,285 | 0 | 1,823 | 4,108 | 588,341 | 20% | 72% |
| 61 | 75 | 0 | 177,225 | 30,000 | 207,225 | 2,391 | 0 | 1,574 | 3,965 | 592,306 | 21% | 73% |
| 62 | 342 | 0 | 0 | 206,000 | 206,000 | 2,377 | 0 | 1,565 | 3,942 | 596,248 | 21% | 73% |
| 63 | 400 | 0 | 0 | 200,000 | 200,000 | 2,308 | 0 | 1,519 | 3,827 | 600,075 | 21% | 74% |
| 64 | 160 | 0 | 200,000 | 0 | 200,000 | 2,308 | 0 | 1,519 | 3,827 | 603,902 | 22% | 74% |
| 65 | 94 | 0 | 0 | 190,803 | 190,803 | 2,202 | 0 | 1,449 | 3,651 | 607,553 | 22% | 75% |
| 66 | 635 | 0 | 0 | 190,000 | 190,000 | 2,193 | 0 | 1,443 | 3,636 | 611,189 | 22% | 75% |
| 67 | 633 | 0 | 0 | 180,000 | 180,000 | 2,077 | 0 | 1,367 | 3,444 | 614,633 | 23% | 76% |
| 68 | 468 | 0 | 177,742 | 0 | 177,742 | 2,051 | 0 | 1,350 | 3,401 | 618,034 | 23% | 76% |
| 69 | 716 | 0 | 175,000 | 0 | 175,000 | 2,020 | 0 | 1,329 | 3,349 | 621,383 | 23% | 77% |
| 70 | 570 | 0 | 173,774 | 0 | 173,774 | 2,005 | 0 | 1,320 | 3,325 | 624,708 | 24% | 77% |
| 71 | 81 | 0 | 0 | 193,637 | 193,637 | 1,844 | 0 | 1,471 | 3,315 | 628,023 | 24% | 77% |
| 72 | 69 | 0 | 0 | 173,157 | 173,157 | 1,998 | 0 | 1,315 | 3,313 | 631,336 | 24% | 78% |
| 73 | 164 | 0 | 0 | 171,000 | 171,000 | 1,973 | 0 | 1,299 | 3,272 | 634,608 | 25% | 78% |
| 74 | 507 | 0 | 0 | 168,000 | 168,000 | 1,939 | 0 | 1,276 | 3,215 | 637,823 | 25% | 79% |
| 75 | 192 | 0 | 0 | 166,016 | 166,016 | 1,916 | 0 | 1,261 | 3,177 | 641,000 | 25% | 79% |
| 76 | 444 | 0 | 0 | 162,620 | 162,620 | 1,877 | 0 | 1,235 | 3,112 | 644,111 | 26% | 79% |
| 77 | 559 | 0 | 160,000 | 0 | 160,000 | 1,846 | 0 | 1,215 | 3,062 | 647,173 | 26% | 80% |
| 78 | 304 | 0 | 145,564 | 14,407 | 159,971 | 1,846 | 0 | 1,215 | 3,061 | 650,234 | 26% | 80% |
| 79 | 455 | 0 | 0 | 158,930 | 158,930 | 1,834 | 0 | 1,207 | 3,041 | 653,275 | 27% | 80% |
| 80 | 126 | 0 | 150,000 | 7,200 | 157,200 | 1,814 | 0 | 1,194 | 3,008 | 656,283 | 27% | 81% |

## GHG Emissions and Capture Rates for 297 SCAQMD Commercial and Mixed Use Commercial Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions (MTCO2e/yr) | Commercial Indirect CO2 Emissions[2] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 81 | 29 | 0 | 140,000 | 0 | 140,000 | 1,616 | 0 | 1,063 | 2,679 | 658,962 | 27% | 81% |
| 82 | 670 | 0 | 0 | 153,071 | 153,071 | 1,461 | 0 | 1,163 | 2,624 | 661,586 | 28% | 81% |
| 83 | 241 | 0 | 0 | 134,563 | 134,563 | 1,553 | 0 | 1,022 | 2,575 | 664,161 | 28% | 82% |
| 84 | 101 | 0 | 100,000 | 50,000 | 150,000 | 1,429 | 0 | 1,139 | 2,568 | 666,728 | 28% | 82% |
| 85 | 138 | 0 | 0 | 139,600 | 139,600 | 1,330 | 0 | 1,060 | 2,390 | 669,118 | 29% | 82% |
| 86 | 155 | 0 | 123,000 | 0 | 123,000 | 1,419 | 0 | 934 | 2,354 | 671,472 | 29% | 83% |
| 87 | 362 | 0 | 100,700 | 18,700 | 119,400 | 1,378 | 0 | 907 | 2,285 | 673,757 | 29% | 83% |
| 88 | 760 | 0 | 0 | 116,756 | 116,756 | 1,347 | 0 | 887 | 2,234 | 675,991 | 30% | 83% |
| 89 | 267 | 0 | 0 | 115,632 | 115,632 | 1,334 | 0 | 878 | 2,213 | 678,203 | 30% | 84% |
| 90 | 419 | 0 | 1,500 | 126,705 | 128,205 | 1,223 | 0 | 974 | 2,197 | 680,400 | 30% | 84% |
| 91 | 296 | 0 | 0 | 114,765 | 114,765 | 1,324 | 0 | 872 | 2,196 | 682,596 | 31% | 84% |
| 92 | 558 | 0 | 0 | 111,000 | 111,000 | 1,281 | 0 | 843 | 2,124 | 684,720 | 31% | 84% |
| 93 | 789 | 0 | 0 | 110,138 | 110,138 | 1,271 | 0 | 836 | 2,107 | 686,828 | 31% | 85% |
| 94 | 190 | 0 | 106,500 | 0 | 106,500 | 1,229 | 0 | 809 | 2,038 | 688,865 | 32% | 85% |
| 95 | 794 | 0 | 0 | 105,385 | 105,385 | 1,216 | 0 | 800 | 2,017 | 690,882 | 32% | 85% |
| 96 | 8 | 0 | 0 | 113,573 | 113,573 | 1,082 | 0 | 863 | 1,944 | 692,826 | 32% | 85% |
| 97 | 473 | 0 | 100,000 | 0 | 100,000 | 1,154 | 0 | 760 | 1,914 | 694,740 | 33% | 86% |
| 98 | 701 | 0 | 0 | 98,587 | 98,587 | 1,138 | 0 | 749 | 1,886 | 696,626 | 33% | 86% |
| 99 | 58 | 0 | 97,895 | 0 | 97,895 | 1,130 | 0 | 744 | 1,873 | 698,500 | 33% | 86% |
| 100 | 380 | 0 | 0 | 93,425 | 93,425 | 1,078 | 0 | 710 | 1,788 | 700,287 | 34% | 86% |
| 101 | 696 | 0 | 0 | 90,978 | 90,978 | 1,050 | 0 | 691 | 1,741 | 702,028 | 34% | 86% |
| 102 | 590 | 0 | 0 | 90,900 | 90,900 | 1,049 | 0 | 690 | 1,739 | 703,767 | 34% | 87% |
| 103 | 728 | 0 | 0 | 90,000 | 90,000 | 1,039 | 0 | 684 | 1,722 | 705,490 | 35% | 87% |
| 104 | 41 | 0 | 0 | 89,900 | 89,900 | 1,037 | 0 | 683 | 1,720 | 707,210 | 35% | 87% |
| 105 | 45 | 0 | 0 | 100,000 | 100,000 | 955 | 0 | 760 | 1,714 | 708,924 | 35% | 87% |
| 106 | 104 | 0 | 73,500 | 14,800 | 88,300 | 1,019 | 0 | 671 | 1,690 | 710,614 | 36% | 88% |
| 107 | 484 | 0 | 0 | 87,635 | 87,635 | 1,011 | 0 | 666 | 1,677 | 712,291 | 36% | 88% |
| 108 | 36 | 0 | 0 | 86,386 | 86,386 | 997 | 0 | 656 | 1,653 | 713,944 | 36% | 88% |
| 109 | 612 | 0 | 0 | 85,496 | 85,496 | 987 | 0 | 649 | 1,636 | 715,580 | 37% | 88% |
| 110 | 168 | 0 | 84,615 | 0 | 84,615 | 976 | 0 | 643 | 1,619 | 717,199 | 37% | 88% |
| 111 | 92 | 0 | 84,000 | 0 | 84,000 | 969 | 0 | 638 | 1,607 | 718,806 | 37% | 89% |
| 112 | 475 | 0 | 84,000 | 0 | 84,000 | 969 | 0 | 638 | 1,607 | 720,414 | 38% | 89% |
| 113 | 365 | 0 | 0 | 83,245 | 83,245 | 961 | 0 | 632 | 1,593 | 722,006 | 38% | 89% |
| 114 | 193 | 0 | 0 | 83,217 | 83,217 | 960 | 0 | 632 | 1,592 | 723,599 | 38% | 89% |
| 115 | 509 | 0 | 0 | 80,000 | 80,000 | 923 | 0 | 608 | 1,531 | 725,130 | 39% | 89% |
| 116 | 449 | 0 | 0 | 77,952 | 77,952 | 900 | 0 | 592 | 1,492 | 726,621 | 39% | 89% |
| 117 | 170 | 0 | 0 | 77,400 | 77,400 | 893 | 0 | 588 | 1,481 | 728,102 | 39% | 90% |
| 118 | 664 | 0 | 0 | 76,394 | 76,394 | 882 | 0 | 580 | 1,462 | 729,564 | 40% | 90% |
| 119 | 264 | 0 | 0 | 84,000 | 84,000 | 800 | 0 | 638 | 1,438 | 731,002 | 40% | 90% |
| 120 | 337 | 0 | 0 | 74,208 | 74,208 | 856 | 0 | 564 | 1,420 | 732,422 | 40% | 90% |

## GHG Emissions and Capture Rates for 297 SCAQMD Commercial and Mixed Use Commercial Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions (MTCO2e/yr) | Commercial Indirect CO2 Emissions[2] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 121 | 118 | 0 | 0 | 72,618 | 72,618 | 838 | 0 | 552 | 1,390 | 733,812 | 41% | 90% |
| 122 | 426 | 0 | 0 | 70,559 | 70,559 | 814 | 0 | 536 | 1,350 | 735,162 | 41% | 91% |
| 123 | 333 | 0 | 0 | 70,100 | 70,100 | 809 | 0 | 532 | 1,341 | 736,503 | 41% | 91% |
| 124 | 579 | 0 | 0 | 70,000 | 70,000 | 808 | 0 | 532 | 1,339 | 737,843 | 42% | 91% |
| 125 | 547 | 0 | 0 | 69,922 | 69,922 | 807 | 0 | 531 | 1,338 | 739,181 | 42% | 91% |
| 126 | 159 | 0 | 0 | 77,427 | 77,427 | 739 | 0 | 588 | 1,327 | 740,508 | 42% | 91% |
| 127 | 93 | 0 | 0 | 76,000 | 76,000 | 724 | 0 | 577 | 1,301 | 741,809 | 43% | 91% |
| 128 | 721 | 0 | 68,000 | 0 | 68,000 | 785 | 0 | 516 | 1,301 | 743,110 | 43% | 92% |
| 129 | 516 | 0 | 67,813 | 0 | 67,813 | 783 | 0 | 515 | 1,298 | 744,408 | 43% | 92% |
| 130 | 418 | 0 | 0 | 66,780 | 66,780 | 771 | 0 | 507 | 1,278 | 745,686 | 44% | 92% |
| 131 | 109 | 0 | 44,000 | 30,000 | 74,000 | 705 | 0 | 562 | 1,267 | 746,953 | 44% | 92% |
| 132 | 669 | 0 | 62,096 | 11,200 | 73,296 | 698 | 0 | 557 | 1,255 | 748,208 | 44% | 92% |
| 133 | 187 | 0 | 0 | 72,869 | 72,869 | 694 | 0 | 553 | 1,248 | 749,455 | 45% | 92% |
| 134 | 185 | 0 | 65,000 | 0 | 65,000 | 750 | 0 | 494 | 1,244 | 750,699 | 45% | 92% |
| 135 | 356 | 0 | 64,973 | 0 | 64,973 | 750 | 0 | 493 | 1,243 | 751,943 | 45% | 93% |
| 136 | 788 | 0 | 64,734 | 0 | 64,734 | 747 | 0 | 492 | 1,239 | 753,181 | 46% | 93% |
| 137 | 20 | 0 | 0 | 70,259 | 70,259 | 669 | 0 | 534 | 1,203 | 754,384 | 46% | 93% |
| 138 | 766 | 0 | 0 | 62,000 | 62,000 | 715 | 0 | 471 | 1,186 | 755,571 | 46% | 93% |
| 139 | 705 | 0 | 0 | 61,104 | 61,104 | 705 | 0 | 464 | 1,169 | 756,740 | 47% | 93% |
| 140 | 26 | 0 | 61,000 | 0 | 61,000 | 704 | 0 | 463 | 1,167 | 757,907 | 47% | 93% |
| 141 | 369 | 0 | 0 | 63,748 | 63,748 | 607 | 0 | 484 | 1,092 | 758,999 | 47% | 93% |
| 142 | 536 | 0 | 0 | 54,000 | 54,000 | 623 | 0 | 410 | 1,033 | 760,032 | 48% | 94% |
| 143 | 538 | 0 | 0 | 53,629 | 53,629 | 619 | 0 | 407 | 1,026 | 761,058 | 48% | 94% |
| 144 | 128 | 0 | 50,814 | 0 | 50,814 | 586 | 0 | 386 | 972 | 762,030 | 48% | 94% |
| 145 | 434 | 0 | 0 | 50,340 | 50,340 | 581 | 0 | 382 | 963 | 762,994 | 49% | 94% |
| 146 | 713 | 0 | 0 | 50,000 | 50,000 | 577 | 0 | 380 | 957 | 763,950 | 49% | 94% |
| 147 | 401 | 0 | 40,654 | 15,101 | 55,755 | 531 | 0 | 423 | 955 | 764,905 | 49% | 94% |
| 148 | 798 | 0 | 35,323 | 13,089 | 48,412 | 559 | 0 | 368 | 926 | 765,832 | 50% | 94% |
| 149 | 103 | 0 | 40,000 | 13,500 | 53,500 | 510 | 0 | 406 | 916 | 766,748 | 50% | 94% |
| 150 | 258 | 0 | 46,750 | 0 | 46,750 | 539 | 0 | 355 | 895 | 767,642 | 51% | 95% |
| 151 | 573 | 0 | 0 | 52,000 | 52,000 | 496 | 0 | 395 | 890 | 768,533 | 51% | 95% |
| 152 | 616 | 0 | 0 | 45,000 | 45,000 | 519 | 0 | 342 | 861 | 769,394 | 51% | 95% |
| 153 | 543 | 0 | 0 | 50,000 | 50,000 | 476 | 0 | 380 | 856 | 770,250 | 52% | 95% |
| 154 | 665 | 0 | 0 | 43,494 | 43,494 | 502 | 0 | 330 | 832 | 771,082 | 52% | 95% |
| 155 | 373 | 0 | 43,168 | 0 | 43,168 | 498 | 0 | 328 | 826 | 771,908 | 52% | 95% |
| 156 | 596 | 0 | 0 | 43,050 | 43,050 | 497 | 0 | 327 | 824 | 772,732 | 53% | 95% |
| 157 | 301 | 0 | 42,000 | 0 | 42,000 | 485 | 0 | 319 | 804 | 773,536 | 53% | 95% |
| 158 | 508 | 0 | 0 | 41,283 | 41,283 | 476 | 0 | 314 | 790 | 774,326 | 53% | 95% |
| 159 | 398 | 0 | 0 | 46,000 | 46,000 | 438 | 0 | 349 | 788 | 775,114 | 54% | 95% |
| 160 | 260 | 0 | 19,933 | 21,130 | 41,063 | 474 | 0 | 312 | 786 | 775,899 | 54% | 96% |

## GHG Emissions and Capture Rates for 297 SCAQMD Commercial and Mixed Use Commercial Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions (MTCO2e/yr) | Commercial Indirect CO2 Emissions[2] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 161 | 206 | 0 | 0 | 45,000 | 45,000 | 429 | 0 | 342 | 771 | 776,670 | 54% | 96% |
| 162 | 316 | 0 | 0 | 45,000 | 45,000 | 429 | 0 | 342 | 771 | 777,441 | 55% | 96% |
| 163 | 764 | 0 | 0 | 38,506 | 38,506 | 444 | 0 | 292 | 737 | 778,177 | 55% | 96% |
| 164 | 169 | 0 | 6,543 | 35,948 | 42,491 | 406 | 0 | 323 | 729 | 778,907 | 55% | 96% |
| 165 | 379 | 0 | 0 | 42,000 | 42,000 | 400 | 0 | 319 | 719 | 779,626 | 56% | 96% |
| 166 | 424 | 0 | 36,224 | 0 | 36,224 | 418 | 0 | 275 | 693 | 780,319 | 56% | 96% |
| 167 | 209 | 0 | 35,874 | 0 | 35,874 | 414 | 0 | 272 | 686 | 781,006 | 56% | 96% |
| 168 | 243 | 0 | 0 | 35,600 | 35,600 | 411 | 0 | 270 | 681 | 781,687 | 57% | 96% |
| 169 | 555 | 0 | 0 | 38,768 | 38,768 | 370 | 0 | 294 | 664 | 782,351 | 57% | 96% |
| 170 | 375 | 0 | 0 | 34,500 | 34,500 | 398 | 0 | 262 | 660 | 783,011 | 57% | 96% |
| 171 | 783 | 0 | 0 | 34,194 | 34,194 | 395 | 0 | 260 | 654 | 783,665 | 58% | 97% |
| 172 | 758 | 0 | 0 | 33,375 | 33,375 | 385 | 0 | 253 | 639 | 784,304 | 58% | 97% |
| 173 | 529 | 0 | 0 | 31,780 | 31,780 | 367 | 0 | 241 | 608 | 784,912 | 58% | 97% |
| 174 | 605 | 0 | 0 | 35,000 | 35,000 | 334 | 0 | 266 | 600 | 785,512 | 59% | 97% |
| 175 | 256 | 0 | 0 | 30,331 | 30,331 | 350 | 0 | 230 | 580 | 786,092 | 59% | 97% |
| 176 | 354 | 0 | 0 | 30,000 | 30,000 | 346 | 0 | 228 | 574 | 786,666 | 59% | 97% |
| 177 | 582 | 0 | 29,660 | 0 | 29,660 | 342 | 0 | 225 | 568 | 787,234 | 60% | 97% |
| 178 | 474 | 0 | 29,642 | 0 | 29,642 | 342 | 0 | 225 | 567 | 787,801 | 60% | 97% |
| 179 | 200 | 0 | 0 | 32,000 | 32,000 | 305 | 0 | 243 | 548 | 788,349 | 60% | 97% |
| 180 | 115 | 0 | 0 | 31,790 | 31,790 | 303 | 0 | 241 | 545 | 788,894 | 61% | 97% |
| 181 | 278 | 0 | 0 | 27,248 | 27,248 | 314 | 0 | 207 | 521 | 789,415 | 61% | 97% |
| 182 | 179 | 0 | 0 | 30,000 | 30,000 | 286 | 0 | 228 | 514 | 789,929 | 61% | 97% |
| 183 | 220 | 0 | 0 | 26,576 | 26,576 | 307 | 0 | 202 | 509 | 790,437 | 62% | 97% |
| 184 | 630 | 0 | 0 | 29,400 | 29,400 | 280 | 0 | 223 | 504 | 790,941 | 62% | 97% |
| 185 | 275 | 0 | 0 | 26,000 | 26,000 | 300 | 0 | 197 | 498 | 791,439 | 62% | 97% |
| 186 | 620 | 0 | 0 | 26,000 | 26,000 | 300 | 0 | 197 | 498 | 791,936 | 63% | 98% |
| 187 | 107 | 0 | 0 | 25,298 | 25,298 | 292 | 0 | 192 | 484 | 792,420 | 63% | 98% |
| 188 | 229 | 0 | 0 | 27,600 | 27,600 | 263 | 0 | 210 | 473 | 792,893 | 63% | 98% |
| 189 | 502 | 0 | 24,378 | 0 | 24,378 | 281 | 0 | 185 | 466 | 793,359 | 64% | 98% |
| 190 | 378 | 0 | 24,150 | 0 | 24,150 | 279 | 0 | 183 | 462 | 793,822 | 64% | 98% |
| 191 | 410 | 0 | 23,766 | 0 | 23,766 | 274 | 0 | 181 | 455 | 794,276 | 64% | 98% |
| 192 | 370 | 0 | 0 | 23,094 | 23,094 | 267 | 0 | 175 | 442 | 794,718 | 65% | 98% |
| 193 | 120 | 0 | 0 | 23,000 | 23,000 | 265 | 0 | 175 | 440 | 795,158 | 65% | 98% |
| 194 | 274 | 0 | 0 | 22,200 | 22,200 | 256 | 0 | 169 | 425 | 795,583 | 65% | 98% |
| 195 | 684 | 0 | 22,000 | 0 | 22,000 | 254 | 0 | 167 | 421 | 796,004 | 66% | 98% |
| 196 | 151 | 0 | 0 | 21,662 | 21,662 | 250 | 0 | 165 | 415 | 796,419 | 66% | 98% |
| 197 | 429 | 0 | 0 | 21,119.94 | 21,120 | 244 | 0 | 160 | 404 | 796,823 | 66% | 98% |
| 198 | 673 | 0 | 0 | 20,000 | 20,000 | 231 | 0 | 152 | 383 | 797,205 | 67% | 98% |
| 199 | 189 | 0 | 0 | 22,200 | 22,200 | 212 | 0 | 169 | 380 | 797,586 | 67% | 98% |
| 200 | 577 | 0 | 0 | 19,028 | 19,028 | 220 | 0 | 145 | 364 | 797,950 | 67% | 98% |

## GHG Emissions and Capture Rates for 297 SCAQMD Commercial and Mixed Use Commercial Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions (MTCO2e/yr) | Commercial Indirect CO2 Emissions[2] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 201 | 715 | 0 | 0 | 18,195 | 18,195 | 210 | 0 | 138 | 348 | 798,298 | 68% | 98% |
| 202 | 324 | 0 | 0 | 18,058 | 18,058 | 208 | 0 | 137 | 346 | 798,644 | 68% | 98% |
| 203 | 270 | 0 | 17,845 | 0 | 17,845 | 206 | 0 | 136 | 341 | 798,985 | 68% | 98% |
| 204 | 70 | 0 | 0 | 19,856 | 19,856 | 190 | 0 | 151 | 340 | 799,325 | 69% | 98% |
| 205 | 441 | 0 | 0 | 16,856 | 16,856 | 195 | 0 | 128 | 323 | 799,648 | 69% | 98% |
| 206 | 717 | 0 | 0 | 18,000 | 18,000 | 172 | 0 | 137 | 309 | 799,957 | 69% | 99% |
| 207 | 222 | 0 | 16,000 | 0 | 16,000 | 185 | 0 | 122 | 306 | 800,263 | 70% | 99% |
| 208 | 313 | 0 | 0 | 14,820 | 14,820 | 171 | 0 | 113 | 284 | 800,546 | 70% | 99% |
| 209 | 505 | 0 | 0 | 14,820 | 14,820 | 171 | 0 | 113 | 284 | 800,830 | 70% | 99% |
| 210 | 685 | 0 | 0 | 14,670 | 14,670 | 169 | 0 | 111 | 281 | 801,111 | 71% | 99% |
| 211 | 524 | 0 | 0 | 14,483 | 14,483 | 167 | 0 | 110 | 277 | 801,388 | 71% | 99% |
| 212 | 165 | 0 | 14,400 | 0 | 14,400 | 166 | 0 | 109 | 276 | 801,663 | 71% | 99% |
| 213 | 177 | 0 | 14,400 | 0 | 14,400 | 166 | 0 | 109 | 276 | 801,939 | 72% | 99% |
| 214 | 774 | 0 | 0 | 13,652 | 13,652 | 158 | 0 | 104 | 261 | 802,200 | 72% | 99% |
| 215 | 632 | 0 | 0 | 15,160 | 15,160 | 146 | 0 | 115 | 261 | 802,461 | 72% | 99% |
| 216 | 328 | 0 | 0 | 13,614 | 13,614 | 157 | 0 | 103 | 261 | 802,721 | 73% | 99% |
| 217 | 442 | 0 | 0 | 13,612 | 13,612 | 157 | 0 | 103 | 260 | 802,982 | 73% | 99% |
| 218 | 472 | 0 | 14,990 | 0 | 14,990 | 143 | 0 | 114 | 257 | 803,239 | 73% | 99% |
| 219 | 470 | 0 | 0 | 14,741 | 14,741 | 141 | 0 | 112 | 253 | 803,492 | 74% | 99% |
| 220 | 421 | 0 | 0 | 13,000 | 13,000 | 150 | 0 | 99 | 249 | 803,740 | 74% | 99% |
| 221 | 489 | 0 | 12,860 | 0 | 12,860 | 148 | 0 | 98 | 246 | 803,987 | 74% | 99% |
| 222 | 86 | 0 | 13,790 | 0 | 13,790 | 132 | 0 | 105 | 236 | 804,223 | 75% | 99% |
| 223 | 40 | 0 | 0 | 13,561 | 13,561 | 130 | 0 | 103 | 233 | 804,456 | 75% | 99% |
| 224 | 490 | 0 | 0 | 12,024 | 12,024 | 139 | 0 | 91 | 230 | 804,686 | 75% | 99% |
| 225 | 753 | 0 | 0 | 11,800 | 11,800 | 136 | 0 | 90 | 226 | 804,911 | 76% | 99% |
| 226 | 456 | 0 | 0 | 13,135 | 13,135 | 126 | 0 | 100 | 225 | 805,137 | 76% | 99% |
| 227 | 203 | 0 | 0 | 11,691 | 11,691 | 135 | 0 | 89 | 224 | 805,361 | 76% | 99% |
| 228 | 542 | 0 | 0 | 11,000 | 11,000 | 127 | 0 | 84 | 210 | 805,571 | 77% | 99% |
| 229 | 37 | 0 | 0 | 12,000 | 12,000 | 116 | 0 | 91 | 207 | 805,778 | 77% | 99% |
| 230 | 485 | 0 | 0 | 10,780 | 10,780 | 124 | 0 | 82 | 206 | 805,985 | 77% | 99% |
| 231 | 157 | 0 | 10,000 | 0 | 10,000 | 115 | 0 | 76 | 191 | 806,176 | 78% | 99% |
| 232 | 364 | 0 | 0 | 9,600 | 9,600 | 111 | 0 | 73 | 184 | 806,360 | 78% | 99% |
| 233 | 124 | 0 | 9,500 | 0 | 9,500 | 110 | 0 | 72 | 182 | 806,541 | 78% | 99% |
| 234 | 486 | 0 | 0 | 9,460 | 9,460 | 109 | 0 | 72 | 181 | 806,722 | 79% | 99% |
| 235 | 727 | 0 | 0 | 9,388 | 9,388 | 108 | 0 | 71 | 180 | 806,902 | 79% | 99% |
| 236 | 511 | 0 | 0 | 10,000 | 10,000 | 96 | 0 | 76 | 172 | 807,074 | 79% | 99% |
| 237 | 255 | 0 | 5,770 | 4,000 | 9,770 | 93 | 0 | 74 | 168 | 807,241 | 80% | 99% |
| 238 | 648 | 0 | 0 | 8,640 | 8,640 | 100 | 0 | 66 | 165 | 807,407 | 80% | 99% |
| 239 | 643 | 0 | 0 | 8,270 | 8,270 | 95 | 0 | 63 | 158 | 807,565 | 80% | 99% |
| 240 | 390 | 0 | 0 | 8,189 | 8,189 | 95 | 0 | 62 | 157 | 807,722 | 81% | 99% |

## GHG Emissions and Capture Rates for 297 SCAQMD Commercial and Mixed Use Commercial Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions (MTCO2e/yr) | Commercial Indirect CO2 Emissions[2] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 241 | 353 | 0 | 0 | 9,000 | 9,000 | 86 | 0 | 68 | 154 | 807,876 | 81% | 99% |
| 242 | 345 | 0 | 0 | 8,070 | 8,070 | 93 | 0 | 61 | 154 | 808,031 | 81% | 100% |
| 243 | 74 | 0 | 0 | 8,968 | 8,968 | 86 | 0 | 68 | 154 | 808,185 | 82% | 100% |
| 244 | 325 | 0 | 0 | 8,010 | 8,010 | 92 | 0 | 61 | 153 | 808,338 | 82% | 100% |
| 245 | 327 | 0 | 0 | 7,575 | 7,575 | 87 | 0 | 58 | 145 | 808,483 | 82% | 100% |
| 246 | 205 | 0 | 0 | 8,350 | 8,350 | 80 | 0 | 63 | 143 | 808,626 | 83% | 100% |
| 247 | 499 | 0 | 0 | 7,300 | 7,300 | 84 | 0 | 55 | 140 | 808,766 | 83% | 100% |
| 248 | 609 | 0 | 0 | 7,206 | 7,206 | 83 | 0 | 55 | 138 | 808,904 | 84% | 100% |
| 249 | 497 | 0 | 0 | 7,188 | 7,188 | 83 | 0 | 55 | 138 | 809,041 | 84% | 100% |
| 250 | 488 | 0 | 7,600 | 0 | 7,600 | 73 | 0 | 58 | 131 | 809,172 | 84% | 100% |
| 251 | 445 | 0 | 0 | 6,713 | 6,713 | 77 | 0 | 51 | 128 | 809,300 | 85% | 100% |
| 252 | 600 | 0 | 0 | 6,640 | 6,640 | 77 | 0 | 50 | 127 | 809,427 | 85% | 100% |
| 253 | 690 | 0 | 0 | 6,100 | 6,100 | 70 | 0 | 46 | 117 | 809,544 | 85% | 100% |
| 254 | 619 | 0 | 0 | 6,700 | 6,700 | 64 | 0 | 51 | 115 | 809,659 | 86% | 100% |
| 255 | 569 | 0 | 0 | 5,359 | 5,359 | 62 | 0 | 41 | 103 | 809,762 | 86% | 100% |
| 256 | 618 | 0 | 5,322 | 0 | 5,322 | 61 | 0 | 40 | 102 | 809,864 | 86% | 100% |
| 257 | 551 | 0 | 0 | 5,208 | 5,208 | 60 | 0 | 40 | 100 | 809,963 | 87% | 100% |
| 258 | 392 | 0 | 2,290 | 2,769 | 5,059 | 58 | 0 | 38 | 97 | 810,060 | 87% | 100% |
| 259 | 533 | 0 | 0 | 4,890 | 4,890 | 56 | 0 | 37 | 94 | 810,154 | 87% | 100% |
| 260 | 674 | 0 | 0 | 4,800 | 4,800 | 55 | 0 | 36 | 92 | 810,245 | 88% | 100% |
| 261 | 452 | 0 | 0 | 4,605 | 4,605 | 53 | 0 | 35 | 88 | 810,334 | 88% | 100% |
| 262 | 519 | 0 | 0 | 4,500 | 4,500 | 52 | 0 | 34 | 86 | 810,420 | 88% | 100% |
| 263 | 420 | 0 | 0 | 4,196 | 4,196 | 48 | 0 | 32 | 80 | 810,500 | 89% | 100% |
| 264 | 611 | 0 | 0 | 3,820 | 3,820 | 44 | 0 | 29 | 73 | 810,573 | 89% | 100% |
| 265 | 286 | 0 | 0 | 4,130 | 4,130 | 40 | 0 | 31 | 71 | 810,644 | 89% | 100% |
| 266 | 57 | 0 | 0 | 4,089 | 4,089 | 39 | 0 | 31 | 70 | 810,715 | 90% | 100% |
| 267 | 704 | 0 | 0 | 4,089 | 4,089 | 39 | 0 | 31 | 70 | 810,785 | 90% | 100% |
| 268 | 688 | 0 | 0 | 3,640 | 3,640 | 42 | 0 | 28 | 70 | 810,855 | 90% | 100% |
| 269 | 530 | 0 | 3,625 | 0 | 3,625 | 42 | 0 | 28 | 69 | 810,924 | 91% | 100% |
| 270 | 737 | 0 | 0 | 3,300 | 3,300 | 38 | 0 | 25 | 63 | 810,987 | 91% | 100% |
| 271 | 48 | 0 | 0 | 3,600 | 3,600 | 35 | 0 | 27 | 62 | 811,049 | 91% | 100% |
| 272 | 284 | 0 | 0 | 3,025 | 3,025 | 35 | 0 | 23 | 58 | 811,107 | 92% | 100% |
| 273 | 539 | 0 | 3,000 | 0 | 3,000 | 35 | 0 | 23 | 57 | 811,165 | 92% | 100% |
| 274 | 780 | 0 | 0 | 2,950 | 2,950 | 34 | 0 | 22 | 56 | 811,221 | 92% | 100% |
| 275 | 79 | 0 | 0 | 3,178 | 3,178 | 31 | 0 | 24 | 55 | 811,276 | 93% | 100% |
| 276 | 700 | 0 | 1,205 | 1,595 | 2,800 | 32 | 0 | 21 | 54 | 811,330 | 93% | 100% |
| 277 | 576 | 0 | 0 | 2,736 | 2,736 | 32 | 0 | 21 | 52 | 811,382 | 93% | 100% |
| 278 | 242 | 0 | 0 | 2,730 | 2,730 | 32 | 0 | 21 | 52 | 811,434 | 94% | 100% |
| 279 | 749 | 0 | 2,650 | 0 | 2,650 | 31 | 0 | 20 | 51 | 811,485 | 94% | 100% |
| 280 | 391 | 0 | 0 | 2,600 | 2,600 | 30 | 0 | 20 | 50 | 811,535 | 94% | 100% |

## GHG Emissions and Capture Rates for 297 SCAQMD Commercial and Mixed Use Commercial Projects (2007-2008) from OPR Database

| | Project # | Residential (Units) | Office (sq.ft.) | Comm. (sq.ft.) | TOTAL Office + Comm. (sq.ft.) | Direct CO2 Emissions (MTCO2/yr)[1] | Residential Indirect CO2 Emissions (MTCO2e/yr) | Commercial Indirect CO2 Emissions[2] (MTCO2e/yr) | TOTAL GHG Emissions (MTCO2e/yr) | Cumulative Total GHG Emissions | # of Projects Capture Rate | Emissions Capture Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 281 | **681** | 0 | 0 | 2,532 | 2,532 | 29 | 0 | 19 | 48 | 811,583 | 95% | 100% |
| 282 | **65** | 0 | 0 | 2,650 | 2,650 | 26 | 0 | 20 | 46 | 811,629 | 95% | 100% |
| 283 | **711** | 0 | 0 | 2,320 | 2,320 | 27 | 0 | 18 | 44 | 811,673 | 95% | 100% |
| 284 | **531** | 0 | 0 | 2,240 | 2,240 | 26 | 0 | 17 | 43 | 811,716 | 96% | 100% |
| 285 | **634** | 0 | 0 | 2,139 | 2,139 | 25 | 0 | 16 | 41 | 811,757 | 96% | 100% |
| 286 | **697** | 0 | 0 | 2,000 | 2,000 | 23 | 0 | 15 | 38 | 811,795 | 96% | 100% |
| 287 | **739** | 0 | 0 | 1,904 | 1,904 | 22 | 0 | 14 | 36 | 811,832 | 97% | 100% |
| 288 | **679** | 0 | 0 | 1,750 | 1,750 | 20 | 0 | 13 | 33 | 811,865 | 97% | 100% |
| 289 | **785** | 0 | 0 | 1500 | 1,500 | 15 | 0 | 11 | 26 | 811,891 | 97% | 100% |
| 290 | **757** | 0 | 0 | 1,500 | 1,500 | 15 | 0 | 11 | 26 | 811,918 | 98% | 100% |
| 291 | **503** | 0 | 0 | 1,250 | 1,250 | 12 | 0 | 9 | 22 | 811,939 | 98% | 100% |
| 292 | **403** | 0 | 0 | 924 | 924 | 11 | 0 | 7 | 18 | 811,957 | 98% | 100% |
| 293 | **137** | 0 | 0 | 900 | 900 | 10 | 0 | 7 | 17 | 811,974 | 99% | 100% |
| 294 | **756** | 0 | 0 | 840 | 840 | 10 | 0 | 6 | 16 | 811,990 | 99% | 100% |
| 295 | **751** | 0 | 0 | 800 | 800 | 9 | 0 | 6 | 15 | 812,006 | 99% | 100% |
| 296 | **350** | 0 | 744 | 0 | 744 | 9 | 0 | 6 | 14 | 812,020 | 100% | 100% |
| 297 | **257** | 0 | 0 | 200 | 200 | 2 | 0 | 2 | 4 | 812,024 | 100% | 100% |

1. Direct CO2 emissions calculated using URBEMIS model fo CO2 emissions only. Defaults were used except for the avg trip rates which were weighted for the week (6.02 for office/commercial). Total direct CO2 emissions includes construction, area and operational emissions (construction emissions amortized over 30 years).

Ratio for direct commercial CO2 based on project #455: 1,834 MT/yr/158,930 ft2 = 0.01154 (determined by URBEMIS)

2. Annual Electricity Usage based on statewide annual electricity and water-related energy use (0.01519 MW/ft$^2$) from the California Commercial End-Use Survey

(Itron, Inc for California Energy Commission, March 2006). Annual Statewide Energy Intensity (1,100 lbs/MWh) from the "Reporting and Verification of GHG Emissions in Electricity Sector"

(California Public Utilities Commmission and California Energy Commission Joint Decision, September 2007)

# Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #14

November 19, 2009

SCAQMD

Diamond Bar, California

# Agenda Item #2 - Proposed Residential/Commercial Thresholds – Screening Values (Tier III)

- Staff GHG ST recommendation – two options
- Lead agencies would select 1 of the 2 options:
  - ✓ GHG ST Option #1: By land use type
    - Residential: 3500 tpy $CO_2e$
    - Commercial: 1400 tpy $CO_2e$
    - Mixed use: 3000 tpy $CO_2e$
  - ✓ GHG ST Option #2: Combined approach (all 3 land use types)
    - 3000 tpy $CO_2e$ for all land use projects

# Agenda Item #2 – Proposed Residential/Commercial Thresholds – Screening Values (Tier III) *(Concluded)*

- OPR 2007-2008 database of 711 projects survey results:
  - ✓ GHG STs based on 90% emission capture rate
  - ✓ Project capture rate Option 1
    - ➢ Residential = 34 %
    - ➢ Commercial = 39%
    - ➢ Mixed use = 34%
  - ✓ Project capture rate Option 2 = 34%
- 17% (120 projects) more EIRs prepared (assumes no additional GHG mitigation measures)

# Agenda Item #3 – Proposed Performance Standards (Tier IV)

- Tier IV Compliance Option #1: Reduction Target (%)
  - ✓Max % reduction (land use sector reduction-23.9%, Scoping Plan overall reduction-28%)
  - ✓Target updated as AB32 Scoping Plan revised
  - ✓Residual emissions not to exceed 25,000 mty CO2e
  - ✓Base case scenario to be defined

# BAAQMD Table 3 – 2020 Land Use Sector GHG Emission Reductions from State Regulations and AB 32 Measures

| Affected Emissions Source | California Legislation | % Reduction from 2020 GHG inventory | End Use Sector (% of Bay Area LU Inventory) | Scaled % Emissions Reduction (credit) |
|---|---|---|---|---|
| Mobile | AB 1493 (Pavley) | 19.7% | On road passenger/light truck transportation (45%) | 8.9% |
| | LCFS | 7.2% | On road passenger/light truck transportation (45%) | 3.2% |
| | LCFS | 7.2% | On road Heavy/Medium Duty Transportation (5%) | 0.4% |
| | Heavy/Medium Duty Efficiency | 2.9% | On road Heavy/Medium Duty Transportation (5%) | 0.2% |
| | Passenger Vehicle Efficiency | 2.8% | On road passenger/light truck transportation (45%) | 1.3% |
| Area | Energy-Efficiency Measures | 9.5% | Natural gas (Residential, 10%) | 1.0% |
| | Energy-Efficiency Measures | 9.5% | Natural gas (Residential, 10%) | 1.0% |
| Indirect | Renewable Portfolio Standard | 21.0% | Electricity (excluding cogen) (17%) | 3.5% |
| | Energy-Efficiency Measures | 15.7% | Electricity (26%) | 4.0% |
| | Solar Roofs | 1.5% | Electricity (excluding cogen) (17%) | 0.2% |
| Total credits given to land use-driven emission inventory sectors from Scoping Plan measures | | | | **23.9%** |

Notes: AB = Assembly Bill; LCFS = Low Carbon Fuel Standard; SB = Senate Bill; RPS = Renewable Portfolio Standard

# Agenda Item #3 – Proposed Performance Standards (Tier IV) *(Continued)*

- Tier IV Compliance Option #2: Efficiency Target
  - ✓ 4.6 mt CO2e per SP* for project level threshold (land use emissions only) & total residual emissions not to exceed 25,000 mty CO2e
  - ✓ 6.6 mt CO2e per SP for plan level threshold (all sectors)
- Sample calculations

*sp (service population)= population+employment

# BAAQMD Table 7 – California 2020 GHG Emissions, Population Projections and GHG Efficiency Thresholds - All Inventory Sectors

| **All Inventory Sectors Greenhouse Gas Emissions Target** | **426,500,000** |
|---|---|
| Population | 44,135,923 |
| Employment | 20,194,661 |
| California Service Population (Population + Employment) | 64,330,584 |
| AB 32 Goal GHG emissions (metric tons $CO_2e$)/SP[1] | **6.6** |

Notes: AB = Assembly Bill; $CO_2e$ = carbon dioxide equivalent; GHG = greenhouse gas; SP = service population.

[1] Greenhouse gas efficiency levels were calculated using only the "land use-related" sectors of ARB's emissions inventory.

# Agenda Item #4 – Base Case Scenario

- Pre-defined to avoid gaming the system
  - ✓Final project type
  - ✓Final project location
  - ✓Same projected future year inventory methodology and assumptions as the most recent AB32 Scoping Plan for estimating project emissions
  - ✓Vehicle trips, trip lengths, and density
- Base case derived using land use emission calculation models with default emission rates (pre-AB32 Scoping Plan)

# Comparison Between SCAQMD & BAAQMD Proposed GHG STs (MTCO2e/yr)

| Category | SCAQMD | BAAQMD |
|---|---|---|
| Construction | 30-yr amortization applied to operational ST | None recommended at this time |
| Stationary Sources Operation | 10,000 | 10,000 |
| Land Use Projects | | |
| Numerical (Tier 3) | R = 3,500; C = 1,400; M = 3,000 | |
| | Or RCM = 3,000 | RCM = 1,100 |
| Performance Std (Tier 4) | | |
| Compliance Option #1 - % Reduction | 28% | None |
| Compliance Option #3 - GHGs/unit | | |
| Project Level | 4.6/SP/yr | 4.6/SP/yr |
| General Plans, etc. | 6.6/SP/yr | 6.6/SP/yr |
| Maximum Emission Limit | 25,000 | None |
| R = Residential; C = Commercial; M = Mixed Use; SP = Service Population (jobs + residents) | | |

# Agenda Items #5, #6, & #7

- Other topics?
- Closing remarks
- Other business
- Next working group meeting scheduled for 12/17/09, 10:00 a.m.

# Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group Meeting #15

September 28, 2010

SCAQMD

Diamond Bar, California

# Agenda Item #2 – Review of Significance Threshold Approach

- ✓ **Tier 1: Applicable CEQA Exemptions** (e.g., SB 97, categorical & statutory exemptions)
- ✓ **Tier 2: Consistent with GHG reduction plan** (§§15064(h)(3), 15125(d), or 15152(a))

# Agenda Item #2 - Proposed Tier 3: Screening Values

- **Industrial Projects**
  - ✓ AQMD lead agency projects: 10,000 MT/year CO2e
  - ➢ Propose to expand to other lead agency industrial projects
- **Residential / Commercial Projects**
  - ➢ Propose 3,000 MT/year CO2e for all land use types
  - ➢ Threshold value by land use type acceptable if used consistently
    - Residential: 3500 MT/year CO2e
    - Commercial: 1400 MT/year CO2e
    - Mixed use: 3000 MT/year CO2e
  - ➢ Both options based on review of the OPR database (711 CEQA projects) using the 90% capture rate approach

# Agenda Item #2 – Proposed Tier 4: Performance Standards

- **Option #1: Percent Emission Reduction Target**
  - No recommendation at this time
    - Provide reference to SJVAPCD approach and summarize key challenges for this approach
- **Option #2: Early Implementation of Applicable AB32 Scoping Plan Measures**
  - Incorporated in Option #3

# Agenda Item #2 – Proposed Tier 4: Performance Standards *(Continued)*

- **Option #3: SCAQMD Efficiency Target**
  - **2020 Targets**
    - 4.8 MT/year CO2e per SP* for project level threshold (land use employment only)
    - 6.6 MT/year CO2e per SP for plan level threshold
    - Similar approach as BAAQMD
  - **2035 Targets**
    - 3.0 MT/year CO2e per SP* for project level threshold
    - 4.1 MT/year CO2e per SP* for plan level threshold
    - Incorporate SB 375 regional targets

# Agenda Item #2 – Tier 5: Mitigation Offsets

- ✓ Offsets alone or in combination with above tiers to achieve target significance threshold.
- ✓ 30-year project life
- ✓ Real, Quantifiable, Verifiable, and Surplus
  - ➢ Project design feature/onsite reduction measures
  - ➢ Offsite within neighborhood
  - ➢ Offsite within district
  - ➢ Offsite within state
  - ➢ Offsite out of state
  - ➢ Substitution allowed via enforceable commitment

# Agenda Items #3, #4, & #5

- Other topics?
- Next steps
  - Potential board consideration by December 2010
- Other business
- Next working group meeting scheduled for 10/27/10, 10:00 a.m.

# Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15

**Tuesday, September 28, 2010**
**SCAQMD, Room GB, 10:00 AM – 12:00 PM**

## 1. Welcome and Introductions

Dr. Elaine Chang, Deputy Executive Officer of SCAQMD's Planning Rule Development and Area Sources Division, called the meeting to order at 10:10 A.M. and asked for self introductions of the working group members and SCAQMD staff. Dr. Chang then presented an overview of the meeting agenda.

## 2. Review of Significance Threshold Approach

Mr. Mike Krause, Program Supervisor of the CEQA Special Projects section in SCAQMD's Planning Rule Development and Area Sources Division, provided a summary of SCAQMD staff's proposed GHG significance threshold approach, shown in the following bullet points:

- Tier I – Exemptions, e.g., categorical, statutory, etc.
- Tier II – Consistency with a locally adopted GHG reduction plan
- Tier III – Numerical Screening Thresholds

  Mr. Krause reminded the group that on December 5, 2008, the SCAQMD Governing Board adopted a numerical GHG significance threshold of 10,000 MTCO2e/year for industrial projects where the SCAQMD is the lead agency. Staff is now proposing to extend the industrial GHG significance threshold for use by all lead agencies. Similarly, with regard to numerical residential/commercial GHG significance thresholds, at the 11/19/2009 stakeholder working group meeting staff presented two options that lead agencies could choose: option #1 – separate numerical thresholds for residential projects (3,500 MTCO2e/year), commercial projects (1,400 MTCO2e/year), and mixed use projects (3,000 MTCO2e/year) and; option #2 – a single numerical threshold for all non-industrial projects of 3,000 MTCO2e/year. If a lead agency chooses one option, it must consistently use that same option for all projects where it is lead agency. The current staff proposal is to recommend the use of option #2, but allow lead agencies to choose option #1 if they prefer that approach.

- Tier IV – Performance Standards
  - Option 1 – Percent Emission Reduction Target

    SCAQMD staff has no recommendation regarding this approach at this time. Instead, if lead agencies enquire about using this approach, staff would reference the GHG significance approach recommended by San Joaquin Valley APCD and describe some of the challenges of using this approach.
  - Option 2 – Early Implementation of Applicable Measures – this option has been folded into option 3.
  - Option 3 – Sector-based Standard

Dr. Elaine Chang presented information on the currently proposed Tier IV performance standards. Option 3 has been modified to incorporate the Bay Area AQMD's concept of efficiency-based threshold for two target dates: 2020 and 2035. Relative to the 2020 target date, staff agrees with the methodology for establishing the efficiency threshold value of 6.6 MTCO2/yr for plans because this number is based on statewide service population (SP) in 2020. With regard to the project level efficiency threshold SCAQMD staff took a slightly different approach than BAAQMD. To derive the project level efficiency threshold of 4.6, it appears that BAAQMD took the 2020 statewide GHG reduction target for land use only (295,530,000 MTCO2e/yr) and divided it by the total 2020 statewide SP (population plus employment) (44,135,923 + 20,194,661), i.e., (295,530,000 MTCO2e/yr)/(44,135,923 + 20,194,661) = 4.6 MTCO2e/yr. SCAQMD staff believes that instead of using total 2020 statewide employment for all sectors, this approach should have used total 2020 statewide employment for the land use sectors only (17,064,489). If you use total 2020 statewide employment for land use sectors instead of total 2020 statewide employment for all sectors as BAAQMD did, your local project efficiency threshold becomes: (295,530,000 MTCO2e/yr)/( 44,135,923 + 17,064,489) = 4.8 MTCO2e/yr.

Relative to the 2035 target date, this target date was selected to be consistent with the GHG reduction target date of SB375. Overall, GHG reductions by the SB 375 target date of 2035 would be approximately 40 percent. This 40 percent reduction was applied to the 2020 targets, resulting in an efficiency threshold for plans of 4.1 MTCO2e/yr and an efficiency threshold at the project level of 3.0 MTCO2e/yr.

- Tier V – Mitigation: CEQA Offsets – no changes.

A question was asked whether or not a project must be less than or equal to both the 2020 and 2035 efficiency threshold in order to be considered insignificant. Staff responded yes.

Another stakeholder asked if the lead agency could take credit for GHG design features when determining the significance of GHG impacts. Staff responded yes.

Staff was asked whether or not they had looked at any test cases to see if projects could meet the 2035 efficiency threshold. Staff responded that no test cases were evaluated. However, it may be likely that projects can achieve the 2035 efficiency threshold because the SB375 target GHG reductions are expected to be met primarily through cleaner fleets as a result of fleet turnover and reducing VMT. Consequently, fleet turnover plus a small increment of GHG reductions from land use projects could potentially achieve the 2035 efficiency threshold.

A comment was made that by establishing a GHG significance threshold for both 2020 and 2035, a lead agency would have to continuing mitigating GHG emission impacts for 40 years, which is equivalent to establishing a reasonably available control technology (RACT) rule. Dr. Chang responded that by establishing the 2035 efficiency threshold, to reduce potential GHG impacts to less than significant, the lead agency and project proponent may need to "sharpen their pencils" to identify mitigation measures to remain less than significant. The staff proposal is not considered to be equivalent to a RACT rule because a

project could exceed the 2020 and or 2035 efficiency threshold, but still be approved and built.

A comment was made that exceeding the target efficiency threshold is not just a question of going through the CEQA process, which would require preparation of an EIR, feasible mitigation measures, alternatives, etc. The lead agency would have to approve a project with significant impacts, make findings, and prepare a statement of overriding considerations. In this situation there is legal vulnerability to a certain extent.

A question was asked about how to treat projects where GHG impacts from VMT are a small part of the project. Dr. Chang responded that for this type of project, the lead agency and/or project proponent would have to look at other measures or design features to reduce impacts to less than the 2020 and 2035 efficiency threshold. For these types of projects, it may be difficult to achieve the target efficiency threshold.

A comment was made that the SCAQMD's approach to Tier IV option one, that is, no recommendation, but discuss challenges, implies opposition to this approach. This perceived opposition could jeopardize the Tier II approach, which relies on consistency with a GHG reduction plan. GHG reduction plans will likely rely on a percent GHG reduction to achieve some future target, e.g., AB 32 2020 GHG reduction targets. Although there may be some issues with the percent reduction approach, e.g., gaming the system, there may be valid reasons for using this approach, so the SCAQMD should not discourage it. Another participant suggested that perhaps the SCAQMD could simply say that staff has not sufficiently evaluated this approach and will evaluate the appropriateness of this option on a case-by-case basis.

A comment was made that using SB 375 targets may require GHG reductions that go beyond what would be required in sustainable community strategies (SCSs) and alternative planning strategies (APSs). Further, SB 375 is primarily related to reducing GHG emissions from mobile sources, so establishing 2035 efficiency threshold based only on SB 375 ignores the GHG emission effects from AB 32 (CARB's Scoping Plan). SB 375 relies primarily on process or incentives to reduce GHG emissions rather than mandates. SB 375 also relaxes state requirements to update Housing Elements from five to eight years. CARB's Scoping Plan has provisions for updating the GHG reduction targets every four or eight years, which would provide more flexibility in developing future target efficiency threshold. For this reason and the fact that the Scoping Plan addresses GHG emission reductions from various land use sectors, it may be more appropriated to rely on the GHG emission reduction targets identified by CARB in the Scoping Plan for developing future target efficiency threshold.

A question was asked whether or not a lead agency could use GHG emission offsets to achieve the target efficiency threshold. Staff responded that there did not seem to be a downside to using offsets to get below the target efficiency threshold.

A request was made for SCAQMD staff to eliminate the maximum GHG limit proposal that was discussed at the November 19, 2009 stakeholder working group meeting. Any projects that exceed the maximum GHG limit would be considered significant, even though they

achieved or are less than the target efficiency threshold. Staff stated that they were no longer including the maximum limit in the staff proposal.

A suggestion was made that the SCAQMD should not move forward with the efficiency threshold approach because lead agencies in the Bay Area are encountering a number of serious issues using this approach. In addition, because of the way the efficiency threshold is derived, it may inhibit proposals for mixed use projects rather than encourage them.

**3. Other Topics**

None.

**4. Next Steps**

A question was asked regarding when staff expected to bring the current GHG proposals to the Governing Board for consideration. Staff responded that the hope was to bring the proposals to the Board by December 2010. However, this schedule will depend on any feedback from the working group and necessary changes to the current proposals. In addition, the guidance document prepared for the numerical industrial GHG significance threshold needs to be revised and updated to reflect the current proposals.

**5. Closing Remarks**

The meeting ended at approximately 11:00 a.m. The next meeting is scheduled for August 26, 2009 in meeting room GB at 10:00 AM.

**6. Other Business**

None.

**MEMBERS PRESENT (11)**

Greg Adams – City of Los Angeles Bureau of Sanitation
James Arnone – Latham & Watkins
Doug Feremenga – San Bernardino County Land Use Planning Department
Michael Hendrix – Association of Environmental Professionals (AEP)
Shari Libicki, Green Developers Coalition (*on conference call)*
Debbie Stevens – Refineries
Cindy Thielman – Riverside County Planning Department
Jocelyn Thompson - Alston
Matt Vespa – Center for Biological Diversity (CBD) (*on conference call)*
Carla Walecka – Realtors Committee on Air Quality (RCAQ)
Lee Wallace – Sempra Energy Utilities

**OTHERS PRESENT (7)**

Lilia Barker – LADWP (*on conference call)*

Patrick Griffith – County Sanitation Districts of Los Angeles County
Mark Hagmann – Matrix (*on conference call)*
Sung Key Ma – Riverside County Waste Management Department
Vince Mirabella – Michael Brandman Associates
Molly Pearson – Santa Barbara County APCD (*on conference call*)
Haseeb Qureshi – Urban Crossroads

**AQMD STAFF PRESENT (8)**

Elaine Chang – Deputy Executive Officer
Steve Smith – Program Supervisor
Daniel Garcia – Air Quality Specialist
Jeff Inabinet – Air Quality Specialist
James Koizumi – Air Quality Specialist
Mike Krause – Program Supervisor
Gordon Mize – Air Quality Specialist
Barbara Radlein – Air Quality Specialist

# Appendix D. Attachments to Letter O2A - SWAPE Comments

# Appendices

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Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

# Irwindale Gateway Project (Option 1)

**South Coast AQMD Air District, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 998.00 | 1000sqft | 22.91 | 997,796.00 | 0 |
| Other Non-Asphalt Surfaces | 310.00 | 1000sqft | 7.12 | 310,164.00 | 0 |
| Other Non-Asphalt Surfaces | 201.00 | 1000sqft | 4.61 | 0.00 | 0 |
| Parking Lot | 881.00 | 1000sqft | 20.22 | 0.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 31 |
| **Climate Zone** | 9 | | | **Operational Year** | 2028 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 390.98 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with DEIR's model.

Land Use - Consistent with DEIR's model.

Construction Phase - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Trips and VMT - Consistent with DEIR's model.

Grading - Consistent with DEIR's model.

Architectural Coating - Consistent with DEIR's model.

Vehicle Trips - Consistent with DEIR's model.

Area Coating - Consistent with DEIR's model.

Water And Wastewater - See comment on: "Unsubstantiated Changes to Operational Wastewater Values".

Construction Off-road Equipment Mitigation - See comment on: "Incorrect Application of Tier 4 Final Mitigation".

Fleet Mix - See comment: "Unsubstantiated Changes to Fleet Mix Values".

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 498,898.00 | 37,055.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 498,898.00 | 461,843.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 1,496,694.00 | 111,165.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 1,496,694.00 | 1,385,529.00 |
| tblArchitecturalCoating | ConstArea_Parking | 18,610.00 | 3,516.00 |
| tblArchitecturalCoating | ConstArea_Parking | 18,610.00 | 45,120.00 |
| tblArchitecturalCoating | EF_Residential_Exterior | 50.00 | 0.00 |
| tblArchitecturalCoating | EF_Residential_Exterior | 50.00 | 0.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 50.00 | 0.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 50.00 | 0.00 |
| tblConstructionPhase | NumDays | 75.00 | 56.00 |
| tblConstructionPhase | NumDays | 75.00 | 55.00 |
| tblConstructionPhase | NumDays | 1,110.00 | 240.00 |
| tblConstructionPhase | NumDays | 1,110.00 | 239.00 |
| tblConstructionPhase | NumDays | 110.00 | 23.00 |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 110.00 | 22.00 |
| tblConstructionPhase | NumDays | 75.00 | 55.00 |
| tblLandUse | LandUseSquareFeet | 998,000.00 | 997,796.00 |
| tblLandUse | LandUseSquareFeet | 201,000.00 | 0.00 |
| tblLandUse | LandUseSquareFeet | 310,000.00 | 310,164.00 |
| tblLandUse | LandUseSquareFeet | 881,000.00 | 0.00 |
| tblOffRoadEquipment | HorsePower | 231.00 | 212.00 |
| tblOffRoadEquipment | HorsePower | 402.00 | 158.00 |
| tblOffRoadEquipment | LoadFactor | 0.29 | 0.43 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 214.00 | 164.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 20.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 214.00 | 164.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 20.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | |
|---|---|---|---|
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 15.00 |
| tblTripsAndVMT | WorkerTripNumber | 549.00 | 419.00 |
| tblTripsAndVMT | WorkerTripNumber | 110.00 | 168.00 |
| tblTripsAndVMT | WorkerTripNumber | 15.00 | 20.00 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 15.00 |
| tblTripsAndVMT | WorkerTripNumber | 549.00 | 419.00 |
| tblTripsAndVMT | WorkerTripNumber | 110.00 | 168.00 |
| tblVehicleTrips | ST_TR | 1.74 | 2.06 |
| tblVehicleTrips | SU_TR | 1.74 | 2.06 |
| tblVehicleTrips | WD_TR | 1.74 | 2.06 |

## 2.0 Emissions Summary

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2024 | 0.2155 | 1.6266 | 2.3145 | 7.7700e-003 | 0.4489 | 0.0516 | 0.5005 | 0.1213 | 0.0483 | 0.1697 | 0.0000 | 716.2534 | 716.2534 | 0.0647 | 0.0431 | 730.7111 |
| 2025 | 0.5985 | 1.5936 | 2.6360 | 8.1000e-003 | 0.5020 | 0.0504 | 0.5524 | 0.1354 | 0.0472 | 0.1826 | 0.0000 | 745.9246 | 745.9246 | 0.0667 | 0.0416 | 759.9803 |
| 2026 | 0.1592 | 1.2924 | 1.6840 | 5.5700e-003 | 0.3993 | 0.0414 | 0.4407 | 0.1214 | 0.0386 | 0.1600 | 0.0000 | 510.9050 | 510.9050 | 0.0605 | 0.0272 | 520.5287 |
| 2027 | 4.6744 | 2.2290 | 3.2000 | 0.0106 | 0.7609 | 0.0689 | 0.8298 | 0.2182 | 0.0645 | 0.2827 | 0.0000 | 975.8484 | 975.8484 | 0.0928 | 0.0544 | 994.3680 |
| **Maximum** | **4.6744** | **2.2290** | **3.2000** | **0.0106** | **0.7609** | **0.0689** | **0.8298** | **0.2182** | **0.0645** | **0.2827** | **0.0000** | **975.8484** | **975.8484** | **0.0928** | **0.0544** | **994.3680** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 2.1 Overall Construction

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2024 | 0.2155 | 1.6266 | 2.3145 | 7.7700e-003 | 0.4489 | 0.0516 | 0.5005 | 0.1213 | 0.0483 | 0.1697 | 0.0000 | 716.2532 | 716.2532 | 0.0647 | 0.0431 | 730.7109 |
| 2025 | 0.5985 | 1.5936 | 2.6360 | 8.1000e-003 | 0.5020 | 0.0504 | 0.5524 | 0.1354 | 0.0472 | 0.1826 | 0.0000 | 745.9244 | 745.9244 | 0.0667 | 0.0416 | 759.9801 |
| 2026 | 0.1592 | 1.2924 | 1.6840 | 5.5700e-003 | 0.3993 | 0.0414 | 0.4407 | 0.1214 | 0.0386 | 0.1600 | 0.0000 | 510.9048 | 510.9048 | 0.0605 | 0.0272 | 520.5284 |
| 2027 | 4.6744 | 2.2290 | 3.2000 | 0.0106 | 0.7609 | 0.0689 | 0.8298 | 0.2182 | 0.0645 | 0.2827 | 0.0000 | 975.8481 | 975.8481 | 0.0928 | 0.0544 | 994.3676 |
| **Maximum** | **4.6744** | **2.2290** | **3.2000** | **0.0106** | **0.7609** | **0.0689** | **0.8298** | **0.2182** | **0.0645** | **0.2827** | **0.0000** | **975.8481** | **975.8481** | **0.0928** | **0.0544** | **994.3676** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **7-15-2024** | **10-14-2024** | 1.0743 | 1.0743 |
| **2** | **10-15-2024** | **1-14-2025** | 0.8689 | 0.8689 |
| **3** | **1-15-2025** | **4-14-2025** | 0.9545 | 0.9545 |
| **4** | **4-15-2025** | **7-14-2025** | 1.1131 | 1.1131 |
| **9** | **7-15-2026** | **10-14-2026** | 0.7236 | 0.7236 |
| **10** | **10-15-2026** | **1-14-2027** | 0.8193 | 0.8193 |
| **11** | **1-15-2027** | **4-14-2027** | 0.7778 | 0.7778 |
| **12** | **4-15-2027** | **7-14-2027** | 3.3686 | 3.3686 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | |
|---|---|---|---|---|
| **13** | **7-15-2027** | **9-30-2027** | 2.6368 | 2.6368 |
| | | **Highest** | 3.3686 | 3.3686 |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 4.0952 | 2.8000e-004 | 0.0304 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0593 | 0.0593 | 1.5000e-004 | 0.0000 | 0.0632 |
| Energy | 4.6300e-003 | 0.0421 | 0.0353 | 2.5000e-004 | | 3.2000e-003 | 3.2000e-003 | | 3.2000e-003 | 3.2000e-003 | 0.0000 | 723.5281 | 723.5281 | 0.0581 | 7.7700e-003 | 727.2966 |
| Mobile | 1.0766 | 1.2873 | 11.5814 | 0.0275 | 3.3174 | 0.0187 | 3.3361 | 0.8854 | 0.0174 | 0.9028 | 0.0000 | 2,548.7647 | 2,548.7647 | 0.1568 | 0.1085 | 2,585.0111 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 190.4299 | 0.0000 | 190.4299 | 11.2541 | 0.0000 | 471.7820 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 73.2182 | 532.9383 | 606.1565 | 7.5652 | 0.1830 | 849.8266 |
| **Total** | **5.1764** | **1.3296** | **11.6472** | **0.0278** | **3.3174** | **0.0220** | **3.3394** | **0.8854** | **0.0207** | **0.9061** | **263.6481** | **3,805.2905** | **4,068.9386** | **19.0343** | **0.2993** | **4,633.9795** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 4.0952 | 2.8000e-004 | 0.0304 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0593 | 0.0593 | 1.5000e-004 | 0.0000 | 0.0632 |
| Energy | 4.6300e-003 | 0.0421 | 0.0353 | 2.5000e-004 | | 3.2000e-003 | 3.2000e-003 | | 3.2000e-003 | 3.2000e-003 | 0.0000 | 723.5281 | 723.5281 | 0.0581 | 7.7700e-003 | 727.2966 |
| Mobile | 1.0766 | 1.2873 | 11.5814 | 0.0275 | 3.3174 | 0.0187 | 3.3361 | 0.8854 | 0.0174 | 0.9028 | 0.0000 | 2,548.7647 | 2,548.7647 | 0.1568 | 0.1085 | 2,585.0111 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 190.4299 | 0.0000 | 190.4299 | 11.2541 | 0.0000 | 471.7820 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 73.2182 | 532.9383 | 606.1565 | 7.5652 | 0.1830 | 849.8266 |
| **Total** | **5.1764** | **1.3296** | **11.6472** | **0.0278** | **3.3174** | **0.0220** | **3.3394** | **0.8854** | **0.0207** | **0.9061** | **263.6481** | **3,805.2905** | **4,068.9386** | **19.0343** | **0.2993** | **4,633.9795** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Building 1 Utility Trenching | Trenching | 7/15/2024 | 8/13/2024 | 5 | 22 | |
| 2 | Building 1 Construction | Building Construction | 7/15/2024 | 6/15/2025 | 5 | 240 | |
| 3 | Building 1 Paving | Paving | 3/30/2025 | 6/15/2025 | 5 | 55 | |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 | Building 1 Architectural Coating | Architectural Coating | 3/30/2025 | 6/16/2025 | 5 | 56 | |
| 5 | Rough Grading | Grading | 9/15/2026 | 10/15/2026 | 5 | 23 | |
| 6 | Buildings 2 and 3 Utility Trenching | Trenching | 9/15/2026 | 10/15/2026 | 5 | 23 | |
| 7 | Buildings 2 and 3 Construction | Building Construction | 9/15/2026 | 8/15/2027 | 5 | 239 | |
| 8 | Buildings 2 and 3 Architectural Coating | Architectural Coating | 5/31/2027 | 8/15/2027 | 5 | 55 | |
| 9 | Fine Grading | Grading | 7/15/2027 | 8/15/2027 | 5 | 22 | |
| 10 | Finishing/Landscaping | Trenching | 7/15/2027 | 8/13/2027 | 5 | 22 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 69**

**Acres of Paving: 31.95**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 111,165; Non-Residential Outdoor: 37,055; Striped Parking Area: 3,516 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Rough Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Rough Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Rough Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Rough Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Fine Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Fine Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Fine Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Fine Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Fine Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building 1 Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building 1 Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building 1 Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building 1 Construction | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | |
|---|---|---|---|---|---|
| Building 1 Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Buildings 2 and 3 Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Buildings 2 and 3 Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Buildings 2 and 3 Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Buildings 2 and 3 Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Buildings 2 and 3 Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Building 1 Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Building 1 Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Building 1 Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Building 1 Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Buildings 2 and 3 Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Building 1 Utility Trenching | | | | | |
| Building 1 Utility Trenching | Cranes | 1 | 8.00 | 212 | 0.43 |
| Building 1 Utility Trenching | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Building 1 Utility Trenching | Excavators | 1 | 8.00 | 158 | 0.38 |
| Building 1 Utility Trenching | Off-Highway Trucks | 2 | 8.00 | 402 | 0.38 |
| Buildings 2 and 3 Utility Trenching | Cranes | 1 | 8.00 | 231 | 0.29 |
| Buildings 2 and 3 Utility Trenching | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Buildings 2 and 3 Utility Trenching | Excavators | 2 | 8.00 | 158 | 0.38 |
| Buildings 2 and 3 Utility Trenching | Off-Highway Trucks | 1 | 8.00 | 402 | 0.38 |
| Finishing/Landscaping | Cranes | 1 | 8.00 | 231 | 0.29 |
| Finishing/Landscaping | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Finishing/Landscaping | Excavators | 2 | 8.00 | 158 | 0.38 |
| Finishing/Landscaping | Off-Highway Trucks | 1 | 8.00 | 158 | 0.38 |
| Finishing/Landscaping | Rubber Tired Loaders | 1 | 8.00 | 203 | 0.36 |

## Trips and VMT

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Rough Grading | 6 | 20.00 | 20.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Fine Grading | 8 | 20.00 | 20.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Construction | 9 | 419.00 | 164.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Buildings 2 and 3 Construction | 9 | 419.00 | 164.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Paving | 6 | 15.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Architectural Coating | 1 | 168.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Buildings 2 and 3 Architectural Coating | 1 | 168.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Utility Trenching | 5 | 15.00 | 6.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Buildings 2 and 3 Utility Trenching | 5 | 15.00 | 6.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Finishing/Landscaping | 6 | 15.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Building 1 Utility Trenching - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0226 | 0.1933 | 0.1582 | 5.2000e-004 | | 7.6100e-003 | 7.6100e-003 | | 7.0000e-003 | 7.0000e-003 | 0.0000 | 45.7044 | 45.7044 | 0.0148 | 0.0000 | 46.0739 |
| **Total** | **0.0226** | **0.1933** | **0.1582** | **5.2000e-004** | | **7.6100e-003** | **7.6100e-003** | | **7.0000e-003** | **7.0000e-003** | **0.0000** | **45.7044** | **45.7044** | **0.0148** | **0.0000** | **46.0739** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.2 Building 1 Utility Trenching - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 8.0000e-005 | 3.3700e-003 | 1.0900e-003 | 2.0000e-005 | 6.1000e-004 | 2.0000e-005 | 6.3000e-004 | 1.8000e-004 | 2.0000e-005 | 2.0000e-004 | 0.0000 | 1.6656 | 1.6656 | 6.0000e-005 | 2.4000e-004 | 1.7389 |
| Worker | 5.6000e-004 | 4.3000e-004 | 6.1100e-003 | 2.0000e-005 | 2.2800e-003 | 1.0000e-005 | 2.2900e-003 | 6.0000e-004 | 1.0000e-005 | 6.2000e-004 | 0.0000 | 1.7237 | 1.7237 | 4.0000e-005 | 4.0000e-005 | 1.7367 |
| **Total** | **6.4000e-004** | **3.8000e-003** | **7.2000e-003** | **4.0000e-005** | **2.8900e-003** | **3.0000e-005** | **2.9200e-003** | **7.8000e-004** | **3.0000e-005** | **8.2000e-004** | **0.0000** | **3.3893** | **3.3893** | **1.0000e-004** | **2.8000e-004** | **3.4755** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0226 | 0.1933 | 0.1582 | 5.2000e-004 | | 7.6100e-003 | 7.6100e-003 | | 7.0000e-003 | 7.0000e-003 | 0.0000 | 45.7043 | 45.7043 | 0.0148 | 0.0000 | 46.0739 |
| **Total** | **0.0226** | **0.1933** | **0.1582** | **5.2000e-004** | | **7.6100e-003** | **7.6100e-003** | | **7.0000e-003** | **7.0000e-003** | **0.0000** | **45.7043** | **45.7043** | **0.0148** | **0.0000** | **46.0739** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.2 Building 1 Utility Trenching - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 8.0000e-005 | 3.3700e-003 | 1.0900e-003 | 2.0000e-005 | 6.1000e-004 | 2.0000e-005 | 6.3000e-004 | 1.8000e-004 | 2.0000e-005 | 2.0000e-004 | 0.0000 | 1.6656 | 1.6656 | 6.0000e-005 | 2.4000e-004 | 1.7389 |
| Worker | 5.6000e-004 | 4.3000e-004 | 6.1100e-003 | 2.0000e-005 | 2.2800e-003 | 1.0000e-005 | 2.2900e-003 | 6.0000e-004 | 1.0000e-005 | 6.2000e-004 | 0.0000 | 1.7237 | 1.7237 | 4.0000e-005 | 4.0000e-005 | 1.7367 |
| **Total** | **6.4000e-004** | **3.8000e-003** | **7.2000e-003** | **4.0000e-005** | **2.8900e-003** | **3.0000e-005** | **2.9200e-003** | **7.8000e-004** | **3.0000e-005** | **8.2000e-004** | **0.0000** | **3.3893** | **3.3893** | **1.0000e-004** | **2.8000e-004** | **3.4755** |

## 3.3 Building 1 Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0931 | 0.8532 | 1.0373 | 1.7200e-003 | | 0.0389 | 0.0389 | | 0.0366 | 0.0366 | 0.0000 | 147.6902 | 147.6902 | 0.0355 | 0.0000 | 148.5769 |
| **Total** | **0.0931** | **0.8532** | **1.0373** | **1.7200e-003** | | **0.0389** | **0.0389** | | **0.0366** | **0.0366** | **0.0000** | **147.6902** | **147.6902** | **0.0355** | **0.0000** | **148.5769** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0126 | 0.5104 | 0.1659 | 2.5800e-003 | 0.0931 | 3.1100e-003 | 0.0962 | 0.0269 | 2.9700e-003 | 0.0298 | 0.0000 | 252.4670 | 252.4670 | 8.5800e-003 | 0.0365 | 263.5680 |
| Worker | 0.0867 | 0.0659 | 0.9459 | 2.9100e-003 | 0.3528 | 1.9000e-003 | 0.3547 | 0.0937 | 1.7500e-003 | 0.0955 | 0.0000 | 267.0026 | 267.0026 | 5.7700e-003 | 6.2700e-003 | 269.0168 |
| **Total** | **0.0993** | **0.5763** | **1.1118** | **5.4900e-003** | **0.4460** | **5.0100e-003** | **0.4510** | **0.1206** | **4.7200e-003** | **0.1253** | **0.0000** | **519.4696** | **519.4696** | **0.0144** | **0.0428** | **532.5847** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0931 | 0.8532 | 1.0373 | 1.7200e-003 | | 0.0389 | 0.0389 | | 0.0366 | 0.0366 | 0.0000 | 147.6900 | 147.6900 | 0.0355 | 0.0000 | 148.5767 |
| **Total** | **0.0931** | **0.8532** | **1.0373** | **1.7200e-003** | | **0.0389** | **0.0389** | | **0.0366** | **0.0366** | **0.0000** | **147.6900** | **147.6900** | **0.0355** | **0.0000** | **148.5767** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0126 | 0.5104 | 0.1659 | 2.5800e-003 | 0.0931 | 3.1100e-003 | 0.0962 | 0.0269 | 2.9700e-003 | 0.0298 | 0.0000 | 252.4670 | 252.4670 | 8.5800e-003 | 0.0365 | 263.5680 |
| Worker | 0.0867 | 0.0659 | 0.9459 | 2.9100e-003 | 0.3528 | 1.9000e-003 | 0.3547 | 0.0937 | 1.7500e-003 | 0.0955 | 0.0000 | 267.0026 | 267.0026 | 5.7700e-003 | 6.2700e-003 | 269.0168 |
| **Total** | **0.0993** | **0.5763** | **1.1118** | **5.4900e-003** | **0.4460** | **5.0100e-003** | **0.4510** | **0.1206** | **4.7200e-003** | **0.1253** | **0.0000** | **519.4696** | **519.4696** | **0.0144** | **0.0428** | **532.5847** |

## 3.3 Building 1 Construction - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0836 | 0.7653 | 0.9983 | 1.6600e-003 | | 0.0323 | 0.0323 | | 0.0304 | 0.0304 | 0.0000 | 142.8952 | 142.8952 | 0.0341 | 0.0000 | 143.7483 |
| **Total** | **0.0836** | **0.7653** | **0.9983** | **1.6600e-003** | | **0.0323** | **0.0323** | | **0.0304** | **0.0304** | **0.0000** | **142.8952** | **142.8952** | **0.0341** | **0.0000** | **143.7483** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0119 | 0.4912 | 0.1579 | 2.4500e-003 | 0.0901 | 3.0200e-003 | 0.0931 | 0.0260 | 2.8900e-003 | 0.0289 | 0.0000 | 239.7376 | 239.7376 | 8.3300e-003 | 0.0347 | 250.2950 |
| Worker | 0.0786 | 0.0572 | 0.8520 | 2.7200e-003 | 0.3413 | 1.7500e-003 | 0.3430 | 0.0906 | 1.6100e-003 | 0.0922 | 0.0000 | 249.4593 | 249.4593 | 5.0300e-003 | 5.6700e-003 | 251.2740 |
| **Total** | **0.0905** | **0.5484** | **1.0098** | **5.1700e-003** | **0.4314** | **4.7700e-003** | **0.4361** | **0.1166** | **4.5000e-003** | **0.1211** | **0.0000** | **489.1969** | **489.1969** | **0.0134** | **0.0404** | **501.5690** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0836 | 0.7653 | 0.9983 | 1.6600e-003 | | 0.0323 | 0.0323 | | 0.0304 | 0.0304 | 0.0000 | 142.8950 | 142.8950 | 0.0341 | 0.0000 | 143.7482 |
| **Total** | **0.0836** | **0.7653** | **0.9983** | **1.6600e-003** | | **0.0323** | **0.0323** | | **0.0304** | **0.0304** | **0.0000** | **142.8950** | **142.8950** | **0.0341** | **0.0000** | **143.7482** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0119 | 0.4912 | 0.1579 | 2.4500e-003 | 0.0901 | 3.0200e-003 | 0.0931 | 0.0260 | 2.8900e-003 | 0.0289 | 0.0000 | 239.7376 | 239.7376 | 8.3300e-003 | 0.0347 | 250.2950 |
| Worker | 0.0786 | 0.0572 | 0.8520 | 2.7200e-003 | 0.3413 | 1.7500e-003 | 0.3430 | 0.0906 | 1.6100e-003 | 0.0922 | 0.0000 | 249.4593 | 249.4593 | 5.0300e-003 | 5.6700e-003 | 251.2740 |
| **Total** | **0.0905** | **0.5484** | **1.0098** | **5.1700e-003** | **0.4314** | **4.7700e-003** | **0.4361** | **0.1166** | **4.5000e-003** | **0.1211** | **0.0000** | **489.1969** | **489.1969** | **0.0134** | **0.0404** | **501.5690** |

## 3.4 Building 1 Paving - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0252 | 0.2360 | 0.4009 | 6.3000e-004 | | 0.0115 | 0.0115 | | 0.0106 | 0.0106 | 0.0000 | 55.0530 | 55.0530 | 0.0178 | 0.0000 | 55.4981 |
| Paving | 0.0265 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0517** | **0.2360** | **0.4009** | **6.3000e-004** | | **0.0115** | **0.0115** | | **0.0106** | **0.0106** | **0.0000** | **55.0530** | **55.0530** | **0.0178** | **0.0000** | **55.4981** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.4 Building 1 Paving - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.3100e-003 | 9.5000e-004 | 0.0142 | 5.0000e-005 | 5.6900e-003 | 3.0000e-005 | 5.7200e-003 | 1.5100e-003 | 3.0000e-005 | 1.5400e-003 | 0.0000 | 4.1625 | 4.1625 | 8.0000e-005 | 9.0000e-005 | 4.1928 |
| **Total** | **1.3100e-003** | **9.5000e-004** | **0.0142** | **5.0000e-005** | **5.6900e-003** | **3.0000e-005** | **5.7200e-003** | **1.5100e-003** | **3.0000e-005** | **1.5400e-003** | **0.0000** | **4.1625** | **4.1625** | **8.0000e-005** | **9.0000e-005** | **4.1928** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0252 | 0.2360 | 0.4009 | 6.3000e-004 | | 0.0115 | 0.0115 | | 0.0106 | 0.0106 | 0.0000 | 55.0529 | 55.0529 | 0.0178 | 0.0000 | 55.4980 |
| Paving | 0.0265 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0517** | **0.2360** | **0.4009** | **6.3000e-004** | | **0.0115** | **0.0115** | | **0.0106** | **0.0106** | **0.0000** | **55.0529** | **55.0529** | **0.0178** | **0.0000** | **55.4980** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.4 Building 1 Paving - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.3100e-003 | 9.5000e-004 | 0.0142 | 5.0000e-005 | 5.6900e-003 | 3.0000e-005 | 5.7200e-003 | 1.5100e-003 | 3.0000e-005 | 1.5400e-003 | 0.0000 | 4.1625 | 4.1625 | 8.0000e-005 | 9.0000e-005 | 4.1928 |
| **Total** | **1.3100e-003** | **9.5000e-004** | **0.0142** | **5.0000e-005** | **5.6900e-003** | **3.0000e-005** | **5.7200e-003** | **1.5100e-003** | **3.0000e-005** | **1.5400e-003** | **0.0000** | **4.1625** | **4.1625** | **8.0000e-005** | **9.0000e-005** | **4.1928** |

## 3.5 Building 1 Architectural Coating - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.3517 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.7800e-003 | 0.0321 | 0.0507 | 8.0000e-005 | | 1.4400e-003 | 1.4400e-003 | | 1.4400e-003 | 1.4400e-003 | 0.0000 | 7.1491 | 7.1491 | 3.9000e-004 | 0.0000 | 7.1589 |
| **Total** | **0.3564** | **0.0321** | **0.0507** | **8.0000e-005** | | **1.4400e-003** | **1.4400e-003** | | **1.4400e-003** | **1.4400e-003** | **0.0000** | **7.1491** | **7.1491** | **3.9000e-004** | **0.0000** | **7.1589** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.5 Building 1 Architectural Coating - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0150 | 0.0109 | 0.1621 | 5.2000e-004 | 0.0649 | 3.3000e-004 | 0.0653 | 0.0172 | 3.1000e-004 | 0.0176 | 0.0000 | 47.4680 | 47.4680 | 9.6000e-004 | 1.0800e-003 | 47.8133 |
| **Total** | **0.0150** | **0.0109** | **0.1621** | **5.2000e-004** | **0.0649** | **3.3000e-004** | **0.0653** | **0.0172** | **3.1000e-004** | **0.0176** | **0.0000** | **47.4680** | **47.4680** | **9.6000e-004** | **1.0800e-003** | **47.8133** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.3517 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.7800e-003 | 0.0321 | 0.0507 | 8.0000e-005 | | 1.4400e-003 | 1.4400e-003 | | 1.4400e-003 | 1.4400e-003 | 0.0000 | 7.1491 | 7.1491 | 3.9000e-004 | 0.0000 | 7.1589 |
| **Total** | **0.3564** | **0.0321** | **0.0507** | **8.0000e-005** | | **1.4400e-003** | **1.4400e-003** | | **1.4400e-003** | **1.4400e-003** | **0.0000** | **7.1491** | **7.1491** | **3.9000e-004** | **0.0000** | **7.1589** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.5 Building 1 Architectural Coating - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0150 | 0.0109 | 0.1621 | 5.2000e-004 | 0.0649 | 3.3000e-004 | 0.0653 | 0.0172 | 3.1000e-004 | 0.0176 | 0.0000 | 47.4680 | 47.4680 | 9.6000e-004 | 1.0800e-003 | 47.8133 |
| **Total** | **0.0150** | **0.0109** | **0.1621** | **5.2000e-004** | **0.0649** | **3.3000e-004** | **0.0653** | **0.0172** | **3.1000e-004** | **0.0176** | **0.0000** | **47.4680** | **47.4680** | **9.6000e-004** | **1.0800e-003** | **47.8133** |

## 3.6 Rough Grading - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1058 | 0.0000 | 0.1058 | 0.0420 | 0.0000 | 0.0420 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0303 | 0.2906 | 0.2515 | 6.4000e-004 | | 0.0118 | 0.0118 | | 0.0108 | 0.0108 | 0.0000 | 56.3797 | 56.3797 | 0.0182 | 0.0000 | 56.8355 |
| **Total** | **0.0303** | **0.2906** | **0.2515** | **6.4000e-004** | **0.1058** | **0.0118** | **0.1176** | **0.0420** | **0.0108** | **0.0528** | **0.0000** | **56.3797** | **56.3797** | **0.0182** | **0.0000** | **56.8355** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.6 Rough Grading - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.8000e-004 | 0.0116 | 3.7000e-003 | 6.0000e-005 | 2.1400e-003 | 7.0000e-005 | 2.2100e-003 | 6.2000e-004 | 7.0000e-005 | 6.9000e-004 | 0.0000 | 5.5918 | 5.5918 | 2.0000e-004 | 8.1000e-004 | 5.8384 |
| Worker | 6.9000e-004 | 4.8000e-004 | 7.4400e-003 | 2.0000e-005 | 3.1800e-003 | 2.0000e-005 | 3.1900e-003 | 8.4000e-004 | 1.0000e-005 | 8.6000e-004 | 0.0000 | 2.2497 | 2.2497 | 4.0000e-005 | 5.0000e-005 | 2.2656 |
| **Total** | **9.7000e-004** | **0.0121** | **0.0111** | **8.0000e-005** | **5.3200e-003** | **9.0000e-005** | **5.4000e-003** | **1.4600e-003** | **8.0000e-005** | **1.5500e-003** | **0.0000** | **7.8415** | **7.8415** | **2.4000e-004** | **8.6000e-004** | **8.1040** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1058 | 0.0000 | 0.1058 | 0.0420 | 0.0000 | 0.0420 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0303 | 0.2906 | 0.2515 | 6.4000e-004 | | 0.0118 | 0.0118 | | 0.0108 | 0.0108 | 0.0000 | 56.3796 | 56.3796 | 0.0182 | 0.0000 | 56.8355 |
| **Total** | **0.0303** | **0.2906** | **0.2515** | **6.4000e-004** | **0.1058** | **0.0118** | **0.1176** | **0.0420** | **0.0108** | **0.0528** | **0.0000** | **56.3796** | **56.3796** | **0.0182** | **0.0000** | **56.8355** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.6 Rough Grading - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.8000e-004 | 0.0116 | 3.7000e-003 | 6.0000e-005 | 2.1400e-003 | 7.0000e-005 | 2.2100e-003 | 6.2000e-004 | 7.0000e-005 | 6.9000e-004 | 0.0000 | 5.5918 | 5.5918 | 2.0000e-004 | 8.1000e-004 | 5.8384 |
| Worker | 6.9000e-004 | 4.8000e-004 | 7.4400e-003 | 2.0000e-005 | 3.1800e-003 | 2.0000e-005 | 3.1900e-003 | 8.4000e-004 | 1.0000e-005 | 8.6000e-004 | 0.0000 | 2.2497 | 2.2497 | 4.0000e-005 | 5.0000e-005 | 2.2656 |
| **Total** | **9.7000e-004** | **0.0121** | **0.0111** | **8.0000e-005** | **5.3200e-003** | **9.0000e-005** | **5.4000e-003** | **1.4600e-003** | **8.0000e-005** | **1.5500e-003** | **0.0000** | **7.8415** | **7.8415** | **2.4000e-004** | **8.6000e-004** | **8.1040** |

## 3.7 Buildings 2 and 3 Utility Trenching - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0172 | 0.1430 | 0.1558 | 4.3000e-004 | | 5.8800e-003 | 5.8800e-003 | | 5.4100e-003 | 5.4100e-003 | 0.0000 | 37.5308 | 37.5308 | 0.0121 | 0.0000 | 37.8343 |
| **Total** | **0.0172** | **0.1430** | **0.1558** | **4.3000e-004** | | **5.8800e-003** | **5.8800e-003** | | **5.4100e-003** | **5.4100e-003** | **0.0000** | **37.5308** | **37.5308** | **0.0121** | **0.0000** | **37.8343** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.7 Buildings 2 and 3 Utility Trenching - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 8.0000e-005 | 3.4800e-003 | 1.1100e-003 | 2.0000e-005 | 6.4000e-004 | 2.0000e-005 | 6.6000e-004 | 1.9000e-004 | 2.0000e-005 | 2.1000e-004 | 0.0000 | 1.6775 | 1.6775 | 6.0000e-005 | 2.4000e-004 | 1.7515 |
| Worker | 5.2000e-004 | 3.6000e-004 | 5.5800e-003 | 2.0000e-005 | 2.3800e-003 | 1.0000e-005 | 2.3900e-003 | 6.3000e-004 | 1.0000e-005 | 6.4000e-004 | 0.0000 | 1.6873 | 1.6873 | 3.0000e-005 | 4.0000e-005 | 1.6992 |
| **Total** | **6.0000e-004** | **3.8400e-003** | **6.6900e-003** | **4.0000e-005** | **3.0200e-003** | **3.0000e-005** | **3.0500e-003** | **8.2000e-004** | **3.0000e-005** | **8.5000e-004** | **0.0000** | **3.3648** | **3.3648** | **9.0000e-005** | **2.8000e-004** | **3.4507** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0172 | 0.1430 | 0.1558 | 4.3000e-004 | | 5.8800e-003 | 5.8800e-003 | | 5.4100e-003 | 5.4100e-003 | 0.0000 | 37.5308 | 37.5308 | 0.0121 | 0.0000 | 37.8342 |
| **Total** | **0.0172** | **0.1430** | **0.1558** | **4.3000e-004** | | **5.8800e-003** | **5.8800e-003** | | **5.4100e-003** | **5.4100e-003** | **0.0000** | **37.5308** | **37.5308** | **0.0121** | **0.0000** | **37.8342** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.7 Buildings 2 and 3 Utility Trenching - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 8.0000e-005 | 3.4800e-003 | 1.1100e-003 | 2.0000e-005 | 6.4000e-004 | 2.0000e-005 | 6.6000e-004 | 1.9000e-004 | 2.0000e-005 | 2.1000e-004 | 0.0000 | 1.6775 | 1.6775 | 6.0000e-005 | 2.4000e-004 | 1.7515 |
| Worker | 5.2000e-004 | 3.6000e-004 | 5.5800e-003 | 2.0000e-005 | 2.3800e-003 | 1.0000e-005 | 2.3900e-003 | 6.3000e-004 | 1.0000e-005 | 6.4000e-004 | 0.0000 | 1.6873 | 1.6873 | 3.0000e-005 | 4.0000e-005 | 1.6992 |
| **Total** | **6.0000e-004** | **3.8400e-003** | **6.6900e-003** | **4.0000e-005** | **3.0200e-003** | **3.0000e-005** | **3.0500e-003** | **8.2000e-004** | **3.0000e-005** | **8.5000e-004** | **0.0000** | **3.3648** | **3.3648** | **9.0000e-005** | **2.8000e-004** | **3.4507** |

## 3.8 Buildings 2 and 3 Construction - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0533 | 0.4863 | 0.6273 | 1.0500e-003 | | 0.0206 | 0.0206 | | 0.0194 | 0.0194 | 0.0000 | 90.4486 | 90.4486 | 0.0213 | 0.0000 | 90.9801 |
| **Total** | **0.0533** | **0.4863** | **0.6273** | **1.0500e-003** | | **0.0206** | **0.0206** | | **0.0194** | **0.0194** | **0.0000** | **90.4486** | **90.4486** | **0.0213** | **0.0000** | **90.9801** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.6700e-003 | 0.3222 | 0.1030 | 1.5900e-003 | 0.0596 | 1.9900e-003 | 0.0615 | 0.0172 | 1.9000e-003 | 0.0191 | 0.0000 | 155.5006 | 155.5006 | 5.5200e-003 | 0.0226 | 162.3577 |
| Worker | 0.0490 | 0.0343 | 0.5286 | 1.7400e-003 | 0.2256 | 1.1000e-003 | 0.2267 | 0.0599 | 1.0100e-003 | 0.0609 | 0.0000 | 159.8390 | 159.8390 | 3.0200e-003 | 3.5300e-003 | 160.9664 |
| **Total** | **0.0567** | **0.3565** | **0.6316** | **3.3300e-003** | **0.2851** | **3.0900e-003** | **0.2882** | **0.0771** | **2.9100e-003** | **0.0800** | **0.0000** | **315.3396** | **315.3396** | **8.5400e-003** | **0.0261** | **323.3240** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0533 | 0.4863 | 0.6273 | 1.0500e-003 | | 0.0206 | 0.0206 | | 0.0194 | 0.0194 | 0.0000 | 90.4485 | 90.4485 | 0.0213 | 0.0000 | 90.9800 |
| **Total** | **0.0533** | **0.4863** | **0.6273** | **1.0500e-003** | | **0.0206** | **0.0206** | | **0.0194** | **0.0194** | **0.0000** | **90.4485** | **90.4485** | **0.0213** | **0.0000** | **90.9800** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.6700e-003 | 0.3222 | 0.1030 | 1.5900e-003 | 0.0596 | 1.9900e-003 | 0.0615 | 0.0172 | 1.9000e-003 | 0.0191 | 0.0000 | 155.5006 | 155.5006 | 5.5200e-003 | 0.0226 | 162.3577 |
| Worker | 0.0490 | 0.0343 | 0.5286 | 1.7400e-003 | 0.2256 | 1.1000e-003 | 0.2267 | 0.0599 | 1.0100e-003 | 0.0609 | 0.0000 | 159.8390 | 159.8390 | 3.0200e-003 | 3.5300e-003 | 160.9664 |
| **Total** | **0.0567** | **0.3565** | **0.6316** | **3.3300e-003** | **0.2851** | **3.0900e-003** | **0.2882** | **0.0771** | **2.9100e-003** | **0.0800** | **0.0000** | **315.3396** | **315.3396** | **8.5400e-003** | **0.0261** | **323.3240** |

## 3.8 Buildings 2 and 3 Construction - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1101 | 1.0038 | 1.2948 | 2.1700e-003 | | 0.0425 | 0.0425 | | 0.0400 | 0.0400 | 0.0000 | 186.6952 | 186.6952 | 0.0439 | 0.0000 | 187.7923 |
| **Total** | **0.1101** | **1.0038** | **1.2948** | **2.1700e-003** | | **0.0425** | **0.0425** | | **0.0400** | **0.0400** | **0.0000** | **186.6952** | **186.6952** | **0.0439** | **0.0000** | **187.7923** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0155 | 0.6599 | 0.2103 | 3.2100e-003 | 0.1229 | 4.0900e-003 | 0.1270 | 0.0355 | 3.9100e-003 | 0.0394 | 0.0000 | 314.5653 | 314.5653 | 0.0114 | 0.0457 | 328.4572 |
| Worker | 0.0957 | 0.0646 | 1.0303 | 3.5000e-003 | 0.4656 | 2.1200e-003 | 0.4678 | 0.1237 | 1.9600e-003 | 0.1256 | 0.0000 | 320.6486 | 320.6486 | 5.6800e-003 | 6.9100e-003 | 322.8505 |
| **Total** | **0.1112** | **0.7245** | **1.2405** | **6.7100e-003** | **0.5885** | **6.2100e-003** | **0.5948** | **0.1591** | **5.8700e-003** | **0.1650** | **0.0000** | **635.2140** | **635.2140** | **0.0171** | **0.0526** | **651.3077** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1101 | 1.0038 | 1.2948 | 2.1700e-003 | | 0.0425 | 0.0425 | | 0.0400 | 0.0400 | 0.0000 | 186.6949 | 186.6949 | 0.0439 | 0.0000 | 187.7921 |
| **Total** | **0.1101** | **1.0038** | **1.2948** | **2.1700e-003** | | **0.0425** | **0.0425** | | **0.0400** | **0.0400** | **0.0000** | **186.6949** | **186.6949** | **0.0439** | **0.0000** | **187.7921** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0155 | 0.6599 | 0.2103 | 3.2100e-003 | 0.1229 | 4.0900e-003 | 0.1270 | 0.0355 | 3.9100e-003 | 0.0394 | 0.0000 | 314.5653 | 314.5653 | 0.0114 | 0.0457 | 328.4572 |
| Worker | 0.0957 | 0.0646 | 1.0303 | 3.5000e-003 | 0.4656 | 2.1200e-003 | 0.4678 | 0.1237 | 1.9600e-003 | 0.1256 | 0.0000 | 320.6486 | 320.6486 | 5.6800e-003 | 6.9100e-003 | 322.8505 |
| **Total** | **0.1112** | **0.7245** | **1.2405** | **6.7100e-003** | **0.5885** | **6.2100e-003** | **0.5948** | **0.1591** | **5.8700e-003** | **0.1650** | **0.0000** | **635.2140** | **635.2140** | **0.0171** | **0.0526** | **651.3077** |

## 3.9 Buildings 2 and 3 Architectural Coating - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 4.3859 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.7000e-003 | 0.0315 | 0.0498 | 8.0000e-005 | | 1.4200e-003 | 1.4200e-003 | | 1.4200e-003 | 1.4200e-003 | 0.0000 | 7.0215 | 7.0215 | 3.8000e-004 | 0.0000 | 7.0310 |
| **Total** | **4.3906** | **0.0315** | **0.0498** | **8.0000e-005** | | **1.4200e-003** | **1.4200e-003** | | **1.4200e-003** | **1.4200e-003** | **0.0000** | **7.0215** | **7.0215** | **3.8000e-004** | **0.0000** | **7.0310** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.9 Buildings 2 and 3 Architectural Coating - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0131 | 8.8500e-003 | 0.1411 | 4.8000e-004 | 0.0638 | 2.9000e-004 | 0.0641 | 0.0169 | 2.7000e-004 | 0.0172 | 0.0000 | 43.9199 | 43.9199 | 7.8000e-004 | 9.5000e-004 | 44.2215 |
| **Total** | **0.0131** | **8.8500e-003** | **0.1411** | **4.8000e-004** | **0.0638** | **2.9000e-004** | **0.0641** | **0.0169** | **2.7000e-004** | **0.0172** | **0.0000** | **43.9199** | **43.9199** | **7.8000e-004** | **9.5000e-004** | **44.2215** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 4.3859 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.7000e-003 | 0.0315 | 0.0498 | 8.0000e-005 | | 1.4200e-003 | 1.4200e-003 | | 1.4200e-003 | 1.4200e-003 | 0.0000 | 7.0214 | 7.0214 | 3.8000e-004 | 0.0000 | 7.0310 |
| **Total** | **4.3906** | **0.0315** | **0.0498** | **8.0000e-005** | | **1.4200e-003** | **1.4200e-003** | | **1.4200e-003** | **1.4200e-003** | **0.0000** | **7.0214** | **7.0214** | **3.8000e-004** | **0.0000** | **7.0310** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.9 Buildings 2 and 3 Architectural Coating - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0131 | 8.8500e-003 | 0.1411 | 4.8000e-004 | 0.0638 | 2.9000e-004 | 0.0641 | 0.0169 | 2.7000e-004 | 0.0172 | 0.0000 | 43.9199 | 43.9199 | 7.8000e-004 | 9.5000e-004 | 44.2215 |
| **Total** | **0.0131** | **8.8500e-003** | **0.1411** | **4.8000e-004** | **0.0638** | **2.9000e-004** | **0.0641** | **0.0169** | **2.7000e-004** | **0.0172** | **0.0000** | **43.9199** | **43.9199** | **7.8000e-004** | **9.5000e-004** | **44.2215** |

## 3.10 Fine Grading - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1012 | 0.0000 | 0.1012 | 0.0402 | 0.0000 | 0.0402 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0319 | 0.3074 | 0.2896 | 6.8000e-004 | | 0.0124 | 0.0124 | | 0.0114 | 0.0114 | 0.0000 | 59.9568 | 59.9568 | 0.0194 | 0.0000 | 60.4416 |
| **Total** | **0.0319** | **0.3074** | **0.2896** | **6.8000e-004** | **0.1012** | **0.0124** | **0.1137** | **0.0402** | **0.0114** | **0.0516** | **0.0000** | **59.9568** | **59.9568** | **0.0194** | **0.0000** | **60.4416** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.10 Fine Grading - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.6000e-004 | 0.0110 | 3.5000e-003 | 5.0000e-005 | 2.0500e-003 | 7.0000e-005 | 2.1200e-003 | 5.9000e-004 | 7.0000e-005 | 6.6000e-004 | 0.0000 | 5.2420 | 5.2420 | 1.9000e-004 | 7.6000e-004 | 5.4735 |
| Worker | 6.2000e-004 | 4.2000e-004 | 6.7200e-003 | 2.0000e-005 | 3.0400e-003 | 1.0000e-005 | 3.0500e-003 | 8.1000e-004 | 1.0000e-005 | 8.2000e-004 | 0.0000 | 2.0914 | 2.0914 | 4.0000e-005 | 5.0000e-005 | 2.1058 |
| **Total** | **8.8000e-004** | **0.0114** | **0.0102** | **7.0000e-005** | **5.0900e-003** | **8.0000e-005** | **5.1700e-003** | **1.4000e-003** | **8.0000e-005** | **1.4800e-003** | **0.0000** | **7.3334** | **7.3334** | **2.3000e-004** | **8.1000e-004** | **7.5793** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1012 | 0.0000 | 0.1012 | 0.0402 | 0.0000 | 0.0402 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0319 | 0.3074 | 0.2896 | 6.8000e-004 | | 0.0124 | 0.0124 | | 0.0114 | 0.0114 | 0.0000 | 59.9568 | 59.9568 | 0.0194 | 0.0000 | 60.4415 |
| **Total** | **0.0319** | **0.3074** | **0.2896** | **6.8000e-004** | **0.1012** | **0.0124** | **0.1137** | **0.0402** | **0.0114** | **0.0516** | **0.0000** | **59.9568** | **59.9568** | **0.0194** | **0.0000** | **60.4415** |

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## 3.10 Fine Grading - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.6000e-004 | 0.0110 | 3.5000e-003 | 5.0000e-005 | 2.0500e-003 | 7.0000e-005 | 2.1200e-003 | 5.9000e-004 | 7.0000e-005 | 6.6000e-004 | 0.0000 | 5.2420 | 5.2420 | 1.9000e-004 | 7.6000e-004 | 5.4735 |
| Worker | 6.2000e-004 | 4.2000e-004 | 6.7200e-003 | 2.0000e-005 | 3.0400e-003 | 1.0000e-005 | 3.0500e-003 | 8.1000e-004 | 1.0000e-005 | 8.2000e-004 | 0.0000 | 2.0914 | 2.0914 | 4.0000e-005 | 5.0000e-005 | 2.1058 |
| **Total** | **8.8000e-004** | **0.0114** | **0.0102** | **7.0000e-005** | **5.0900e-003** | **8.0000e-005** | **5.1700e-003** | **1.4000e-003** | **8.0000e-005** | **1.4800e-003** | **0.0000** | **7.3334** | **7.3334** | **2.3000e-004** | **8.1000e-004** | **7.5793** |

## 3.11 Finishing/Landscaping - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0162 | 0.1413 | 0.1689 | 3.9000e-004 | | 5.9400e-003 | 5.9400e-003 | | 5.4600e-003 | 5.4600e-003 | 0.0000 | 34.1392 | 34.1392 | 0.0110 | 0.0000 | 34.4152 |
| **Total** | **0.0162** | **0.1413** | **0.1689** | **3.9000e-004** | | **5.9400e-003** | **5.9400e-003** | | **5.4600e-003** | **5.4600e-003** | **0.0000** | **34.1392** | **34.1392** | **0.0110** | **0.0000** | **34.4152** |

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## 3.11 Finishing/Landscaping - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.7000e-004 | 3.2000e-004 | 5.0400e-003 | 2.0000e-005 | 2.2800e-003 | 1.0000e-005 | 2.2900e-003 | 6.0000e-004 | 1.0000e-005 | 6.1000e-004 | 0.0000 | 1.5686 | 1.5686 | 3.0000e-005 | 3.0000e-005 | 1.5793 |
| **Total** | **4.7000e-004** | **3.2000e-004** | **5.0400e-003** | **2.0000e-005** | **2.2800e-003** | **1.0000e-005** | **2.2900e-003** | **6.0000e-004** | **1.0000e-005** | **6.1000e-004** | **0.0000** | **1.5686** | **1.5686** | **3.0000e-005** | **3.0000e-005** | **1.5793** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0162 | 0.1413 | 0.1689 | 3.9000e-004 | | 5.9400e-003 | 5.9400e-003 | | 5.4600e-003 | 5.4600e-003 | 0.0000 | 34.1391 | 34.1391 | 0.0110 | 0.0000 | 34.4152 |
| **Total** | **0.0162** | **0.1413** | **0.1689** | **3.9000e-004** | | **5.9400e-003** | **5.9400e-003** | | **5.4600e-003** | **5.4600e-003** | **0.0000** | **34.1391** | **34.1391** | **0.0110** | **0.0000** | **34.4152** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

### 3.11 Finishing/Landscaping - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.7000e-004 | 3.2000e-004 | 5.0400e-003 | 2.0000e-005 | 2.2800e-003 | 1.0000e-005 | 2.2900e-003 | 6.0000e-004 | 1.0000e-005 | 6.1000e-004 | 0.0000 | 1.5686 | 1.5686 | 3.0000e-005 | 3.0000e-005 | 1.5793 |
| **Total** | **4.7000e-004** | **3.2000e-004** | **5.0400e-003** | **2.0000e-005** | **2.2800e-003** | **1.0000e-005** | **2.2900e-003** | **6.0000e-004** | **1.0000e-005** | **6.1000e-004** | **0.0000** | **1.5686** | **1.5686** | **3.0000e-005** | **3.0000e-005** | **1.5793** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 1.0766 | 1.2873 | 11.5814 | 0.0275 | 3.3174 | 0.0187 | 3.3361 | 0.8854 | 0.0174 | 0.9028 | 0.0000 | 2,548.7647 | 2,548.7647 | 0.1568 | 0.1085 | 2,585.0111 |
| Unmitigated | 1.0766 | 1.2873 | 11.5814 | 0.0275 | 3.3174 | 0.0187 | 3.3361 | 0.8854 | 0.0174 | 0.9028 | 0.0000 | 2,548.7647 | 2,548.7647 | 0.1568 | 0.1085 | 2,585.0111 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Unrefrigerated Warehouse-No Rail | 2,055.88 | 2,055.88 | 2055.88 | 8,810,920 | 8,810,920 |
| Total | 2,055.88 | 2,055.88 | 2,055.88 | 8,810,920 | 8,810,920 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Unrefrigerated Warehouse-No | 16.60 | 8.40 | 6.90 | 59.00 | 0.00 | 41.00 | 92 | 5 | 3 |

## 4.4 Fleet Mix

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 0.539139 | 0.063841 | 0.187327 | 0.126709 | 0.023805 | 0.006751 | 0.012629 | 0.009091 | 0.000821 | 0.000480 | 0.025164 | 0.000758 | 0.003487 |
| Parking Lot | 0.539139 | 0.063841 | 0.187327 | 0.126709 | 0.023805 | 0.006751 | 0.012629 | 0.009091 | 0.000821 | 0.000480 | 0.025164 | 0.000758 | 0.003487 |
| Unrefrigerated Warehouse-No Rail | 0.539139 | 0.063841 | 0.187327 | 0.126709 | 0.023805 | 0.006751 | 0.012629 | 0.009091 | 0.000821 | 0.000480 | 0.025164 | 0.000758 | 0.003487 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 677.7364 | 677.7364 | 0.0572 | 6.9300e-003 | 681.2327 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 677.7364 | 677.7364 | 0.0572 | 6.9300e-003 | 681.2327 |
| NaturalGas Mitigated | 4.6300e-003 | 0.0421 | 0.0353 | 2.5000e-004 | | 3.2000e-003 | 3.2000e-003 | | 3.2000e-003 | 3.2000e-003 | 0.0000 | 45.7917 | 45.7917 | 8.8000e-004 | 8.4000e-004 | 46.0638 |
| NaturalGas Unmitigated | 4.6300e-003 | 0.0421 | 0.0353 | 2.5000e-004 | | 3.2000e-003 | 3.2000e-003 | | 3.2000e-003 | 3.2000e-003 | 0.0000 | 45.7917 | 45.7917 | 8.8000e-004 | 8.4000e-004 | 46.0638 |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 858105 | 4.6300e-003 | 0.0421 | 0.0353 | 2.5000e-004 | | 3.2000e-003 | 3.2000e-003 | | 3.2000e-003 | 3.2000e-003 | 0.0000 | 45.7917 | 45.7917 | 8.8000e-004 | 8.4000e-004 | 46.0638 |
| **Total** | | **4.6300e-003** | **0.0421** | **0.0353** | **2.5000e-004** | | **3.2000e-003** | **3.2000e-003** | | **3.2000e-003** | **3.2000e-003** | **0.0000** | **45.7917** | **45.7917** | **8.8000e-004** | **8.4000e-004** | **46.0638** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 858105 | 4.6300e-003 | 0.0421 | 0.0353 | 2.5000e-004 | | 3.2000e-003 | 3.2000e-003 | | 3.2000e-003 | 3.2000e-003 | 0.0000 | 45.7917 | 45.7917 | 8.8000e-004 | 8.4000e-004 | 46.0638 |
| **Total** | | **4.6300e-003** | **0.0421** | **0.0353** | **2.5000e-004** | | **3.2000e-003** | **3.2000e-003** | | **3.2000e-003** | **3.2000e-003** | **0.0000** | **45.7917** | **45.7917** | **8.8000e-004** | **8.4000e-004** | **46.0638** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 3.82156e+006 | 677.7364 | 0.0572 | 6.9300e-003 | 681.2327 |
| **Total** | | **677.7364** | **0.0572** | **6.9300e-003** | **681.2327** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 3.82156e+006 | 677.7364 | 0.0572 | 6.9300e-003 | 681.2327 |
| **Total** | | **677.7364** | **0.0572** | **6.9300e-003** | **681.2327** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 4.0952 | 2.8000e-004 | 0.0304 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0593 | 0.0593 | 1.5000e-004 | 0.0000 | 0.0632 |
| Unmitigated | 4.0952 | 2.8000e-004 | 0.0304 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0593 | 0.0593 | 1.5000e-004 | 0.0000 | 0.0632 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.4668 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 3.6256 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.8000e-003 | 2.8000e-004 | 0.0304 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0593 | 0.0593 | 1.5000e-004 | 0.0000 | 0.0632 |
| **Total** | **4.0952** | **2.8000e-004** | **0.0304** | **0.0000** | | **1.1000e-004** | **1.1000e-004** | | **1.1000e-004** | **1.1000e-004** | **0.0000** | **0.0593** | **0.0593** | **1.5000e-004** | **0.0000** | **0.0632** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.4668 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 3.6256 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.8000e-003 | 2.8000e-004 | 0.0304 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0593 | 0.0593 | 1.5000e-004 | 0.0000 | 0.0632 |
| **Total** | **4.0952** | **2.8000e-004** | **0.0304** | **0.0000** | | **1.1000e-004** | **1.1000e-004** | | **1.1000e-004** | **1.1000e-004** | **0.0000** | **0.0593** | **0.0593** | **1.5000e-004** | **0.0000** | **0.0632** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 606.1565 | 7.5652 | 0.1830 | 849.8266 |
| Unmitigated | 606.1565 | 7.5652 | 0.1830 | 849.8266 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 230.787 / 0 | 606.1565 | 7.5652 | 0.1830 | 849.8266 |
| **Total** | | **606.1565** | **7.5652** | **0.1830** | **849.8266** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 230.787 / 0 | 606.1565 | 7.5652 | 0.1830 | 849.8266 |
| **Total** | | **606.1565** | **7.5652** | **0.1830** | **849.8266** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 190.4299 | 11.2541 | 0.0000 | 471.7820 |
| Unmitigated | 190.4299 | 11.2541 | 0.0000 | 471.7820 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 938.12 | 190.4299 | 11.2541 | 0.0000 | 471.7820 |
| **Total** | | **190.4299** | **11.2541** | **0.0000** | **471.7820** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 938.12 | 190.4299 | 11.2541 | 0.0000 | 471.7820 |
| **Total** | | **190.4299** | **11.2541** | **0.0000** | **471.7820** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 11.0 Vegetation

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

# Irwindale Gateway Project (Option 1)

**South Coast AQMD Air District, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 998.00 | 1000sqft | 22.91 | 997,796.00 | 0 |
| Other Non-Asphalt Surfaces | 310.00 | 1000sqft | 7.12 | 310,164.00 | 0 |
| Other Non-Asphalt Surfaces | 201.00 | 1000sqft | 4.61 | 0.00 | 0 |
| Parking Lot | 881.00 | 1000sqft | 20.22 | 0.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 31 |
| **Climate Zone** | 9 | | | **Operational Year** | 2028 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 390.98 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with DEIR's model.

Land Use - Consistent with DEIR's model.

Construction Phase - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Trips and VMT - Consistent with DEIR's model.

Grading - Consistent with DEIR's model.

Architectural Coating - Consistent with DEIR's model.

Vehicle Trips - Consistent with DEIR's model.

Area Coating - Consistent with DEIR's model.

Water And Wastewater - See comment on: "Unsubstantiated Changes to Operational Wastewater Values".

Construction Off-road Equipment Mitigation - See comment on: "Incorrect Application of Tier 4 Final Mitigation".

Fleet Mix - See comment: "Unsubstantiated Changes to Fleet Mix Values".

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 498,898.00 | 37,055.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 498,898.00 | 461,843.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 1,496,694.00 | 111,165.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 1,496,694.00 | 1,385,529.00 |
| tblArchitecturalCoating | ConstArea_Parking | 18,610.00 | 3,516.00 |
| tblArchitecturalCoating | ConstArea_Parking | 18,610.00 | 45,120.00 |
| tblArchitecturalCoating | EF_Residential_Exterior | 50.00 | 0.00 |
| tblArchitecturalCoating | EF_Residential_Exterior | 50.00 | 0.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 50.00 | 0.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 50.00 | 0.00 |
| tblConstructionPhase | NumDays | 75.00 | 56.00 |
| tblConstructionPhase | NumDays | 75.00 | 55.00 |
| tblConstructionPhase | NumDays | 1,110.00 | 240.00 |
| tblConstructionPhase | NumDays | 1,110.00 | 239.00 |
| tblConstructionPhase | NumDays | 110.00 | 23.00 |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 110.00 | 22.00 |
| tblConstructionPhase | NumDays | 75.00 | 55.00 |
| tblLandUse | LandUseSquareFeet | 998,000.00 | 997,796.00 |
| tblLandUse | LandUseSquareFeet | 201,000.00 | 0.00 |
| tblLandUse | LandUseSquareFeet | 310,000.00 | 310,164.00 |
| tblLandUse | LandUseSquareFeet | 881,000.00 | 0.00 |
| tblOffRoadEquipment | HorsePower | 231.00 | 212.00 |
| tblOffRoadEquipment | HorsePower | 402.00 | 158.00 |
| tblOffRoadEquipment | LoadFactor | 0.29 | 0.43 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 214.00 | 164.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 20.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 214.00 | 164.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 20.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | |
|---|---|---|---|
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 15.00 |
| tblTripsAndVMT | WorkerTripNumber | 549.00 | 419.00 |
| tblTripsAndVMT | WorkerTripNumber | 110.00 | 168.00 |
| tblTripsAndVMT | WorkerTripNumber | 15.00 | 20.00 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 15.00 |
| tblTripsAndVMT | WorkerTripNumber | 549.00 | 419.00 |
| tblTripsAndVMT | WorkerTripNumber | 110.00 | 168.00 |
| tblVehicleTrips | ST_TR | 1.74 | 2.06 |
| tblVehicleTrips | SU_TR | 1.74 | 2.06 |
| tblVehicleTrips | WD_TR | 1.74 | 2.06 |

## 2.0 Emissions Summary

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2024 | 5.2884 | 40.8076 | 51.5466 | 0.1710 | 7.7110 | 1.4147 | 9.1258 | 2.0811 | 1.3162 | 3.3973 | 0.0000 | 17,201.7182 | 17,201.7182 | 2.3907 | 0.7923 | 17,497.5950 |
| 2025 | 18.1731 | 31.8583 | 58.3826 | 0.1647 | 10.0172 | 1.1116 | 11.1287 | 2.6914 | 1.0395 | 3.7309 | 0.0000 | 16,636.7203 | 16,636.7203 | 1.6568 | 0.7892 | 16,913.3037 |
| 2026 | 7.1155 | 60.1314 | 70.3972 | 0.2177 | 17.3850 | 2.1511 | 19.5361 | 5.8639 | 1.9921 | 7.8560 | 0.0000 | 21,765.7485 | 21,765.7485 | 3.7850 | 0.8378 | 22,110.0195 |
| 2027 | 167.4064 | 64.2116 | 83.0070 | 0.2395 | 19.6911 | 2.3460 | 22.0371 | 6.4741 | 2.1754 | 8.6496 | 0.0000 | 23,912.7352 | 23,912.7352 | 3.9556 | 0.8311 | 24,259.2962 |
| **Maximum** | **167.4064** | **64.2116** | **83.0070** | **0.2395** | **19.6911** | **2.3460** | **22.0371** | **6.4741** | **2.1754** | **8.6496** | **0.0000** | **23,912.7352** | **23,912.7352** | **3.9556** | **0.8378** | **24,259.2962** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2024 | 5.2884 | 40.8076 | 51.5466 | 0.1710 | 7.7110 | 1.4147 | 9.1258 | 2.0811 | 1.3162 | 3.3973 | 0.0000 | 17,201.7182 | 17,201.7182 | 2.3907 | 0.7923 | 17,497.5950 |
| 2025 | 18.1731 | 31.8583 | 58.3826 | 0.1647 | 10.0172 | 1.1116 | 11.1287 | 2.6914 | 1.0395 | 3.7309 | 0.0000 | 16,636.7203 | 16,636.7203 | 1.6568 | 0.7892 | 16,913.3037 |
| 2026 | 7.1155 | 60.1314 | 70.3972 | 0.2177 | 17.3850 | 2.1511 | 19.5361 | 5.8639 | 1.9921 | 7.8560 | 0.0000 | 21,765.7485 | 21,765.7485 | 3.7850 | 0.8378 | 22,110.0195 |
| 2027 | 167.4064 | 64.2116 | 83.0070 | 0.2395 | 19.6911 | 2.3460 | 22.0371 | 6.4741 | 2.1754 | 8.6496 | 0.0000 | 23,912.7352 | 23,912.7352 | 3.9556 | 0.8311 | 24,259.2961 |
| **Maximum** | **167.4064** | **64.2116** | **83.0070** | **0.2395** | **19.6911** | **2.3460** | **22.0371** | **6.4741** | **2.1754** | **8.6496** | **0.0000** | **23,912.7352** | **23,912.7352** | **3.9556** | **0.8378** | **24,259.2961** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 22.4464 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |
| Energy | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |
| Mobile | 6.1779 | 6.4985 | 65.2678 | 0.1569 | 18.5671 | 0.1029 | 18.6700 | 4.9481 | 0.0958 | 5.0439 | | 16,007.6746 | 16,007.6746 | 0.9333 | 0.6300 | 16,218.7320 |
| **Total** | **28.6496** | **6.7312** | **65.7048** | **0.1583** | **18.5671** | **0.1213** | **18.6884** | **4.9481** | **0.1142** | **5.0623** | | **16,284.7825** | **16,284.7825** | **0.9399** | **0.6350** | **16,497.5176** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 22.4464 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |
| Energy | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |
| Mobile | 6.1779 | 6.4985 | 65.2678 | 0.1569 | 18.5671 | 0.1029 | 18.6700 | 4.9481 | 0.0958 | 5.0439 | | 16,007.6746 | 16,007.6746 | 0.9333 | 0.6300 | 16,218.7320 |
| **Total** | **28.6496** | **6.7312** | **65.7048** | **0.1583** | **18.5671** | **0.1213** | **18.6884** | **4.9481** | **0.1142** | **5.0623** | | **16,284.7825** | **16,284.7825** | **0.9399** | **0.6350** | **16,497.5176** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Building 1 Utility Trenching | Trenching | 7/15/2024 | 8/13/2024 | 5 | 22 | |
| 2 | Building 1 Construction | Building Construction | 7/15/2024 | 6/15/2025 | 5 | 240 | |
| 3 | Building 1 Paving | Paving | 3/30/2025 | 6/15/2025 | 5 | 55 | |
| 4 | Building 1 Architectural Coating | Architectural Coating | 3/30/2025 | 6/16/2025 | 5 | 56 | |
| 5 | Rough Grading | Grading | 9/15/2026 | 10/15/2026 | 5 | 23 | |
| 6 | Buildings 2 and 3 Utility Trenching | Trenching | 9/15/2026 | 10/15/2026 | 5 | 23 | |
| 7 | Buildings 2 and 3 Construction | Building Construction | 9/15/2026 | 8/15/2027 | 5 | 239 | |
| 8 | Buildings 2 and 3 Architectural Coating | Architectural Coating | 5/31/2027 | 8/15/2027 | 5 | 55 | |
| 9 | Fine Grading | Grading | 7/15/2027 | 8/15/2027 | 5 | 22 | |
| 10 | Finishing/Landscaping | Trenching | 7/15/2027 | 8/13/2027 | 5 | 22 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 69**

**Acres of Paving: 31.95**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 111,165; Non-Residential Outdoor: 37,055; Striped Parking Area: 3,516 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Rough Grading | Excavators | 2 | 8.00 | 158 | 0.38 |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | |
|---|---|---|---|---|---|
| Rough Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Rough Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Rough Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Fine Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Fine Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Fine Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Fine Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Fine Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building 1 Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building 1 Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building 1 Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building 1 Construction | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Building 1 Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Buildings 2 and 3 Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Buildings 2 and 3 Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Buildings 2 and 3 Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Buildings 2 and 3 Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Buildings 2 and 3 Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Building 1 Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Building 1 Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Building 1 Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Building 1 Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Buildings 2 and 3 Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Building 1 Utility Trenching | | | | | |
| Building 1 Utility Trenching | Cranes | 1 | 8.00 | 212 | 0.43 |
| Building 1 Utility Trenching | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Building 1 Utility Trenching | Excavators | 1 | 8.00 | 158 | 0.38 |
| Building 1 Utility Trenching | Off-Highway Trucks | 2 | 8.00 | 402 | 0.38 |
| Buildings 2 and 3 Utility Trenching | Cranes | 1 | 8.00 | 231 | 0.29 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | |
|---|---|---|---|---|---|
| Buildings 2 and 3 Utility Trenching | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Buildings 2 and 3 Utility Trenching | Excavators | 2 | 8.00 | 158 | 0.38 |
| Buildings 2 and 3 Utility Trenching | Off-Highway Trucks | 1 | 8.00 | 402 | 0.38 |
| Finishing/Landscaping | Cranes | 1 | 8.00 | 231 | 0.29 |
| Finishing/Landscaping | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Finishing/Landscaping | Excavators | 2 | 8.00 | 158 | 0.38 |
| Finishing/Landscaping | Off-Highway Trucks | 1 | 8.00 | 158 | 0.38 |
| Finishing/Landscaping | Rubber Tired Loaders | 1 | 8.00 | 203 | 0.36 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Rough Grading | 6 | 20.00 | 20.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Fine Grading | 8 | 20.00 | 20.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Construction | 9 | 419.00 | 164.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Buildings 2 and 3 Construction | 9 | 419.00 | 164.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Paving | 6 | 15.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Architectural Coating | 1 | 168.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Buildings 2 and 3 Architectural Coating | 1 | 168.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Utility Trenching | 5 | 15.00 | 6.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Buildings 2 and 3 Utility Trenching | 5 | 15.00 | 6.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Finishing/Landscaping | 6 | 15.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.2 Building 1 Utility Trenching - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.0498 | 17.5753 | 14.3831 | 0.0473 | | 0.6915 | 0.6915 | | 0.6361 | 0.6361 | | 4,580.0422 | 4,580.0422 | 1.4813 | | 4,617.0742 |
| **Total** | **2.0498** | **17.5753** | **14.3831** | **0.0473** | | **0.6915** | **0.6915** | | **0.6361** | **0.6361** | | **4,580.0422** | **4,580.0422** | **1.4813** | | **4,617.0742** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.6900e-003 | 0.2910 | 0.0983 | 1.5500e-003 | 0.0567 | 1.8600e-003 | 0.0586 | 0.0163 | 1.7800e-003 | 0.0181 | | 166.8220 | 166.8220 | 5.6800e-003 | 0.0241 | 174.1521 |
| Worker | 0.0517 | 0.0346 | 0.6005 | 1.7900e-003 | 0.2110 | 1.1200e-003 | 0.2121 | 0.0559 | 1.0300e-003 | 0.0570 | | 180.6288 | 180.6288 | 3.7100e-003 | 3.7600e-003 | 181.8431 |
| **Total** | **0.0594** | **0.3256** | **0.6988** | **3.3400e-003** | **0.2677** | **2.9800e-003** | **0.2707** | **0.0723** | **2.8100e-003** | **0.0751** | | **347.4507** | **347.4507** | **9.3900e-003** | **0.0279** | **355.9952** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.2 Building 1 Utility Trenching - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.0498 | 17.5753 | 14.3831 | 0.0473 | | 0.6915 | 0.6915 | | 0.6361 | 0.6361 | 0.0000 | 4,580.0422 | 4,580.0422 | 1.4813 | | 4,617.0742 |
| **Total** | **2.0498** | **17.5753** | **14.3831** | **0.0473** | | **0.6915** | **0.6915** | | **0.6361** | **0.6361** | **0.0000** | **4,580.0422** | **4,580.0422** | **1.4813** | | **4,617.0742** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.6900e-003 | 0.2910 | 0.0983 | 1.5500e-003 | 0.0567 | 1.8600e-003 | 0.0586 | 0.0163 | 1.7800e-003 | 0.0181 | | 166.8220 | 166.8220 | 5.6800e-003 | 0.0241 | 174.1521 |
| Worker | 0.0517 | 0.0346 | 0.6005 | 1.7900e-003 | 0.2110 | 1.1200e-003 | 0.2121 | 0.0559 | 1.0300e-003 | 0.0570 | | 180.6288 | 180.6288 | 3.7100e-003 | 3.7600e-003 | 181.8431 |
| **Total** | **0.0594** | **0.3256** | **0.6988** | **3.3400e-003** | **0.2677** | **2.9800e-003** | **0.2707** | **0.0723** | **2.8100e-003** | **0.0751** | | **347.4507** | **347.4507** | **9.3900e-003** | **0.0279** | **355.9952** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5255 | 13.9869 | 17.0052 | 0.0281 | | 0.6382 | 0.6382 | | 0.5998 | 0.5998 | | 2,668.8614 | 2,668.8614 | 0.6410 | | 2,684.8852 |
| **Total** | **1.5255** | **13.9869** | **17.0052** | **0.0281** | | **0.6382** | **0.6382** | | **0.5998** | **0.5998** | | **2,668.8614** | **2,668.8614** | **0.6410** | | **2,684.8852** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.2102 | 7.9544 | 2.6870 | 0.0423 | 1.5503 | 0.0509 | 1.6012 | 0.4461 | 0.0487 | 0.4948 | | 4,559.8008 | 4,559.8008 | 0.1553 | 0.6593 | 4,760.1564 |
| Worker | 1.4434 | 0.9654 | 16.7726 | 0.0499 | 5.8931 | 0.0312 | 5.9242 | 1.5627 | 0.0287 | 1.5914 | | 5,045.5630 | 5,045.5630 | 0.1038 | 0.1051 | 5,079.4841 |
| **Total** | **1.6537** | **8.9198** | **19.4596** | **0.0922** | **7.4434** | **0.0821** | **7.5254** | **2.0089** | **0.0774** | **2.0862** | | **9,605.3638** | **9,605.3638** | **0.2591** | **0.7644** | **9,839.6405** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5255 | 13.9869 | 17.0052 | 0.0281 | | 0.6382 | 0.6382 | | 0.5998 | 0.5998 | 0.0000 | 2,668.8614 | 2,668.8614 | 0.6410 | | 2,684.8852 |
| **Total** | **1.5255** | **13.9869** | **17.0052** | **0.0281** | | **0.6382** | **0.6382** | | **0.5998** | **0.5998** | **0.0000** | **2,668.8614** | **2,668.8614** | **0.6410** | | **2,684.8852** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.2102 | 7.9544 | 2.6870 | 0.0423 | 1.5503 | 0.0509 | 1.6012 | 0.4461 | 0.0487 | 0.4948 | | 4,559.8008 | 4,559.8008 | 0.1553 | 0.6593 | 4,760.1564 |
| Worker | 1.4434 | 0.9654 | 16.7726 | 0.0499 | 5.8931 | 0.0312 | 5.9242 | 1.5627 | 0.0287 | 1.5914 | | 5,045.5630 | 5,045.5630 | 0.1038 | 0.1051 | 5,079.4841 |
| **Total** | **1.6537** | **8.9198** | **19.4596** | **0.0922** | **7.4434** | **0.0821** | **7.5254** | **2.0089** | **0.0774** | **2.0862** | | **9,605.3638** | **9,605.3638** | **0.2591** | **0.7644** | **9,839.6405** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4169 | 12.9703 | 16.9208 | 0.0281 | | 0.5478 | 0.5478 | | 0.5149 | 0.5149 | | 2,669.7453 | 2,669.7453 | 0.6376 | | 2,685.6849 |
| **Total** | **1.4169** | **12.9703** | **16.9208** | **0.0281** | | **0.5478** | **0.5478** | | **0.5149** | **0.5149** | | **2,669.7453** | **2,669.7453** | **0.6376** | | **2,685.6849** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.2050 | 7.9159 | 2.6430 | 0.0415 | 1.5503 | 0.0511 | 1.6014 | 0.4461 | 0.0488 | 0.4950 | | 4,476.6352 | 4,476.6352 | 0.1559 | 0.6480 | 4,673.6472 |
| Worker | 1.3524 | 0.8665 | 15.6128 | 0.0482 | 5.8931 | 0.0297 | 5.9227 | 1.5627 | 0.0273 | 1.5900 | | 4,873.5871 | 4,873.5871 | 0.0934 | 0.0982 | 4,905.1898 |
| **Total** | **1.5574** | **8.7824** | **18.2558** | **0.0897** | **7.4433** | **0.0807** | **7.5241** | **2.0089** | **0.0762** | **2.0850** | | **9,350.2223** | **9,350.2223** | **0.2493** | **0.7463** | **9,578.8371** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4169 | 12.9703 | 16.9208 | 0.0281 | | 0.5478 | 0.5478 | | 0.5149 | 0.5149 | 0.0000 | 2,669.7453 | 2,669.7453 | 0.6376 | | 2,685.6849 |
| **Total** | **1.4169** | **12.9703** | **16.9208** | **0.0281** | | **0.5478** | **0.5478** | | **0.5149** | **0.5149** | **0.0000** | **2,669.7453** | **2,669.7453** | **0.6376** | | **2,685.6849** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.2050 | 7.9159 | 2.6430 | 0.0415 | 1.5503 | 0.0511 | 1.6014 | 0.4461 | 0.0488 | 0.4950 | | 4,476.6352 | 4,476.6352 | 0.1559 | 0.6480 | 4,673.6472 |
| Worker | 1.3524 | 0.8665 | 15.6128 | 0.0482 | 5.8931 | 0.0297 | 5.9227 | 1.5627 | 0.0273 | 1.5900 | | 4,873.5871 | 4,873.5871 | 0.0934 | 0.0982 | 4,905.1898 |
| **Total** | **1.5574** | **8.7824** | **18.2558** | **0.0897** | **7.4433** | **0.0807** | **7.5241** | **2.0089** | **0.0762** | **2.0850** | | **9,350.2223** | **9,350.2223** | **0.2493** | **0.7463** | **9,578.8371** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.4 Building 1 Paving - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.9632 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.8784** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0484 | 0.0310 | 0.5589 | 1.7300e-003 | 0.2110 | 1.0600e-003 | 0.2120 | 0.0559 | 9.8000e-004 | 0.0569 | | 174.4721 | 174.4721 | 3.3500e-003 | 3.5200e-003 | 175.6035 |
| **Total** | **0.0484** | **0.0310** | **0.5589** | **1.7300e-003** | **0.2110** | **1.0600e-003** | **0.2120** | **0.0559** | **9.8000e-004** | **0.0569** | | **174.4721** | **174.4721** | **3.3500e-003** | **3.5200e-003** | **175.6035** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.4 Building 1 Paving - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | 0.0000 | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.9632 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.8784** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | **0.0000** | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0484 | 0.0310 | 0.5589 | 1.7300e-003 | 0.2110 | 1.0600e-003 | 0.2120 | 0.0559 | 9.8000e-004 | 0.0569 | | 174.4721 | 174.4721 | 3.3500e-003 | 3.5200e-003 | 175.6035 |
| **Total** | **0.0484** | **0.0310** | **0.5589** | **1.7300e-003** | **0.2110** | **1.0600e-003** | **0.2120** | **0.0559** | **9.8000e-004** | **0.0569** | | **174.4721** | **174.4721** | **3.3500e-003** | **3.5200e-003** | **175.6035** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.5 Building 1 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 12.5589 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **12.7297** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5422 | 0.3474 | 6.2600 | 0.0193 | 2.3628 | 0.0119 | 2.3747 | 0.6266 | 0.0110 | 0.6375 | | 1,954.0874 | 1,954.0874 | 0.0375 | 0.0394 | 1,966.7587 |
| **Total** | **0.5422** | **0.3474** | **6.2600** | **0.0193** | **2.3628** | **0.0119** | **2.3747** | **0.6266** | **0.0110** | **0.6375** | | **1,954.0874** | **1,954.0874** | **0.0375** | **0.0394** | **1,966.7587** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.5 Building 1 Architectural Coating - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 12.5589 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **12.7297** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5422 | 0.3474 | 6.2600 | 0.0193 | 2.3628 | 0.0119 | 2.3747 | 0.6266 | 0.0110 | 0.6375 | | 1,954.0874 | 1,954.0874 | 0.0375 | 0.0394 | 1,966.7587 |
| **Total** | **0.5422** | **0.3474** | **6.2600** | **0.0193** | **2.3628** | **0.0119** | **2.3747** | **0.6266** | **0.0110** | **0.6375** | | **1,954.0874** | **1,954.0874** | **0.0375** | **0.0394** | **1,966.7587** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.6 Rough Grading - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.6370 | 25.2727 | 21.8718 | 0.0558 | | 1.0227 | 1.0227 | | 0.9409 | 0.9409 | | 5,404.1697 | 5,404.1697 | 1.7478 | | 5,447.8652 |
| **Total** | **2.6370** | **25.2727** | **21.8718** | **0.0558** | **9.2036** | **1.0227** | **10.2263** | **3.6538** | **0.9409** | **4.5946** | | **5,404.1697** | **5,404.1697** | **1.7478** | | **5,447.8652** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0244 | 0.9582 | 0.3182 | 4.9600e-003 | 0.1891 | 6.2100e-003 | 0.1953 | 0.0544 | 5.9400e-003 | 0.0604 | | 535.6954 | 535.6954 | 0.0191 | 0.0776 | 559.3040 |
| Worker | 0.0608 | 0.0375 | 0.6993 | 2.2300e-003 | 0.2813 | 1.3400e-003 | 0.2826 | 0.0746 | 1.2400e-003 | 0.0758 | | 225.4869 | 225.4869 | 4.0400e-003 | 4.4200e-003 | 226.9047 |
| **Total** | **0.0853** | **0.9957** | **1.0174** | **7.1900e-003** | **0.4704** | **7.5500e-003** | **0.4779** | **0.1290** | **7.1800e-003** | **0.1362** | | **761.1823** | **761.1823** | **0.0231** | **0.0821** | **786.2086** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.6 Rough Grading - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.6370 | 25.2727 | 21.8718 | 0.0558 | | 1.0227 | 1.0227 | | 0.9409 | 0.9409 | 0.0000 | 5,404.1697 | 5,404.1697 | 1.7478 | | 5,447.8652 |
| **Total** | **2.6370** | **25.2727** | **21.8718** | **0.0558** | **9.2036** | **1.0227** | **10.2263** | **3.6538** | **0.9409** | **4.5946** | **0.0000** | **5,404.1697** | **5,404.1697** | **1.7478** | | **5,447.8652** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0244 | 0.9582 | 0.3182 | 4.9600e-003 | 0.1891 | 6.2100e-003 | 0.1953 | 0.0544 | 5.9400e-003 | 0.0604 | | 535.6954 | 535.6954 | 0.0191 | 0.0776 | 559.3040 |
| Worker | 0.0608 | 0.0375 | 0.6993 | 2.2300e-003 | 0.2813 | 1.3400e-003 | 0.2826 | 0.0746 | 1.2400e-003 | 0.0758 | | 225.4869 | 225.4869 | 4.0400e-003 | 4.4200e-003 | 226.9047 |
| **Total** | **0.0853** | **0.9957** | **1.0174** | **7.1900e-003** | **0.4704** | **7.5500e-003** | **0.4779** | **0.1290** | **7.1800e-003** | **0.1362** | | **761.1823** | **761.1823** | **0.0231** | **0.0821** | **786.2086** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.7 Buildings 2 and 3 Utility Trenching - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4983 | 12.4350 | 13.5444 | 0.0372 | | 0.5114 | 0.5114 | | 0.4704 | 0.4704 | | 3,597.4459 | 3,597.4459 | 1.1635 | | 3,626.5330 |
| **Total** | **1.4983** | **12.4350** | **13.5444** | **0.0372** | | **0.5114** | **0.5114** | | **0.4704** | **0.4704** | | **3,597.4459** | **3,597.4459** | **1.1635** | | **3,626.5330** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.3300e-003 | 0.2874 | 0.0954 | 1.4900e-003 | 0.0567 | 1.8600e-003 | 0.0586 | 0.0163 | 1.7800e-003 | 0.0181 | | 160.7086 | 160.7086 | 5.7200e-003 | 0.0233 | 167.7912 |
| Worker | 0.0456 | 0.0281 | 0.5245 | 1.6700e-003 | 0.2110 | 1.0100e-003 | 0.2120 | 0.0559 | 9.3000e-004 | 0.0569 | | 169.1152 | 169.1152 | 3.0300e-003 | 3.3100e-003 | 170.1785 |
| **Total** | **0.0530** | **0.3156** | **0.6199** | **3.1600e-003** | **0.2677** | **2.8700e-003** | **0.2706** | **0.0723** | **2.7100e-003** | **0.0750** | | **329.8238** | **329.8238** | **8.7500e-003** | **0.0266** | **337.9697** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.7 Buildings 2 and 3 Utility Trenching - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4983 | 12.4350 | 13.5444 | 0.0372 | | 0.5114 | 0.5114 | | 0.4704 | 0.4704 | 0.0000 | 3,597.4459 | 3,597.4459 | 1.1635 | | 3,626.5330 |
| **Total** | **1.4983** | **12.4350** | **13.5444** | **0.0372** | | **0.5114** | **0.5114** | | **0.4704** | **0.4704** | **0.0000** | **3,597.4459** | **3,597.4459** | **1.1635** | | **3,626.5330** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.3300e-003 | 0.2874 | 0.0954 | 1.4900e-003 | 0.0567 | 1.8600e-003 | 0.0586 | 0.0163 | 1.7800e-003 | 0.0181 | | 160.7086 | 160.7086 | 5.7200e-003 | 0.0233 | 167.7912 |
| Worker | 0.0456 | 0.0281 | 0.5245 | 1.6700e-003 | 0.2110 | 1.0100e-003 | 0.2120 | 0.0559 | 9.3000e-004 | 0.0569 | | 169.1152 | 169.1152 | 3.0300e-003 | 3.3100e-003 | 170.1785 |
| **Total** | **0.0530** | **0.3156** | **0.6199** | **3.1600e-003** | **0.2677** | **2.8700e-003** | **0.2706** | **0.0723** | **2.7100e-003** | **0.0750** | | **329.8238** | **329.8238** | **8.7500e-003** | **0.0266** | **337.9697** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.2004 | 7.8568 | 2.6088 | 0.0407 | 1.5503 | 0.0510 | 1.6012 | 0.4461 | 0.0487 | 0.4949 | | 4,392.7022 | 4,392.7022 | 0.1562 | 0.6365 | 4,586.2924 |
| Worker | 1.2742 | 0.7859 | 14.6502 | 0.0467 | 5.8931 | 0.0281 | 5.9212 | 1.5627 | 0.0259 | 1.5886 | | 4,723.9502 | 4,723.9502 | 0.0847 | 0.0926 | 4,753.6526 |
| **Total** | **1.4746** | **8.6427** | **17.2590** | **0.0874** | **7.4433** | **0.0791** | **7.5224** | **2.0088** | **0.0746** | **2.0835** | | **9,116.6524** | **9,116.6524** | **0.2409** | **0.7291** | **9,339.9449** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.2004 | 7.8568 | 2.6088 | 0.0407 | 1.5503 | 0.0510 | 1.6012 | 0.4461 | 0.0487 | 0.4949 | | 4,392.7022 | 4,392.7022 | 0.1562 | 0.6365 | 4,586.2924 |
| Worker | 1.2742 | 0.7859 | 14.6502 | 0.0467 | 5.8931 | 0.0281 | 5.9212 | 1.5627 | 0.0259 | 1.5886 | | 4,723.9502 | 4,723.9502 | 0.0847 | 0.0926 | 4,753.6526 |
| **Total** | **1.4746** | **8.6427** | **17.2590** | **0.0874** | **7.4433** | **0.0791** | **7.5224** | **2.0088** | **0.0746** | **2.0835** | | **9,116.6524** | **9,116.6524** | **0.2409** | **0.7291** | **9,339.9449** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1964 | 7.7955 | 2.5802 | 0.0399 | 1.5503 | 0.0507 | 1.6010 | 0.4461 | 0.0485 | 0.4947 | | 4,305.0303 | 4,305.0303 | 0.1560 | 0.6245 | 4,495.0429 |
| Worker | 1.2028 | 0.7179 | 13.8318 | 0.0454 | 5.8931 | 0.0264 | 5.9194 | 1.5627 | 0.0243 | 1.5870 | | 4,591.0860 | 4,591.0860 | 0.0772 | 0.0879 | 4,619.1949 |
| **Total** | **1.3991** | **8.5134** | **16.4119** | **0.0853** | **7.4433** | **0.0771** | **7.5205** | **2.0088** | **0.0728** | **2.0817** | | **8,896.1163** | **8,896.1163** | **0.2332** | **0.7124** | **9,114.2379** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1964 | 7.7955 | 2.5802 | 0.0399 | 1.5503 | 0.0507 | 1.6010 | 0.4461 | 0.0485 | 0.4947 | | 4,305.0303 | 4,305.0303 | 0.1560 | 0.6245 | 4,495.0429 |
| Worker | 1.2028 | 0.7179 | 13.8318 | 0.0454 | 5.8931 | 0.0264 | 5.9194 | 1.5627 | 0.0243 | 1.5870 | | 4,591.0860 | 4,591.0860 | 0.0772 | 0.0879 | 4,619.1949 |
| **Total** | **1.3991** | **8.5134** | **16.4119** | **0.0853** | **7.4433** | **0.0771** | **7.5205** | **2.0088** | **0.0728** | **2.0817** | | **8,896.1163** | **8,896.1163** | **0.2332** | **0.7124** | **9,114.2379** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.9 Buildings 2 and 3 Architectural Coating - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 159.4855 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **159.6563** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4823 | 0.2878 | 5.5459 | 0.0182 | 2.3628 | 0.0106 | 2.3734 | 0.6266 | 9.7400e-003 | 0.6363 | | 1,840.8173 | 1,840.8173 | 0.0310 | 0.0352 | 1,852.0877 |
| **Total** | **0.4823** | **0.2878** | **5.5459** | **0.0182** | **2.3628** | **0.0106** | **2.3734** | **0.6266** | **9.7400e-003** | **0.6363** | | **1,840.8173** | **1,840.8173** | **0.0310** | **0.0352** | **1,852.0877** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.9 Buildings 2 and 3 Architectural Coating - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 159.4855 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **159.6563** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4823 | 0.2878 | 5.5459 | 0.0182 | 2.3628 | 0.0106 | 2.3734 | 0.6266 | 9.7400e-003 | 0.6363 | | 1,840.8173 | 1,840.8173 | 0.0310 | 0.0352 | 1,852.0877 |
| **Total** | **0.4823** | **0.2878** | **5.5459** | **0.0182** | **2.3628** | **0.0106** | **2.3734** | **0.6266** | **9.7400e-003** | **0.6363** | | **1,840.8173** | **1,840.8173** | **0.0310** | **0.0352** | **1,852.0877** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.10 Fine Grading - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.9012 | 27.9429 | 26.3311 | 0.0621 | | 1.1309 | 1.1309 | | 1.0404 | 1.0404 | | 6,008.2814 | 6,008.2814 | 1.9432 | | 6,056.8614 |
| **Total** | **2.9012** | **27.9429** | **26.3311** | **0.0621** | **9.2036** | **1.1309** | **10.3345** | **3.6538** | **1.0404** | **4.6942** | | **6,008.2814** | **6,008.2814** | **1.9432** | | **6,056.8614** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0240 | 0.9507 | 0.3147 | 4.8600e-003 | 0.1891 | 6.1900e-003 | 0.1953 | 0.0544 | 5.9200e-003 | 0.0603 | | 525.0037 | 525.0037 | 0.0190 | 0.0762 | 548.1760 |
| Worker | 0.0574 | 0.0343 | 0.6602 | 2.1700e-003 | 0.2813 | 1.2600e-003 | 0.2826 | 0.0746 | 1.1600e-003 | 0.0758 | | 219.1449 | 219.1449 | 3.6900e-003 | 4.1900e-003 | 220.4866 |
| **Total** | **0.0814** | **0.9849** | **0.9749** | **7.0300e-003** | **0.4704** | **7.4500e-003** | **0.4778** | **0.1290** | **7.0800e-003** | **0.1361** | | **744.1486** | **744.1486** | **0.0227** | **0.0804** | **768.6626** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.10 Fine Grading - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.9012 | 27.9429 | 26.3311 | 0.0621 | | 1.1309 | 1.1309 | | 1.0404 | 1.0404 | 0.0000 | 6,008.2814 | 6,008.2814 | 1.9432 | | 6,056.8614 |
| **Total** | **2.9012** | **27.9429** | **26.3311** | **0.0621** | **9.2036** | **1.1309** | **10.3345** | **3.6538** | **1.0404** | **4.6942** | **0.0000** | **6,008.2814** | **6,008.2814** | **1.9432** | | **6,056.8614** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0240 | 0.9507 | 0.3147 | 4.8600e-003 | 0.1891 | 6.1900e-003 | 0.1953 | 0.0544 | 5.9200e-003 | 0.0603 | | 525.0037 | 525.0037 | 0.0190 | 0.0762 | 548.1760 |
| Worker | 0.0574 | 0.0343 | 0.6602 | 2.1700e-003 | 0.2813 | 1.2600e-003 | 0.2826 | 0.0746 | 1.1600e-003 | 0.0758 | | 219.1449 | 219.1449 | 3.6900e-003 | 4.1900e-003 | 220.4866 |
| **Total** | **0.0814** | **0.9849** | **0.9749** | **7.0300e-003** | **0.4704** | **7.4500e-003** | **0.4778** | **0.1290** | **7.0800e-003** | **0.1361** | | **744.1486** | **744.1486** | **0.0227** | **0.0804** | **768.6626** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.11 Finishing/Landscaping - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4756 | 12.8417 | 15.3542 | 0.0353 | | 0.5399 | 0.5399 | | 0.4968 | 0.4968 | | 3,421.0904 | 3,421.0904 | 1.1065 | | 3,448.7517 |
| **Total** | **1.4756** | **12.8417** | **15.3542** | **0.0353** | | **0.5399** | **0.5399** | | **0.4968** | **0.4968** | | **3,421.0904** | **3,421.0904** | **1.1065** | | **3,448.7517** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0431 | 0.0257 | 0.4952 | 1.6300e-003 | 0.2110 | 9.4000e-004 | 0.2119 | 0.0559 | 8.7000e-004 | 0.0568 | | 164.3587 | 164.3587 | 2.7600e-003 | 3.1400e-003 | 165.3650 |
| **Total** | **0.0431** | **0.0257** | **0.4952** | **1.6300e-003** | **0.2110** | **9.4000e-004** | **0.2119** | **0.0559** | **8.7000e-004** | **0.0568** | | **164.3587** | **164.3587** | **2.7600e-003** | **3.1400e-003** | **165.3650** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.11 Finishing/Landscaping - 2027

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4756 | 12.8417 | 15.3542 | 0.0353 | | 0.5399 | 0.5399 | | 0.4968 | 0.4968 | 0.0000 | 3,421.0904 | 3,421.0904 | 1.1065 | | 3,448.7517 |
| **Total** | **1.4756** | **12.8417** | **15.3542** | **0.0353** | | **0.5399** | **0.5399** | | **0.4968** | **0.4968** | **0.0000** | **3,421.0904** | **3,421.0904** | **1.1065** | | **3,448.7517** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0431 | 0.0257 | 0.4952 | 1.6300e-003 | 0.2110 | 9.4000e-004 | 0.2119 | 0.0559 | 8.7000e-004 | 0.0568 | | 164.3587 | 164.3587 | 2.7600e-003 | 3.1400e-003 | 165.3650 |
| **Total** | **0.0431** | **0.0257** | **0.4952** | **1.6300e-003** | **0.2110** | **9.4000e-004** | **0.2119** | **0.0559** | **8.7000e-004** | **0.0568** | | **164.3587** | **164.3587** | **2.7600e-003** | **3.1400e-003** | **165.3650** |

## 4.0 Operational Detail - Mobile

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 6.1779 | 6.4985 | 65.2678 | 0.1569 | 18.5671 | 0.1029 | 18.6700 | 4.9481 | 0.0958 | 5.0439 | | 16,007.6746 | 16,007.6746 | 0.9333 | 0.6300 | 16,218.7320 |
| Unmitigated | 6.1779 | 6.4985 | 65.2678 | 0.1569 | 18.5671 | 0.1029 | 18.6700 | 4.9481 | 0.0958 | 5.0439 | | 16,007.6746 | 16,007.6746 | 0.9333 | 0.6300 | 16,218.7320 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Unrefrigerated Warehouse-No Rail | 2,055.88 | 2,055.88 | 2055.88 | 8,810,920 | 8,810,920 |
| Total | 2,055.88 | 2,055.88 | 2,055.88 | 8,810,920 | 8,810,920 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Unrefrigerated Warehouse-No | 16.60 | 8.40 | 6.90 | 59.00 | 0.00 | 41.00 | 92 | 5 | 3 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 0.539139 | 0.063841 | 0.187327 | 0.126709 | 0.023805 | 0.006751 | 0.012629 | 0.009091 | 0.000821 | 0.000480 | 0.025164 | 0.000758 | 0.003487 |
| Parking Lot | 0.539139 | 0.063841 | 0.187327 | 0.126709 | 0.023805 | 0.006751 | 0.012629 | 0.009091 | 0.000821 | 0.000480 | 0.025164 | 0.000758 | 0.003487 |
| Unrefrigerated Warehouse-No Rail | 0.539139 | 0.063841 | 0.187327 | 0.126709 | 0.023805 | 0.006751 | 0.012629 | 0.009091 | 0.000821 | 0.000480 | 0.025164 | 0.000758 | 0.003487 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |
| NaturalGas Unmitigated | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 2350.97 | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |
| **Total** | | **0.0254** | **0.2305** | **0.1936** | **1.3800e-003** | | **0.0175** | **0.0175** | | **0.0175** | **0.0175** | | **276.5849** | **276.5849** | **5.3000e-003** | **5.0700e-003** | **278.2285** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 2.35097 | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |
| **Total** | | **0.0254** | **0.2305** | **0.1936** | **1.3800e-003** | | **0.0175** | **0.0175** | | **0.0175** | **0.0175** | | **276.5849** | **276.5849** | **5.3000e-003** | **5.0700e-003** | **278.2285** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 22.4464 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |
| Unmitigated | 22.4464 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.5578 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 19.8662 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 0.0224 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |
| **Total** | **22.4464** | **2.2100e-003** | **0.2434** | **2.0000e-005** | | **8.7000e-004** | **8.7000e-004** | | **8.7000e-004** | **8.7000e-004** | | **0.5231** | **0.5231** | **1.3600e-003** | | **0.5571** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.5578 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 19.8662 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 0.0224 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |
| **Total** | **22.4464** | **2.2100e-003** | **0.2434** | **2.0000e-005** | | **8.7000e-004** | **8.7000e-004** | | **8.7000e-004** | **8.7000e-004** | | **0.5231** | **0.5231** | **1.3600e-003** | | **0.5571** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

# Irwindale Gateway Project (Option 1)

**South Coast AQMD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 998.00 | 1000sqft | 22.91 | 997,796.00 | 0 |
| Other Non-Asphalt Surfaces | 310.00 | 1000sqft | 7.12 | 310,164.00 | 0 |
| Other Non-Asphalt Surfaces | 201.00 | 1000sqft | 4.61 | 0.00 | 0 |
| Parking Lot | 881.00 | 1000sqft | 20.22 | 0.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 31 |
| **Climate Zone** | 9 | | | **Operational Year** | 2028 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 390.98 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with DEIR's model.

Land Use - Consistent with DEIR's model.

Construction Phase - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Off-road Equipment - Consistent with DEIR's model.

Trips and VMT - Consistent with DEIR's model.

Grading - Consistent with DEIR's model.

Architectural Coating - Consistent with DEIR's model.

Vehicle Trips - Consistent with DEIR's model.

Area Coating - Consistent with DEIR's model.

Water And Wastewater - See comment on: "Unsubstantiated Changes to Operational Wastewater Values".

Construction Off-road Equipment Mitigation - See comment on: "Incorrect Application of Tier 4 Final Mitigation".

Fleet Mix - See comment: "Unsubstantiated Changes to Fleet Mix Values".

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 498,898.00 | 37,055.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 498,898.00 | 461,843.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 1,496,694.00 | 111,165.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 1,496,694.00 | 1,385,529.00 |
| tblArchitecturalCoating | ConstArea_Parking | 18,610.00 | 3,516.00 |
| tblArchitecturalCoating | ConstArea_Parking | 18,610.00 | 45,120.00 |
| tblArchitecturalCoating | EF_Residential_Exterior | 50.00 | 0.00 |
| tblArchitecturalCoating | EF_Residential_Exterior | 50.00 | 0.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 50.00 | 0.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 50.00 | 0.00 |
| tblConstructionPhase | NumDays | 75.00 | 56.00 |
| tblConstructionPhase | NumDays | 75.00 | 55.00 |
| tblConstructionPhase | NumDays | 1,110.00 | 240.00 |
| tblConstructionPhase | NumDays | 1,110.00 | 239.00 |
| tblConstructionPhase | NumDays | 110.00 | 23.00 |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 110.00 | 22.00 |
| tblConstructionPhase | NumDays | 75.00 | 55.00 |
| tblLandUse | LandUseSquareFeet | 998,000.00 | 997,796.00 |
| tblLandUse | LandUseSquareFeet | 201,000.00 | 0.00 |
| tblLandUse | LandUseSquareFeet | 310,000.00 | 310,164.00 |
| tblLandUse | LandUseSquareFeet | 881,000.00 | 0.00 |
| tblOffRoadEquipment | HorsePower | 231.00 | 212.00 |
| tblOffRoadEquipment | HorsePower | 402.00 | 158.00 |
| tblOffRoadEquipment | LoadFactor | 0.29 | 0.43 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripLength | 6.90 | 10.20 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 214.00 | 164.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 20.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 214.00 | 164.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 20.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | |
|---|---|---|---|
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 18.50 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 15.00 |
| tblTripsAndVMT | WorkerTripNumber | 549.00 | 419.00 |
| tblTripsAndVMT | WorkerTripNumber | 110.00 | 168.00 |
| tblTripsAndVMT | WorkerTripNumber | 15.00 | 20.00 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 15.00 |
| tblTripsAndVMT | WorkerTripNumber | 549.00 | 419.00 |
| tblTripsAndVMT | WorkerTripNumber | 110.00 | 168.00 |
| tblVehicleTrips | ST_TR | 1.74 | 2.06 |
| tblVehicleTrips | SU_TR | 1.74 | 2.06 |
| tblVehicleTrips | WD_TR | 1.74 | 2.06 |

## 2.0 Emissions Summary

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2024 | 5.3885 | 41.2956 | 49.8460 | 0.1680 | 7.7110 | 1.4149 | 9.1259 | 2.0811 | 1.3163 | 3.3974 | 0.0000 | 16,903.7144 | 16,903.7144 | 2.3904 | 0.8003 | 17,201.9495 |
| 2025 | 18.3125 | 32.3530 | 56.1715 | 0.1607 | 10.0172 | 1.1117 | 11.1289 | 2.6914 | 1.0397 | 3.7311 | 0.0000 | 16,235.7196 | 16,235.7196 | 1.6567 | 0.7989 | 16,515.2055 |
| 2026 | 7.2166 | 60.6462 | 68.8683 | 0.2149 | 17.3850 | 2.1513 | 19.5363 | 5.8639 | 1.9923 | 7.8561 | 0.0000 | 21,475.3220 | 21,475.3220 | 3.7848 | 0.8452 | 21,821.8024 |
| 2027 | 167.5455 | 64.7292 | 81.0063 | 0.2356 | 19.6911 | 2.3462 | 22.0372 | 6.4741 | 2.1756 | 8.6497 | 0.0000 | 23,523.7278 | 23,523.7278 | 3.9557 | 0.8402 | 23,873.0037 |
| **Maximum** | **167.5455** | **64.7292** | **81.0063** | **0.2356** | **19.6911** | **2.3462** | **22.0372** | **6.4741** | **2.1756** | **8.6497** | **0.0000** | **23,523.7278** | **23,523.7278** | **3.9557** | **0.8452** | **23,873.0037** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2024 | 5.3885 | 41.2956 | 49.8460 | 0.1680 | 7.7110 | 1.4149 | 9.1259 | 2.0811 | 1.3163 | 3.3974 | 0.0000 | 16,903.7144 | 16,903.7144 | 2.3904 | 0.8003 | 17,201.9495 |
| 2025 | 18.3125 | 32.3530 | 56.1715 | 0.1607 | 10.0172 | 1.1117 | 11.1289 | 2.6914 | 1.0397 | 3.7311 | 0.0000 | 16,235.7196 | 16,235.7196 | 1.6567 | 0.7989 | 16,515.2055 |
| 2026 | 7.2166 | 60.6462 | 68.8683 | 0.2149 | 17.3850 | 2.1513 | 19.5363 | 5.8639 | 1.9923 | 7.8561 | 0.0000 | 21,475.3220 | 21,475.3220 | 3.7848 | 0.8452 | 21,821.8024 |
| 2027 | 167.5455 | 64.7292 | 81.0063 | 0.2356 | 19.6911 | 2.3462 | 22.0372 | 6.4741 | 2.1756 | 8.6497 | 0.0000 | 23,523.7278 | 23,523.7278 | 3.9557 | 0.8402 | 23,873.0037 |
| **Maximum** | **167.5455** | **64.7292** | **81.0063** | **0.2356** | **19.6911** | **2.3462** | **22.0372** | **6.4741** | **2.1756** | **8.6497** | **0.0000** | **23,523.7278** | **23,523.7278** | **3.9557** | **0.8452** | **23,873.0037** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 22.4464 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |
| Energy | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |
| Mobile | 5.9843 | 6.9796 | 62.9040 | 0.1497 | 18.5671 | 0.1029 | 18.6700 | 4.9481 | 0.0958 | 5.0439 | | 15,274.6338 | 15,274.6338 | 0.9529 | 0.6528 | 15,492.9977 |
| **Total** | **28.4561** | **7.2123** | **63.3410** | **0.1511** | **18.5671** | **0.1213** | **18.6884** | **4.9481** | **0.1142** | **5.0623** | | **15,551.7417** | **15,551.7417** | **0.9596** | **0.6579** | **15,771.7833** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 22.4464 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |
| Energy | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |
| Mobile | 5.9843 | 6.9796 | 62.9040 | 0.1497 | 18.5671 | 0.1029 | 18.6700 | 4.9481 | 0.0958 | 5.0439 | | 15,274.6338 | 15,274.6338 | 0.9529 | 0.6528 | 15,492.9977 |
| **Total** | **28.4561** | **7.2123** | **63.3410** | **0.1511** | **18.5671** | **0.1213** | **18.6884** | **4.9481** | **0.1142** | **5.0623** | | **15,551.7417** | **15,551.7417** | **0.9596** | **0.6579** | **15,771.7833** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Building 1 Utility Trenching | Trenching | 7/15/2024 | 8/13/2024 | 5 | 22 | |
| 2 | Building 1 Construction | Building Construction | 7/15/2024 | 6/15/2025 | 5 | 240 | |
| 3 | Building 1 Paving | Paving | 3/30/2025 | 6/15/2025 | 5 | 55 | |
| 4 | Building 1 Architectural Coating | Architectural Coating | 3/30/2025 | 6/16/2025 | 5 | 56 | |
| 5 | Rough Grading | Grading | 9/15/2026 | 10/15/2026 | 5 | 23 | |
| 6 | Buildings 2 and 3 Utility Trenching | Trenching | 9/15/2026 | 10/15/2026 | 5 | 23 | |
| 7 | Buildings 2 and 3 Construction | Building Construction | 9/15/2026 | 8/15/2027 | 5 | 239 | |
| 8 | Buildings 2 and 3 Architectural Coating | Architectural Coating | 5/31/2027 | 8/15/2027 | 5 | 55 | |
| 9 | Fine Grading | Grading | 7/15/2027 | 8/15/2027 | 5 | 22 | |
| 10 | Finishing/Landscaping | Trenching | 7/15/2027 | 8/13/2027 | 5 | 22 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 69**

**Acres of Paving: 31.95**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 111,165; Non-Residential Outdoor: 37,055; Striped Parking Area: 3,516 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Rough Grading | Excavators | 2 | 8.00 | 158 | 0.38 |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | |
|---|---|---|---|---|---|
| Rough Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Rough Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Rough Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Fine Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Fine Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Fine Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Fine Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Fine Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building 1 Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building 1 Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building 1 Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building 1 Construction | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Building 1 Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Buildings 2 and 3 Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Buildings 2 and 3 Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Buildings 2 and 3 Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Buildings 2 and 3 Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Buildings 2 and 3 Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Building 1 Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Building 1 Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Building 1 Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Building 1 Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Buildings 2 and 3 Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Building 1 Utility Trenching | | | | | |
| Building 1 Utility Trenching | Cranes | 1 | 8.00 | 212 | 0.43 |
| Building 1 Utility Trenching | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Building 1 Utility Trenching | Excavators | 1 | 8.00 | 158 | 0.38 |
| Building 1 Utility Trenching | Off-Highway Trucks | 2 | 8.00 | 402 | 0.38 |
| Buildings 2 and 3 Utility Trenching | Cranes | 1 | 8.00 | 231 | 0.29 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | |
|---|---|---|---|---|---|
| Buildings 2 and 3 Utility Trenching | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Buildings 2 and 3 Utility Trenching | Excavators | 2 | 8.00 | 158 | 0.38 |
| Buildings 2 and 3 Utility Trenching | Off-Highway Trucks | 1 | 8.00 | 402 | 0.38 |
| Finishing/Landscaping | Cranes | 1 | 8.00 | 231 | 0.29 |
| Finishing/Landscaping | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Finishing/Landscaping | Excavators | 2 | 8.00 | 158 | 0.38 |
| Finishing/Landscaping | Off-Highway Trucks | 1 | 8.00 | 158 | 0.38 |
| Finishing/Landscaping | Rubber Tired Loaders | 1 | 8.00 | 203 | 0.36 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Rough Grading | 6 | 20.00 | 20.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Fine Grading | 8 | 20.00 | 20.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Construction | 9 | 419.00 | 164.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Buildings 2 and 3 Construction | 9 | 419.00 | 164.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Paving | 6 | 15.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Architectural Coating | 1 | 168.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Buildings 2 and 3 Architectural Coating | 1 | 168.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building 1 Utility Trenching | 5 | 15.00 | 6.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Buildings 2 and 3 Utility Trenching | 5 | 15.00 | 6.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Finishing/Landscaping | 6 | 15.00 | 0.00 | 0.00 | 18.50 | 10.20 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.2 Building 1 Utility Trenching - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.0498 | 17.5753 | 14.3831 | 0.0473 | | 0.6915 | 0.6915 | | 0.6361 | 0.6361 | | 4,580.0422 | 4,580.0422 | 1.4813 | | 4,617.0742 |
| **Total** | **2.0498** | **17.5753** | **14.3831** | **0.0473** | | **0.6915** | **0.6915** | | **0.6361** | **0.6361** | | **4,580.0422** | **4,580.0422** | **1.4813** | | **4,617.0742** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.4500e-003 | 0.3049 | 0.1009 | 1.5500e-003 | 0.0567 | 1.8700e-003 | 0.0586 | 0.0163 | 1.7900e-003 | 0.0181 | | 167.0349 | 167.0349 | 5.6600e-003 | 0.0242 | 174.3789 |
| Worker | 0.0554 | 0.0378 | 0.5391 | 1.6800e-003 | 0.2110 | 1.1200e-003 | 0.2121 | 0.0559 | 1.0300e-003 | 0.0570 | | 170.1206 | 170.1206 | 3.7200e-003 | 3.9900e-003 | 171.4028 |
| **Total** | **0.0628** | **0.3427** | **0.6400** | **3.2300e-003** | **0.2677** | **2.9900e-003** | **0.2707** | **0.0723** | **2.8200e-003** | **0.0751** | | **337.1555** | **337.1555** | **9.3800e-003** | **0.0282** | **345.7817** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.2 Building 1 Utility Trenching - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.0498 | 17.5753 | 14.3831 | 0.0473 | | 0.6915 | 0.6915 | | 0.6361 | 0.6361 | 0.0000 | 4,580.0422 | 4,580.0422 | 1.4813 | | 4,617.0742 |
| **Total** | **2.0498** | **17.5753** | **14.3831** | **0.0473** | | **0.6915** | **0.6915** | | **0.6361** | **0.6361** | **0.0000** | **4,580.0422** | **4,580.0422** | **1.4813** | | **4,617.0742** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.4500e-003 | 0.3049 | 0.1009 | 1.5500e-003 | 0.0567 | 1.8700e-003 | 0.0586 | 0.0163 | 1.7900e-003 | 0.0181 | | 167.0349 | 167.0349 | 5.6600e-003 | 0.0242 | 174.3789 |
| Worker | 0.0554 | 0.0378 | 0.5391 | 1.6800e-003 | 0.2110 | 1.1200e-003 | 0.2121 | 0.0559 | 1.0300e-003 | 0.0570 | | 170.1206 | 170.1206 | 3.7200e-003 | 3.9900e-003 | 171.4028 |
| **Total** | **0.0628** | **0.3427** | **0.6400** | **3.2300e-003** | **0.2677** | **2.9900e-003** | **0.2707** | **0.0723** | **2.8200e-003** | **0.0751** | | **337.1555** | **337.1555** | **9.3800e-003** | **0.0282** | **345.7817** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5255 | 13.9869 | 17.0052 | 0.0281 | | 0.6382 | 0.6382 | | 0.5998 | 0.5998 | | 2,668.8614 | 2,668.8614 | 0.6410 | | 2,684.8852 |
| **Total** | **1.5255** | **13.9869** | **17.0052** | **0.0281** | | **0.6382** | **0.6382** | | **0.5998** | **0.5998** | | **2,668.8614** | **2,668.8614** | **0.6410** | | **2,684.8852** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.2037 | 8.3351 | 2.7590 | 0.0424 | 1.5503 | 0.0511 | 1.6014 | 0.4461 | 0.0488 | 0.4950 | | 4,565.6195 | 4,565.6195 | 0.1548 | 0.6606 | 4,766.3577 |
| Worker | 1.5466 | 1.0556 | 15.0587 | 0.0470 | 5.8931 | 0.0312 | 5.9242 | 1.5627 | 0.0287 | 1.5914 | | 4,752.0358 | 4,752.0358 | 0.1040 | 0.1115 | 4,787.8507 |
| **Total** | **1.7503** | **9.3907** | **17.8177** | **0.0894** | **7.4434** | **0.0822** | **7.5256** | **2.0089** | **0.0775** | **2.0864** | | **9,317.6553** | **9,317.6553** | **0.2588** | **0.7721** | **9,554.2084** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5255 | 13.9869 | 17.0052 | 0.0281 | | 0.6382 | 0.6382 | | 0.5998 | 0.5998 | 0.0000 | 2,668.8614 | 2,668.8614 | 0.6410 | | 2,684.8852 |
| **Total** | **1.5255** | **13.9869** | **17.0052** | **0.0281** | | **0.6382** | **0.6382** | | **0.5998** | **0.5998** | **0.0000** | **2,668.8614** | **2,668.8614** | **0.6410** | | **2,684.8852** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.2037 | 8.3351 | 2.7590 | 0.0424 | 1.5503 | 0.0511 | 1.6014 | 0.4461 | 0.0488 | 0.4950 | | 4,565.6195 | 4,565.6195 | 0.1548 | 0.6606 | 4,766.3577 |
| Worker | 1.5466 | 1.0556 | 15.0587 | 0.0470 | 5.8931 | 0.0312 | 5.9242 | 1.5627 | 0.0287 | 1.5914 | | 4,752.0358 | 4,752.0358 | 0.1040 | 0.1115 | 4,787.8507 |
| **Total** | **1.7503** | **9.3907** | **17.8177** | **0.0894** | **7.4434** | **0.0822** | **7.5256** | **2.0089** | **0.0775** | **2.0864** | | **9,317.6553** | **9,317.6553** | **0.2588** | **0.7721** | **9,554.2084** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4169 | 12.9703 | 16.9208 | 0.0281 | | 0.5478 | 0.5478 | | 0.5149 | 0.5149 | | 2,669.7453 | 2,669.7453 | 0.6376 | | 2,685.6849 |
| **Total** | **1.4169** | **12.9703** | **16.9208** | **0.0281** | | **0.5478** | **0.5478** | | **0.5149** | **0.5149** | | **2,669.7453** | **2,669.7453** | **0.6376** | | **2,685.6849** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1984 | 8.2947 | 2.7145 | 0.0416 | 1.5503 | 0.0512 | 1.6015 | 0.4461 | 0.0490 | 0.4951 | | 4,482.4346 | 4,482.4346 | 0.1553 | 0.6493 | 4,679.8171 |
| Worker | 1.4540 | 0.9472 | 14.0241 | 0.0454 | 5.8931 | 0.0297 | 5.9227 | 1.5627 | 0.0273 | 1.5900 | | 4,590.4488 | 4,590.4488 | 0.0938 | 0.1041 | 4,623.8139 |
| **Total** | **1.6524** | **9.2419** | **16.7386** | **0.0870** | **7.4433** | **0.0809** | **7.5242** | **2.0089** | **0.0763** | **2.0852** | | **9,072.8834** | **9,072.8834** | **0.2491** | **0.7534** | **9,303.6310** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.3 Building 1 Construction - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4169 | 12.9703 | 16.9208 | 0.0281 | | 0.5478 | 0.5478 | | 0.5149 | 0.5149 | 0.0000 | 2,669.7453 | 2,669.7453 | 0.6376 | | 2,685.6849 |
| **Total** | **1.4169** | **12.9703** | **16.9208** | **0.0281** | | **0.5478** | **0.5478** | | **0.5149** | **0.5149** | **0.0000** | **2,669.7453** | **2,669.7453** | **0.6376** | | **2,685.6849** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1984 | 8.2947 | 2.7145 | 0.0416 | 1.5503 | 0.0512 | 1.6015 | 0.4461 | 0.0490 | 0.4951 | | 4,482.4346 | 4,482.4346 | 0.1553 | 0.6493 | 4,679.8171 |
| Worker | 1.4540 | 0.9472 | 14.0241 | 0.0454 | 5.8931 | 0.0297 | 5.9227 | 1.5627 | 0.0273 | 1.5900 | | 4,590.4488 | 4,590.4488 | 0.0938 | 0.1041 | 4,623.8139 |
| **Total** | **1.6524** | **9.2419** | **16.7386** | **0.0870** | **7.4433** | **0.0809** | **7.5242** | **2.0089** | **0.0763** | **2.0852** | | **9,072.8834** | **9,072.8834** | **0.2491** | **0.7534** | **9,303.6310** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.4 Building 1 Paving - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.9632 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.8784** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0521 | 0.0339 | 0.5021 | 1.6300e-003 | 0.2110 | 1.0600e-003 | 0.2120 | 0.0559 | 9.8000e-004 | 0.0569 | | 164.3359 | 164.3359 | 3.3600e-003 | 3.7300e-003 | 165.5303 |
| **Total** | **0.0521** | **0.0339** | **0.5021** | **1.6300e-003** | **0.2110** | **1.0600e-003** | **0.2120** | **0.0559** | **9.8000e-004** | **0.0569** | | **164.3359** | **164.3359** | **3.3600e-003** | **3.7300e-003** | **165.5303** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.4 Building 1 Paving - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | 0.0000 | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.9632 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.8784** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | **0.0000** | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0521 | 0.0339 | 0.5021 | 1.6300e-003 | 0.2110 | 1.0600e-003 | 0.2120 | 0.0559 | 9.8000e-004 | 0.0569 | | 164.3359 | 164.3359 | 3.3600e-003 | 3.7300e-003 | 165.5303 |
| **Total** | **0.0521** | **0.0339** | **0.5021** | **1.6300e-003** | **0.2110** | **1.0600e-003** | **0.2120** | **0.0559** | **9.8000e-004** | **0.0569** | | **164.3359** | **164.3359** | **3.3600e-003** | **3.7300e-003** | **165.5303** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.5 Building 1 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 12.5589 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **12.7297** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5830 | 0.3798 | 5.6230 | 0.0182 | 2.3628 | 0.0119 | 2.3747 | 0.6266 | 0.0110 | 0.6375 | | 1,840.5618 | 1,840.5618 | 0.0376 | 0.0417 | 1,853.9397 |
| **Total** | **0.5830** | **0.3798** | **5.6230** | **0.0182** | **2.3628** | **0.0119** | **2.3747** | **0.6266** | **0.0110** | **0.6375** | | **1,840.5618** | **1,840.5618** | **0.0376** | **0.0417** | **1,853.9397** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.5 Building 1 Architectural Coating - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 12.5589 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **12.7297** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5830 | 0.3798 | 5.6230 | 0.0182 | 2.3628 | 0.0119 | 2.3747 | 0.6266 | 0.0110 | 0.6375 | | 1,840.5618 | 1,840.5618 | 0.0376 | 0.0417 | 1,853.9397 |
| **Total** | **0.5830** | **0.3798** | **5.6230** | **0.0182** | **2.3628** | **0.0119** | **2.3747** | **0.6266** | **0.0110** | **0.6375** | | **1,840.5618** | **1,840.5618** | **0.0376** | **0.0417** | **1,853.9397** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.6 Rough Grading - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.6370 | 25.2727 | 21.8718 | 0.0558 | | 1.0227 | 1.0227 | | 0.9409 | 0.9409 | | 5,404.1697 | 5,404.1697 | 1.7478 | | 5,447.8652 |
| **Total** | **2.6370** | **25.2727** | **21.8718** | **0.0558** | **9.2036** | **1.0227** | **10.2263** | **3.6538** | **0.9409** | **4.5946** | | **5,404.1697** | **5,404.1697** | **1.7478** | | **5,447.8652** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0236 | 1.0040 | 0.3268 | 4.9700e-003 | 0.1891 | 6.2300e-003 | 0.1953 | 0.0544 | 5.9600e-003 | 0.0604 | | 536.3986 | 536.3986 | 0.0190 | 0.0778 | 560.0510 |
| Worker | 0.0656 | 0.0410 | 0.6283 | 2.1000e-003 | 0.2813 | 1.3400e-003 | 0.2826 | 0.0746 | 1.2400e-003 | 0.0758 | | 212.3985 | 212.3985 | 4.0600e-003 | 4.6800e-003 | 213.8952 |
| **Total** | **0.0892** | **1.0450** | **0.9551** | **7.0700e-003** | **0.4704** | **7.5700e-003** | **0.4779** | **0.1290** | **7.2000e-003** | **0.1362** | | **748.7971** | **748.7971** | **0.0230** | **0.0825** | **773.9462** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.6 Rough Grading - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.6370 | 25.2727 | 21.8718 | 0.0558 | | 1.0227 | 1.0227 | | 0.9409 | 0.9409 | 0.0000 | 5,404.1697 | 5,404.1697 | 1.7478 | | 5,447.8652 |
| **Total** | **2.6370** | **25.2727** | **21.8718** | **0.0558** | **9.2036** | **1.0227** | **10.2263** | **3.6538** | **0.9409** | **4.5946** | **0.0000** | **5,404.1697** | **5,404.1697** | **1.7478** | | **5,447.8652** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0236 | 1.0040 | 0.3268 | 4.9700e-003 | 0.1891 | 6.2300e-003 | 0.1953 | 0.0544 | 5.9600e-003 | 0.0604 | | 536.3986 | 536.3986 | 0.0190 | 0.0778 | 560.0510 |
| Worker | 0.0656 | 0.0410 | 0.6283 | 2.1000e-003 | 0.2813 | 1.3400e-003 | 0.2826 | 0.0746 | 1.2400e-003 | 0.0758 | | 212.3985 | 212.3985 | 4.0600e-003 | 4.6800e-003 | 213.8952 |
| **Total** | **0.0892** | **1.0450** | **0.9551** | **7.0700e-003** | **0.4704** | **7.5700e-003** | **0.4779** | **0.1290** | **7.2000e-003** | **0.1362** | | **748.7971** | **748.7971** | **0.0230** | **0.0825** | **773.9462** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.7 Buildings 2 and 3 Utility Trenching - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4983 | 12.4350 | 13.5444 | 0.0372 | | 0.5114 | 0.5114 | | 0.4704 | 0.4704 | | 3,597.4459 | 3,597.4459 | 1.1635 | | 3,626.5330 |
| **Total** | **1.4983** | **12.4350** | **13.5444** | **0.0372** | | **0.5114** | **0.5114** | | **0.4704** | **0.4704** | | **3,597.4459** | **3,597.4459** | **1.1635** | | **3,626.5330** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.0800e-003 | 0.3012 | 0.0980 | 1.4900e-003 | 0.0567 | 1.8700e-003 | 0.0586 | 0.0163 | 1.7900e-003 | 0.0181 | | 160.9196 | 160.9196 | 5.7000e-003 | 0.0233 | 168.0153 |
| Worker | 0.0492 | 0.0307 | 0.4712 | 1.5800e-003 | 0.2110 | 1.0100e-003 | 0.2120 | 0.0559 | 9.3000e-004 | 0.0569 | | 159.2989 | 159.2989 | 3.0500e-003 | 3.5100e-003 | 160.4214 |
| **Total** | **0.0563** | **0.3320** | **0.5693** | **3.0700e-003** | **0.2677** | **2.8800e-003** | **0.2706** | **0.0723** | **2.7200e-003** | **0.0750** | | **320.2184** | **320.2184** | **8.7500e-003** | **0.0268** | **328.4367** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.7 Buildings 2 and 3 Utility Trenching - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4983 | 12.4350 | 13.5444 | 0.0372 | | 0.5114 | 0.5114 | | 0.4704 | 0.4704 | 0.0000 | 3,597.4459 | 3,597.4459 | 1.1635 | | 3,626.5330 |
| **Total** | **1.4983** | **12.4350** | **13.5444** | **0.0372** | | **0.5114** | **0.5114** | | **0.4704** | **0.4704** | **0.0000** | **3,597.4459** | **3,597.4459** | **1.1635** | | **3,626.5330** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.0800e-003 | 0.3012 | 0.0980 | 1.4900e-003 | 0.0567 | 1.8700e-003 | 0.0586 | 0.0163 | 1.7900e-003 | 0.0181 | | 160.9196 | 160.9196 | 5.7000e-003 | 0.0233 | 168.0153 |
| Worker | 0.0492 | 0.0307 | 0.4712 | 1.5800e-003 | 0.2110 | 1.0100e-003 | 0.2120 | 0.0559 | 9.3000e-004 | 0.0569 | | 159.2989 | 159.2989 | 3.0500e-003 | 3.5100e-003 | 160.4214 |
| **Total** | **0.0563** | **0.3320** | **0.5693** | **3.0700e-003** | **0.2677** | **2.8800e-003** | **0.2706** | **0.0723** | **2.7200e-003** | **0.0750** | | **320.2184** | **320.2184** | **8.7500e-003** | **0.0268** | **328.4367** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1936 | 8.2330 | 2.6796 | 0.0408 | 1.5503 | 0.0511 | 1.6014 | 0.4461 | 0.0489 | 0.4950 | | 4,398.4682 | 4,398.4682 | 0.1557 | 0.6378 | 4,592.4179 |
| Worker | 1.3748 | 0.8588 | 13.1634 | 0.0440 | 5.8931 | 0.0281 | 5.9212 | 1.5627 | 0.0259 | 1.5886 | | 4,449.7483 | 4,449.7483 | 0.0851 | 0.0981 | 4,481.1053 |
| **Total** | **1.5684** | **9.0918** | **15.8431** | **0.0848** | **7.4433** | **0.0792** | **7.5226** | **2.0088** | **0.0748** | **2.0836** | | **8,848.2165** | **8,848.2165** | **0.2408** | **0.7359** | **9,073.5232** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1936 | 8.2330 | 2.6796 | 0.0408 | 1.5503 | 0.0511 | 1.6014 | 0.4461 | 0.0489 | 0.4950 | | 4,398.4682 | 4,398.4682 | 0.1557 | 0.6378 | 4,592.4179 |
| Worker | 1.3748 | 0.8588 | 13.1634 | 0.0440 | 5.8931 | 0.0281 | 5.9212 | 1.5627 | 0.0259 | 1.5886 | | 4,449.7483 | 4,449.7483 | 0.0851 | 0.0981 | 4,481.1053 |
| **Total** | **1.5684** | **9.0918** | **15.8431** | **0.0848** | **7.4433** | **0.0792** | **7.5226** | **2.0088** | **0.0748** | **2.0836** | | **8,848.2165** | **8,848.2165** | **0.2408** | **0.7359** | **9,073.5232** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1894 | 8.1691 | 2.6504 | 0.0399 | 1.5503 | 0.0509 | 1.6012 | 0.4461 | 0.0487 | 0.4948 | | 4,310.7563 | 4,310.7563 | 0.1554 | 0.6258 | 4,501.1190 |
| Worker | 1.3018 | 0.7842 | 12.4310 | 0.0428 | 5.8931 | 0.0264 | 5.9194 | 1.5627 | 0.0243 | 1.5870 | | 4,324.7100 | 4,324.7100 | 0.0777 | 0.0931 | 4,354.3832 |
| **Total** | **1.4912** | **8.9533** | **15.0813** | **0.0827** | **7.4433** | **0.0773** | **7.5206** | **2.0088** | **0.0730** | **2.0818** | | **8,635.4663** | **8,635.4663** | **0.2331** | **0.7188** | **8,855.5023** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.8 Buildings 2 and 3 Construction - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1894 | 8.1691 | 2.6504 | 0.0399 | 1.5503 | 0.0509 | 1.6012 | 0.4461 | 0.0487 | 0.4948 | | 4,310.7563 | 4,310.7563 | 0.1554 | 0.6258 | 4,501.1190 |
| Worker | 1.3018 | 0.7842 | 12.4310 | 0.0428 | 5.8931 | 0.0264 | 5.9194 | 1.5627 | 0.0243 | 1.5870 | | 4,324.7100 | 4,324.7100 | 0.0777 | 0.0931 | 4,354.3832 |
| **Total** | **1.4912** | **8.9533** | **15.0813** | **0.0827** | **7.4433** | **0.0773** | **7.5206** | **2.0088** | **0.0730** | **2.0818** | | **8,635.4663** | **8,635.4663** | **0.2331** | **0.7188** | **8,855.5023** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.9 Buildings 2 and 3 Architectural Coating - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 159.4855 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **159.6563** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5220 | 0.3144 | 4.9843 | 0.0172 | 2.3628 | 0.0106 | 2.3734 | 0.6266 | 9.7400e-003 | 0.6363 | | 1,734.0126 | 1,734.0126 | 0.0312 | 0.0373 | 1,745.9102 |
| **Total** | **0.5220** | **0.3144** | **4.9843** | **0.0172** | **2.3628** | **0.0106** | **2.3734** | **0.6266** | **9.7400e-003** | **0.6363** | | **1,734.0126** | **1,734.0126** | **0.0312** | **0.0373** | **1,745.9102** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.9 Buildings 2 and 3 Architectural Coating - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 159.4855 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **159.6563** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5220 | 0.3144 | 4.9843 | 0.0172 | 2.3628 | 0.0106 | 2.3734 | 0.6266 | 9.7400e-003 | 0.6363 | | 1,734.0126 | 1,734.0126 | 0.0312 | 0.0373 | 1,745.9102 |
| **Total** | **0.5220** | **0.3144** | **4.9843** | **0.0172** | **2.3628** | **0.0106** | **2.3734** | **0.6266** | **9.7400e-003** | **0.6363** | | **1,734.0126** | **1,734.0126** | **0.0312** | **0.0373** | **1,745.9102** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.10 Fine Grading - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.9012 | 27.9429 | 26.3311 | 0.0621 | | 1.1309 | 1.1309 | | 1.0404 | 1.0404 | | 6,008.2814 | 6,008.2814 | 1.9432 | | 6,056.8614 |
| **Total** | **2.9012** | **27.9429** | **26.3311** | **0.0621** | **9.2036** | **1.1309** | **10.3345** | **3.6538** | **1.0404** | **4.6942** | | **6,008.2814** | **6,008.2814** | **1.9432** | | **6,056.8614** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0231 | 0.9962 | 0.3232 | 4.8700e-003 | 0.1891 | 6.2100e-003 | 0.1953 | 0.0544 | 5.9400e-003 | 0.0603 | | 525.7020 | 525.7020 | 0.0190 | 0.0763 | 548.9170 |
| Worker | 0.0621 | 0.0374 | 0.5934 | 2.0400e-003 | 0.2813 | 1.2600e-003 | 0.2826 | 0.0746 | 1.1600e-003 | 0.0758 | | 206.4301 | 206.4301 | 3.7100e-003 | 4.4400e-003 | 207.8465 |
| **Total** | **0.0852** | **1.0337** | **0.9166** | **6.9100e-003** | **0.4704** | **7.4700e-003** | **0.4778** | **0.1290** | **7.1000e-003** | **0.1361** | | **732.1321** | **732.1321** | **0.0227** | **0.0808** | **756.7634** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.10 Fine Grading - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.9012 | 27.9429 | 26.3311 | 0.0621 | | 1.1309 | 1.1309 | | 1.0404 | 1.0404 | 0.0000 | 6,008.2814 | 6,008.2814 | 1.9432 | | 6,056.8614 |
| **Total** | **2.9012** | **27.9429** | **26.3311** | **0.0621** | **9.2036** | **1.1309** | **10.3345** | **3.6538** | **1.0404** | **4.6942** | **0.0000** | **6,008.2814** | **6,008.2814** | **1.9432** | | **6,056.8614** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0231 | 0.9962 | 0.3232 | 4.8700e-003 | 0.1891 | 6.2100e-003 | 0.1953 | 0.0544 | 5.9400e-003 | 0.0603 | | 525.7020 | 525.7020 | 0.0190 | 0.0763 | 548.9170 |
| Worker | 0.0621 | 0.0374 | 0.5934 | 2.0400e-003 | 0.2813 | 1.2600e-003 | 0.2826 | 0.0746 | 1.1600e-003 | 0.0758 | | 206.4301 | 206.4301 | 3.7100e-003 | 4.4400e-003 | 207.8465 |
| **Total** | **0.0852** | **1.0337** | **0.9166** | **6.9100e-003** | **0.4704** | **7.4700e-003** | **0.4778** | **0.1290** | **7.1000e-003** | **0.1361** | | **732.1321** | **732.1321** | **0.0227** | **0.0808** | **756.7634** |

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.11 Finishing/Landscaping - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4756 | 12.8417 | 15.3542 | 0.0353 | | 0.5399 | 0.5399 | | 0.4968 | 0.4968 | | 3,421.0904 | 3,421.0904 | 1.1065 | | 3,448.7517 |
| **Total** | **1.4756** | **12.8417** | **15.3542** | **0.0353** | | **0.5399** | **0.5399** | | **0.4968** | **0.4968** | | **3,421.0904** | **3,421.0904** | **1.1065** | | **3,448.7517** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0466 | 0.0281 | 0.4450 | 1.5300e-003 | 0.2110 | 9.4000e-004 | 0.2119 | 0.0559 | 8.7000e-004 | 0.0568 | | 154.8226 | 154.8226 | 2.7800e-003 | 3.3300e-003 | 155.8848 |
| **Total** | **0.0466** | **0.0281** | **0.4450** | **1.5300e-003** | **0.2110** | **9.4000e-004** | **0.2119** | **0.0559** | **8.7000e-004** | **0.0568** | | **154.8226** | **154.8226** | **2.7800e-003** | **3.3300e-003** | **155.8848** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 3.11 Finishing/Landscaping - 2027

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4756 | 12.8417 | 15.3542 | 0.0353 | | 0.5399 | 0.5399 | | 0.4968 | 0.4968 | 0.0000 | 3,421.0904 | 3,421.0904 | 1.1065 | | 3,448.7517 |
| **Total** | **1.4756** | **12.8417** | **15.3542** | **0.0353** | | **0.5399** | **0.5399** | | **0.4968** | **0.4968** | **0.0000** | **3,421.0904** | **3,421.0904** | **1.1065** | | **3,448.7517** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0466 | 0.0281 | 0.4450 | 1.5300e-003 | 0.2110 | 9.4000e-004 | 0.2119 | 0.0559 | 8.7000e-004 | 0.0568 | | 154.8226 | 154.8226 | 2.7800e-003 | 3.3300e-003 | 155.8848 |
| **Total** | **0.0466** | **0.0281** | **0.4450** | **1.5300e-003** | **0.2110** | **9.4000e-004** | **0.2119** | **0.0559** | **8.7000e-004** | **0.0568** | | **154.8226** | **154.8226** | **2.7800e-003** | **3.3300e-003** | **155.8848** |

## 4.0 Operational Detail - Mobile

Irwindale Gateway Project (Option 1) - South Coast AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 5.9843 | 6.9796 | 62.9040 | 0.1497 | 18.5671 | 0.1029 | 18.6700 | 4.9481 | 0.0958 | 5.0439 | | 15,274.6338 | 15,274.6338 | 0.9529 | 0.6528 | 15,492.9977 |
| Unmitigated | 5.9843 | 6.9796 | 62.9040 | 0.1497 | 18.5671 | 0.1029 | 18.6700 | 4.9481 | 0.0958 | 5.0439 | | 15,274.6338 | 15,274.6338 | 0.9529 | 0.6528 | 15,492.9977 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Unrefrigerated Warehouse-No Rail | 2,055.88 | 2,055.88 | 2055.88 | 8,810,920 | 8,810,920 |
| Total | 2,055.88 | 2,055.88 | 2,055.88 | 8,810,920 | 8,810,920 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Unrefrigerated Warehouse-No | 16.60 | 8.40 | 6.90 | 59.00 | 0.00 | 41.00 | 92 | 5 | 3 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 0.539139 | 0.063841 | 0.187327 | 0.126709 | 0.023805 | 0.006751 | 0.012629 | 0.009091 | 0.000821 | 0.000480 | 0.025164 | 0.000758 | 0.003487 |
| Parking Lot | 0.539139 | 0.063841 | 0.187327 | 0.126709 | 0.023805 | 0.006751 | 0.012629 | 0.009091 | 0.000821 | 0.000480 | 0.025164 | 0.000758 | 0.003487 |
| Unrefrigerated Warehouse-No Rail | 0.539139 | 0.063841 | 0.187327 | 0.126709 | 0.023805 | 0.006751 | 0.012629 | 0.009091 | 0.000821 | 0.000480 | 0.025164 | 0.000758 | 0.003487 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |
| NaturalGas Unmitigated | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 2350.97 | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |
| **Total** | | **0.0254** | **0.2305** | **0.1936** | **1.3800e-003** | | **0.0175** | **0.0175** | | **0.0175** | **0.0175** | | **276.5849** | **276.5849** | **5.3000e-003** | **5.0700e-003** | **278.2285** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unrefrigerated Warehouse-No Rail | 2.35097 | 0.0254 | 0.2305 | 0.1936 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | | 276.5849 | 276.5849 | 5.3000e-003 | 5.0700e-003 | 278.2285 |
| **Total** | | **0.0254** | **0.2305** | **0.1936** | **1.3800e-003** | | **0.0175** | **0.0175** | | **0.0175** | **0.0175** | | **276.5849** | **276.5849** | **5.3000e-003** | **5.0700e-003** | **278.2285** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 22.4464 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |
| Unmitigated | 22.4464 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.5578 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 19.8662 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 0.0224 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |
| **Total** | **22.4464** | **2.2100e-003** | **0.2434** | **2.0000e-005** | | **8.7000e-004** | **8.7000e-004** | | **8.7000e-004** | **8.7000e-004** | | **0.5231** | **0.5231** | **1.3600e-003** | | **0.5571** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.5578 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 19.8662 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 0.0224 | 2.2100e-003 | 0.2434 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5231 | 0.5231 | 1.3600e-003 | | 0.5571 |
| **Total** | **22.4464** | **2.2100e-003** | **0.2434** | **2.0000e-005** | | **8.7000e-004** | **8.7000e-004** | | **8.7000e-004** | **8.7000e-004** | | **0.5231** | **0.5231** | **1.3600e-003** | | **0.5571** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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## Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

**Geologic and Hydrogeologic Characterization**
**Investigation and Remediation Strategies**
**Litigation Support and Testifying Expert**
**Industrial Stormwater Compliance**
**CEQA Review**

**Education:**

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

**Professional Certifications:**

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

**Professional Experience:**

Matt has 30 years of experience in environmental policy, contaminant assessment and remediation, stormwater compliance, and CEQA review. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) and directed efforts to improve hydrogeologic characterization and water quality monitoring. For the past 15 years, as a founding partner with SWAPE, Matt has developed extensive client relationships and has managed complex projects that include consultation as an expert witness and a regulatory specialist, and a manager of projects ranging from industrial stormwater compliance to CEQA review of impacts from hazardous waste, air quality and greenhouse gas emissions.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2104, 2017;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

**Senior Regulatory and Litigation Support Analyst:**

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 300 environmental impact reports and negative declarations since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at more than 100 industrial facilities.
- Expert witness on numerous cases including, for example, perfluorooctanoic acid (PFOA) contamination of groundwater, MTBE litigation, air toxins at hazards at a school, CERCLA compliance in assessment and remediation, and industrial stormwater contamination.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

**Executive Director:**

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

**Hydrogeology:**

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted

public hearings, and responded to public comments from residents who were very concerned about the impact of designation.
- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:
- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:
- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

**Policy:**

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9.

Activities included the following:
- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific

principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

**Geology:**

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

**Teaching:**

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt is currently a part time geology instructor at Golden West College in Huntington Beach, California where he taught from 2010 to 2014 and in 2017.

**Invited Testimony, Reports, Papers and Presentations:**

**Hagemann, M.F**., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

**Hagemann, M.F**., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

**Hagemann, M.F.,** 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

**Hagemann, M.F.,** 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

**Hagemann, M.F.**, 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

**Hagemann, M.F.,** 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

**Hagemann, M.F.,** 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

**Hagemann, M.F**., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

**Hagemann, M.F**., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

**Hagemann, M.F**., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

**Hagemann, M.F**., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

**Hagemann, M.F**., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

**Hagemann, M.F**., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F**., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F**., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

**Hagemann, M.F**., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F**., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

**Hagemann, M.F**., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

**Hagemann, M.F**., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

**Hagemann, M.F**., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

**Hagemann, M.F**., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

**Hagemann, M.F**., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

**Hagemann, M.F**., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

**Hagemann, M.F**., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

**Hagemann, M.F**., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

**Hagemann, M. F**., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

**Hagemann, M.F**., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

**Hagemann, M.**F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

**Hagemann, M.F**., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

**Hagemann, M.F**., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

**Other Experience:**

Selected as subject matter expert for the California Professional Geologist licensing examinations, 2009-2011.

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**Email:** prosenfeld@swape.com

# *Paul Rosenfeld, Ph.D.*

**Chemical Fate and Transport & Air Dispersion Modeling**

*Principal Environmental Chemist*

**Risk Assessment & Remediation Specialist**

## Education

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Focus on wastewater treatment.

## Professional Experience

Dr. Rosenfeld has over 25 years of experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, industrial, military and agricultural sources, unconventional oil drilling operations, and locomotive and construction engines. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities. Dr. Rosenfeld has also successfully modeled exposure to contaminants distributed by water systems and via vapor intrusion.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, creosote, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at sites and has testified as an expert witness on numerous cases involving exposure to soil, water and air contaminants from industrial, railroad, agricultural, and military sources.

## Professional History:

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex $H_2O$ Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

## Publications:

**Rosenfeld P. E.,** Spaeth K., Hallman R., Bressler R., Smith, G., (2022) Cancer Risk and Diesel Exhaust Exposure Among Railroad Workers. *Water Air Soil Pollution.* **233,** 171.

Remy, L.L., Clay T., Byers, V., **Rosenfeld P. E.** (2019) Hospital, Health, and Community Burden After Oil Refinery Fires, Richmond, California 2007 and 2012. *Environmental Health.* 18:48

Simons, R.A., Seo, Y. **Rosenfeld, P**., (2015) Modeling the Effect of Refinery Emission On Residential Property Value. Journal of Real Estate Research. 27(3):321-342

Chen, J. A, Zapata A. R., Sutherland A. J., Molmen, D.R., Chow, B. S., Wu, L. E., **Rosenfeld, P. E.,** Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using Aermod and Empirical Data. *American Journal of Environmental Science*, 8(6), 622-632.

**Rosenfeld, P.E**. & Feng, L. (2011). *The Risks of Hazardous Waste.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2010). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences*. 113–125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.** (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health*. 73(6), 34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*. Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. *WIT Transactions on Ecology and the Environment, Air Pollution,* 123 (17), 319-327.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, 70, 002252-002255.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, 70, 000527-000530.

Hensley, A.R. A. Scott, J. J. J. Clark, **Rosenfeld, P.E.** (2007). Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility. *Environmental Research*. 105, 194-197.

**Rosenfeld, P.E.,** J. J. J. Clark, A. R. Hensley, M. Suffet. (2007). The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities. *Water Science & Technology* 55(5), 345-357.

**Rosenfeld, P. E.,** M. Suffet. (2007). The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment. *Water Science & Technology* 55(5), 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., **Rosenfeld, P.E.** (2007). *Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities.* Boston Massachusetts: Elsevier Publishing

**Rosenfeld, P.E.,** and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash. *Water Science and Technology*. 49(9),171-178.

**Rosenfeld P. E.,** J.J. Clark, I.H. (Mel) Suffet (2004). The Value of An Odor-Quality-Wheel Classification Scheme For The Urban Environment. *Water Environment Federation's Technical Exhibition and Conference (WEFTEC) 2004.* New Orleans, October 2-6, 2004.

**Rosenfeld, P.E.,** and Suffet, I.H. (2004). Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids. *Water Science and Technology*. 49(9), 193-199.

**Rosenfeld, P.E.,** and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash, *Water Science and Technology*, 49( 9), 171-178.

**Rosenfeld, P. E**., Grey, M. A., Sellew, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

**Rosenfeld, P.E.,** Grey, M and Suffet, M. (2002). Compost Demonstration Project, Sacramento California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Integrated Waste Management Board Public Affairs Office*, Publications Clearinghouse (MS–6), Sacramento, CA Publication #442-02-008.

**Rosenfeld, P.E**., and C.L. Henry. (2001). Characterization of odor emissions from three different biosolids. *Water Soil and Air Pollution*. 127(1-4), 173-191.

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**Rosenfeld, P.E.,** C.L. Henry and D. Bennett. (2001). Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. *Water Environment Research*. 73(4), 363-367.

**Rosenfeld, P.E.,** and C.L. Henry. (2001). Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants. *Water Environment Research*, 73, 388-393.

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**Rosenfeld, P. E.** (1992). The Mount Liamuiga Crater Trail. *Heritage Magazine of St. Kitts*, 3(2).

**Rosenfeld, P. E.** (1993). High School Biogas Project to Prevent Deforestation On St. Kitts. *Biomass Users Network*, 7(1).

**Rosenfeld, P. E. (**1998). Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

**Rosenfeld, P. E.** (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

**Rosenfeld, P. E. (**1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

## Presentations:

**Rosenfeld, P.E**., "The science for Perfluorinated Chemicals (PFAS): What makes remediation so hard?" Law Seminars International, (May 9-10, 2018) 800 Fifth Avenue, Suite 101 Seattle, WA.

**Rosenfeld, P.E.,** Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society.* Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution.* Lecture conducted from Boston, MA.

**Rosenfeld, P.E**. (April 19-23, 2009). Perfluoroctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

**Rosenfeld, P.E.** (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

**Rosenfeld, P. E.** (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23rd Annual International Conferences on Soils Sediment and Water.* Platform lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The *23rd Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld P. E.** (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

**Rosenfeld P. E.** (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting.* Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition.* Lecture conducted from Boston Massachusetts.

**Paul Rosenfeld Ph.D**. (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference.* Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

**Paul Rosenfeld Ph.D**. (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

**Paul Rosenfeld Ph.D**. (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference.* Lecture conducted from Hilton Hotel in Irvine, California.

**Paul Rosenfeld Ph.D**. (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference.* Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

**Paul Rosenfeld Ph.D**. (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

**Paul Rosenfeld Ph.D**. (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld Ph.D**. (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference.* Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

**Paul Rosenfeld, Ph.D.** (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

**Paul Rosenfeld, Ph.D.** (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

**Rosenfeld, P. E**., Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants*.. Lecture conducted from Hyatt Regency Phoenix Arizona.

**Paul Rosenfeld, Ph.D.** (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

**Paul Rosenfeld, Ph.D**. (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

**Rosenfeld, P.E**. and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

**Rosenfeld, P.E**. and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

**Rosenfeld, P.E.** and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

**Rosenfeld, P.E**. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conferenc*e. Lecture conducted from Indianapolis, Maryland.

**Rosenfeld. P.E.** (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation.* Lecture conducted from Anaheim California.

**Rosenfeld. P.E. (**October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest.* Lecture conducted from Ocean Shores, California.

**Rosenfeld, P.E. (**2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

**Rosenfeld, P.E**., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

**Rosenfeld, P.E.**, and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

**Rosenfeld, P.E.**, C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell.* Lecture conducted from Seattle Washington.

**Rosenfeld, P.E.**, C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest.* Lecture conducted from Lake Chelan, Washington.

**Rosenfeld, P.E,** C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

**Rosenfeld, P.E.**, C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

## Teaching Experience:

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

## Academic Grants Awarded:

California Integrated Waste Management Board. $41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: $10,000 grant awarded to San Diego State University.
Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. $100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. $20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: $10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: $15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. $500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

## Deposition and/or Trial Testimony:

In the Superior Court of the State of California, County of San Bernardino
Billy Wildrick, Plaintiff vs. BNSF Railway Company
Case No. CIVDS1711810
Rosenfeld Deposition 10-17-2022

In the State Court of Bibb County, State of Georgia
Richard Hutcherson, Plaintiff vs Norfolk Southern Railway Company
Case No. 10-SCCV-092007
Rosenfeld Deposition 10-6-2022

In the Civil District Court of the Parish of Orleans, State of Louisiana
Millard Clark, Plaintiff vs. Dixie Carriers, Inc. et al.
Case No. 2020-03891
Rosenfeld Deposition 9-15-2022

In The Circuit Court of Livingston County, State of Missouri, Circuit Civil Division
Shirley Ralls, Plaintiff vs. Canadian Pacific Railway and Soo Line Railroad
Case No. 18-LV-CC0020
Rosenfeld Deposition 9-7-2022

In The Circuit Court of the 13th Judicial Circuit Court, Hillsborough County, Florida Civil Division
Jonny C. Daniels, Plaintiff vs. CSX Transportation Inc.
Case No. 20-CA-5502
Rosenfeld Deposition 9-1-2022

In The Circuit Court of St. Louis County, State of Missouri
Kieth Luke et. al. Plaintiff vs. Monsanto Company et. al.
Case No. 19SL-CC03191
Rosenfeld Deposition 8-25-2022

In The Circuit Court of the 13th Judicial Circuit Court, Hillsborough County, Florida Civil Division
Jeffery S. Lamotte, Plaintiff vs. CSX Transportation Inc.
Case No. NO. 20-CA-0049
Rosenfeld Deposition 8-22-2022

In State of Minnesota District Court, County of St. Louis Sixth Judicial District
Greg Bean, Plaintiff vs. Soo Line Railroad Company
Case No. 69-DU-CV-21-760
Rosenfeld Deposition 8-17-2022

In United States District Court Western District of Washington at Tacoma, Washington
John D. Fitzgerald Plaintiff vs. BNSF
Case No. 3:21-cv-05288-RJB
Rosenfeld Deposition 8-11-2022

In Circuit Court of the Sixth Judicial Circuit, Macon Illinois
Rocky Bennyhoff Plaintiff vs. Norfolk Southern
Case No. 20-L-56
Rosenfeld Deposition 8-3-2022

In Court of Common Pleas, Hamilton County Ohio
Joe Briggins Plaintiff vs. CSX
Case No. A2004464
Rosenfeld Deposition 6-17-2022

In the Superior Court of the State of California, County of Kern
George LaFazia vs. BNSF Railway Company.
Case No. BCV-19-103087
Rosenfeld Deposition 5-17-2022

In the Circuit Court of Cook County Illinois
Bobby Earles vs. Penn Central et. al.
Case No. 2020-L-000550
Rosenfeld Deposition 4-16-2022

In United States District Court Easter District of Florida
Albert Hartman Plaintiff vs. Illinois Central
Case No. 2:20-cv-1633
Rosenfeld Deposition 4-4-2022

In the Circuit Court of the 4th Judicial Circuit, in and For Duval County, Florida
Barbara Steele vs. CSX Transportation
Case No.16-219-Ca-008796
Rosenfeld Deposition 3-15-2022

In United States District Court Easter District of New York
Romano et al. vs. Northrup Grumman Corporation
Case No. 16-cv-5760
Rosenfeld Deposition 3-10-2022

In the Circuit Court of Cook County Illinois
Linda Benjamin vs. Illinois Central
Case No. No. 2019 L 007599
Rosenfeld Deposition 1-26-2022

In the Circuit Court of Cook County Illinois
Donald Smith vs. Illinois Central
Case No. No. 2019 L 003426
Rosenfeld Deposition 1-24-2022

In the Circuit Court of Cook County Illinois
Jan Holeman vs. BNSF
Case No. 2019 L 000675
Rosenfeld Deposition 1-18-2022

In the State Court of Bibb County State of Georgia
Dwayne B. Garrett vs. Norfolk Southern
Case No. 20-SCCV-091232
Rosenfeld Deposition 11-10-2021

In the Circuit Court of Cook County Illinois
Joseph Ruepke vs. BNSF
Case No. 2019 L 007730
Rosenfeld Deposition 11-5-2021

In the United States District Court For the District of Nebraska
Steven Gillett vs. BNSF
Case No. 4:20-cv-03120
Rosenfeld Deposition 10-28-2021

In the Montana Thirteenth District Court of Yellowstone County
James Eadus vs. Soo Line Railroad and BNSF
Case No. DV 19-1056
Rosenfeld Deposition 10-21-2021

In the Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al.cvs. Cerro Flow Products, Inc.
Case No. 0i9-L-2295
Rosenfeld Deposition 5-14-2021
Trial October 8-4-2021

In the Circuit Court of Cook County Illinois
Joseph Rafferty vs. Consolidated Rail Corporation and National Railroad Passenger Corporation d/b/a AMTRAK,
Case No. 18-L-6845
Rosenfeld Deposition 6-28-2021

In the United States District Court For the Northern District of Illinois
Theresa Romcoe vs. Northeast Illinois Regional Commuter Railroad Corporation d/b/a METRA Rail
Case No. 17-cv-8517
Rosenfeld Deposition 5-25-2021

In the Superior Court of the State of Arizona In and For the Cunty of Maricopa
Mary Tryon et al. vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.
Case No. CV20127-094749
Rosenfeld Deposition 5-7-2021

In the United States District Court for the Eastern District of Texas Beaumont Division
Robinson, Jeremy et al vs. CNA Insurance Company et al.
Case No. 1:17-cv-000508
Rosenfeld Deposition 3-25-2021

In the Superior Court of the State of California, County of San Bernardino
Gary Garner, Personal Representative for the Estate of Melvin Garner vs. BNSF Railway Company.
Case No. 1720288
Rosenfeld Deposition 2-23-2021

In the Superior Court of the State of California, County of Los Angeles, Spring Street Courthouse
Benny M Rodriguez vs. Union Pacific Railroad, A Corporation, et al.
Case No. 18STCV01162
Rosenfeld Deposition 12-23-2020

In the Circuit Court of Jackson County, Missouri
Karen Cornwell, Plaintiff, vs. Marathon Petroleum, LP, Defendant.
Case No. 1716-CV10006
Rosenfeld Deposition 8-30-2019

In the United States District Court For The District of New Jersey
Duarte et al, Plaintiffs, vs. United States Metals Refining Company et. al. Defendant.
Case No. 2:17-cv-01624-ES-SCM
Rosenfeld Deposition 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division
M/T Carla Maersk vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS "Conti Perdido" Defendant.
Case No. 3:15-CV-00106 consolidated with 3:15-CV-00237
Rosenfeld Deposition 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants
Case No. BC615636
Rosenfeld Deposition 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants
Case No. BC646857
Rosenfeld Deposition 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiffs vs. The 3M Company et al., Defendants
Case No. 1:16-cv-02531-RBJ
Rosenfeld Deposition 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112th Judicial District
Phillip Bales et al., Plaintiff vs. Dow Agrosciences, LLC, et al., Defendants
Cause No. 1923
Rosenfeld Deposition 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa
Simons et al., Plaintifs vs. Chevron Corporation, et al., Defendants
Cause No. C12-01481
Rosenfeld Deposition 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition 8-23-2017

In United States District Court For The Southern District of Mississippi
Guy Manuel vs. The BP Exploration et al., Defendants
Case No. 1:19-cv-00315-RHW
Rosenfeld Deposition 4-22-2020

In The Superior Court of the State of California, For The County of Los Angeles
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC
Case No. LC102019 (c/w BC582154)
Rosenfeld Deposition 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division
Brenda J. Cooper, et al., Plaintiffs, vs. Meritor Inc., et al., Defendants
Case No. 4:16-cv-52-DMB-JVM
Rosenfeld Deposition July 2017

In The Superior Court of the State of Washington, County of Snohomish
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants
Case No. 13-2-03987-5
Rosenfeld Deposition, February 2017
Trial March 2017

In The Superior Court of the State of California, County of Alameda
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants
Case No. RG14711115
Rosenfeld Deposition September 2015

In The Iowa District Court In And For Poweshiek County
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants
Case No. LALA002187
Rosenfeld Deposition August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action No. 14-C-30000
Rosenfeld Deposition June 2015

In The Iowa District Court for Muscatine County
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant
Case No. 4980
Rosenfeld Deposition May 2015

In the Circuit Court of the 17th Judicial Circuit, in and For Broward County, Florida
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.
Case No. CACE07030358 (26)
Rosenfeld Deposition December 2014

In the County Court of Dallas County Texas
Lisa Parr et al, Plaintiff, vs. Aruba et al, Defendant.
Case No. cc-11-01650-E
Rosenfeld Deposition: March and September 2013
Rosenfeld Trial April 2014

In the Court of Common Pleas of Tuscarawas County Ohio
John Michael Abicht, et al., Plaintiffs, vs. Republic Services, Inc., et al., Defendants
Case No. 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
Rosenfeld Deposition October 2012

In the United States District Court for the Middle District of Alabama, Northern Division
James K. Benefield, et al., Plaintiffs, vs. International Paper Company, Defendant.
Civil Action No. 2:09-cv-232-WHA-TFM
Rosenfeld Deposition July 2010, June 2011

In the Circuit Court of Jefferson County Alabama
Jaeanette Moss Anthony, et al., Plaintiffs, vs. Drummond Company Inc., et al., Defendants
Civil Action No. CV 2008-2076
Rosenfeld Deposition September 2010

In the United States District Court, Western District Lafayette Division
Ackle et al., Plaintiffs, vs. Citgo Petroleum Corporation, et al., Defendants.
Case No. 2:07CV1052
Rosenfeld Deposition July 2009

# Appendix E. AQ/GHG CalEEMod Output Files

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# CalEEMod Outputs

# Construction (Option 1)

# Irwindale Gateway Project Construction (Option 1) Detailed Report

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4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Irwindale Gateway Project Construction (Option 1) |
| Construction Start Date | 7/15/2024 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 1.80 |
| Precipitation (days) | 22.4 |
| Location | 13620 Live Oak Ln, Irwindale, CA 91706, USA |
| County | Los Angeles-South Coast |
| City | Irwindale |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 4900 |
| EDFZ | 7 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.26 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 998 | 1000sqft | 22.6 | 997,796 | 0.00 | 0.00 | — | — |
| Parking Lot | 811 | 1000sqft | 18.6 | 0.00 | 0.00 | 0.00 | — | — |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 310 | 1000sqft | 7.12 | 0.00 | 310,164 | 0.00 | — | — |
| Other Non-Asphalt Surfaces | 201 | 1000sqft | 4.61 | 0.00 | 0.00 | 0.00 | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

| Sector | # | Measure Title |
|---|---|---|
| Construction | C-13 | Use Low-VOC Paints for Construction |

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 91.1 | 89.6 | 56.7 | 95.2 | 0.16 | 2.10 | 13.3 | 15.2 | 1.89 | 3.76 | 5.52 | — | 26,464 | 26,464 | 1.10 | 1.17 | 44.7 | 26,881 |
| Mit. | 13.2 | 11.7 | 56.7 | 95.2 | 0.16 | 2.10 | 13.3 | 15.2 | 1.89 | 3.76 | 5.52 | — | 26,464 | 26,464 | 1.10 | 1.17 | 44.7 | 26,881 |
| % Reduced | 85% | 87% | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 13.1 | 12.2 | 57.2 | 82.5 | 0.16 | 2.10 | 11.1 | 13.2 | 1.89 | 3.26 | 5.16 | — | 24,197 | 24,197 | 1.02 | 1.16 | 1.16 | 24,569 |
| Mit. | 8.97 | 7.42 | 57.2 | 82.5 | 0.16 | 2.10 | 11.1 | 13.2 | 1.89 | 3.26 | 5.16 | — | 24,197 | 24,197 | 1.02 | 1.16 | 1.16 | 24,569 |
| % Reduced | 32% | 39% | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unmit. | 14.2 | 13.9 | 9.95 | 21.0 | 0.03 | 0.26 | 3.59 | 3.85 | 0.24 | 0.90 | 1.14 | — | 6,680 | 6,680 | 0.21 | 0.43 | 6.35 | 6,819 |
| Mit. | 2.45 | 2.12 | 9.95 | 21.0 | 0.03 | 0.26 | 3.59 | 3.85 | 0.24 | 0.90 | 1.14 | — | 6,680 | 6,680 | 0.21 | 0.43 | 6.35 | 6,819 |
| % Reduced | 83% | 85% | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.59 | 2.53 | 1.82 | 3.83 | 0.01 | 0.05 | 0.66 | 0.70 | 0.04 | 0.16 | 0.21 | — | 1,106 | 1,106 | 0.03 | 0.07 | 1.05 | 1,129 |
| Mit. | 0.45 | 0.39 | 1.82 | 3.83 | 0.01 | 0.05 | 0.66 | 0.70 | 0.04 | 0.16 | 0.21 | — | 1,106 | 1,106 | 0.03 | 0.07 | 1.05 | 1,129 |
| % Reduced | 83% | 85% | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 5.96 | 4.94 | 33.2 | 62.9 | 0.09 | 1.22 | 7.12 | 8.34 | 1.13 | 1.73 | 2.86 | — | 17,450 | 17,450 | 0.71 | 1.01 | 39.0 | 17,807 |
| 2025 | 13.1 | 12.2 | 27.3 | 68.9 | 0.08 | 0.88 | 9.26 | 10.1 | 0.78 | 2.23 | 3.01 | — | 17,551 | 17,551 | 0.73 | 1.05 | 44.7 | 17,925 |
| 2026 | 8.98 | 7.44 | 56.7 | 86.7 | 0.16 | 2.10 | 11.1 | 13.2 | 1.89 | 3.26 | 5.16 | — | 24,514 | 24,514 | 1.01 | 1.16 | 36.8 | 24,922 |
| 2027 | 91.1 | 89.6 | 54.7 | 95.2 | 0.16 | 1.91 | 13.3 | 15.2 | 1.76 | 3.76 | 5.52 | — | 26,464 | 26,464 | 1.10 | 1.17 | 40.4 | 26,881 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 3.92 | 3.21 | 20.1 | 43.0 | 0.06 | 0.57 | 6.88 | 7.45 | 0.53 | 1.67 | 2.20 | — | 13,284 | 13,284 | 0.57 | 0.95 | 0.98 | 13,583 |
| 2025 | 13.1 | 12.2 | 27.8 | 62.6 | 0.08 | 0.88 | 9.26 | 10.1 | 0.78 | 2.23 | 3.01 | — | 17,119 | 17,119 | 0.74 | 1.06 | 1.16 | 17,455 |
| 2026 | 8.97 | 7.42 | 57.2 | 82.5 | 0.16 | 2.10 | 11.1 | 13.2 | 1.89 | 3.26 | 5.16 | — | 24,197 | 24,197 | 1.02 | 1.16 | 0.95 | 24,569 |
| 2027 | 3.22 | 2.64 | 16.8 | 36.9 | 0.06 | 0.37 | 6.88 | 7.25 | 0.35 | 1.67 | 2.02 | — | 12,680 | 12,680 | 0.38 | 0.91 | 0.79 | 12,961 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 1.42 | 1.17 | 7.52 | 15.6 | 0.02 | 0.23 | 2.27 | 2.50 | 0.21 | 0.55 | 0.76 | — | 4,679 | 4,679 | 0.20 | 0.32 | 5.43 | 4,785 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025 | 2.62 | 2.36 | 7.51 | 17.0 | 0.02 | 0.22 | 2.56 | 2.78 | 0.19 | 0.62 | 0.81 | — | 4,889 | 4,889 | 0.21 | 0.32 | 5.58 | 4,996 |
| 2026 | 1.07 | 0.87 | 6.25 | 11.2 | 0.02 | 0.20 | 1.70 | 1.90 | 0.18 | 0.45 | 0.62 | — | 3,452 | 3,452 | 0.15 | 0.21 | 3.12 | 3,523 |
| 2027 | 14.2 | 13.9 | 9.95 | 21.0 | 0.03 | 0.26 | 3.59 | 3.85 | 0.24 | 0.90 | 1.14 | — | 6,680 | 6,680 | 0.20 | 0.43 | 6.35 | 6,819 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.26 | 0.21 | 1.37 | 2.85 | < 0.005 | 0.04 | 0.41 | 0.46 | 0.04 | 0.10 | 0.14 | — | 775 | 775 | 0.03 | 0.05 | 0.90 | 792 |
| 2025 | 0.48 | 0.43 | 1.37 | 3.10 | < 0.005 | 0.04 | 0.47 | 0.51 | 0.04 | 0.11 | 0.15 | — | 809 | 809 | 0.03 | 0.05 | 0.92 | 827 |
| 2026 | 0.19 | 0.16 | 1.14 | 2.04 | < 0.005 | 0.04 | 0.31 | 0.35 | 0.03 | 0.08 | 0.11 | — | 572 | 572 | 0.02 | 0.04 | 0.52 | 583 |
| 2027 | 2.59 | 2.53 | 1.82 | 3.83 | 0.01 | 0.05 | 0.66 | 0.70 | 0.04 | 0.16 | 0.21 | — | 1,106 | 1,106 | 0.03 | 0.07 | 1.05 | 1,129 |

## 2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 5.96 | 4.94 | 33.2 | 62.9 | 0.09 | 1.22 | 7.12 | 8.34 | 1.13 | 1.73 | 2.86 | — | 17,450 | 17,450 | 0.71 | 1.01 | 39.0 | 17,807 |
| 2025 | 6.89 | 5.97 | 27.3 | 68.9 | 0.08 | 0.88 | 9.26 | 10.1 | 0.78 | 2.23 | 3.01 | — | 17,551 | 17,551 | 0.73 | 1.05 | 44.7 | 17,925 |
| 2026 | 8.98 | 7.44 | 56.7 | 86.7 | 0.16 | 2.10 | 11.1 | 13.2 | 1.89 | 3.26 | 5.16 | — | 24,514 | 24,514 | 1.01 | 1.16 | 36.8 | 24,922 |
| 2027 | 13.2 | 11.7 | 54.7 | 95.2 | 0.16 | 1.91 | 13.3 | 15.2 | 1.76 | 3.76 | 5.52 | — | 26,464 | 26,464 | 1.10 | 1.17 | 40.4 | 26,881 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 3.92 | 3.21 | 20.1 | 43.0 | 0.06 | 0.57 | 6.88 | 7.45 | 0.53 | 1.67 | 2.20 | — | 13,284 | 13,284 | 0.57 | 0.95 | 0.98 | 13,583 |
| 2025 | 6.86 | 5.94 | 27.8 | 62.6 | 0.08 | 0.88 | 9.26 | 10.1 | 0.78 | 2.23 | 3.01 | — | 17,119 | 17,119 | 0.74 | 1.06 | 1.16 | 17,455 |
| 2026 | 8.97 | 7.42 | 57.2 | 82.5 | 0.16 | 2.10 | 11.1 | 13.2 | 1.89 | 3.26 | 5.16 | — | 24,197 | 24,197 | 1.02 | 1.16 | 0.95 | 24,569 |
| 2027 | 3.22 | 2.64 | 16.8 | 36.9 | 0.06 | 0.37 | 6.88 | 7.25 | 0.35 | 1.67 | 2.02 | — | 12,680 | 12,680 | 0.38 | 0.91 | 0.79 | 12,961 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 1.42 | 1.17 | 7.52 | 15.6 | 0.02 | 0.23 | 2.27 | 2.50 | 0.21 | 0.55 | 0.76 | — | 4,679 | 4,679 | 0.20 | 0.32 | 5.43 | 4,785 |
| 2025 | 1.67 | 1.42 | 7.51 | 17.0 | 0.02 | 0.22 | 2.56 | 2.78 | 0.19 | 0.62 | 0.81 | — | 4,889 | 4,889 | 0.21 | 0.32 | 5.58 | 4,996 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2026 | 1.07 | 0.87 | 6.25 | 11.2 | 0.02 | 0.20 | 1.70 | 1.90 | 0.18 | 0.45 | 0.62 | — | 3,452 | 3,452 | 0.15 | 0.21 | 3.12 | 3,523 |
| 2027 | 2.45 | 2.12 | 9.95 | 21.0 | 0.03 | 0.26 | 3.59 | 3.85 | 0.24 | 0.90 | 1.14 | — | 6,680 | 6,680 | 0.20 | 0.43 | 6.35 | 6,819 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.26 | 0.21 | 1.37 | 2.85 | < 0.005 | 0.04 | 0.41 | 0.46 | 0.04 | 0.10 | 0.14 | — | 775 | 775 | 0.03 | 0.05 | 0.90 | 792 |
| 2025 | 0.31 | 0.26 | 1.37 | 3.10 | < 0.005 | 0.04 | 0.47 | 0.51 | 0.04 | 0.11 | 0.15 | — | 809 | 809 | 0.03 | 0.05 | 0.92 | 827 |
| 2026 | 0.19 | 0.16 | 1.14 | 2.04 | < 0.005 | 0.04 | 0.31 | 0.35 | 0.03 | 0.08 | 0.11 | — | 572 | 572 | 0.02 | 0.04 | 0.52 | 583 |
| 2027 | 0.45 | 0.39 | 1.82 | 3.83 | 0.01 | 0.05 | 0.66 | 0.70 | 0.04 | 0.16 | 0.21 | — | 1,106 | 1,106 | 0.03 | 0.07 | 1.05 | 1,129 |

# 3. Construction Emissions Details

## 3.1. Option 1 Rough Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.62 | 3.04 | 27.2 | 27.6 | 0.06 | 1.12 | — | 1.12 | 1.03 | — | 1.03 | — | 6,599 | 6,599 | 0.27 | 0.05 | — | 6,621 |
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 3.62 | 3.04 | 27.2 | 27.6 | 0.06 | 1.12 | — | 1.12 | 1.03 | — | 1.03 | — | 6,599 | 6,599 | 0.27 | 0.05 | — | 6,621 |
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.23 | 0.19 | 1.72 | 1.74 | < 0.005 | 0.07 | — | 0.07 | 0.07 | — | 0.07 | — | 416 | 416 | 0.02 | < 0.005 | — | 417 |
| Dust From Material Movement | — | — | — | — | — | — | 0.23 | 0.23 | — | 0.09 | 0.09 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.04 | 0.31 | 0.32 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 68.8 | 68.8 | < 0.005 | < 0.005 | — | 69.1 |
| Dust From Material Movement | — | — | — | — | — | — | 0.04 | 0.04 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.08 | 0.07 | 0.08 | 1.29 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 271 | 271 | 0.01 | 0.01 | 0.92 | 275 |
| Vendor | 0.05 | 0.02 | 0.69 | 0.33 | < 0.005 | 0.01 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 624 | 624 | 0.03 | 0.09 | 1.69 | 652 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.09 | 1.10 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 257 | 257 | 0.01 | 0.01 | 0.02 | 260 |
| Vendor | 0.04 | 0.02 | 0.72 | 0.34 | < 0.005 | 0.01 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 624 | 624 | 0.03 | 0.09 | 0.04 | 651 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | < 0.005 | 0.01 | 0.07 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 16.4 | 16.4 | < 0.005 | < 0.005 | 0.02 | 16.6 |
| Vendor | < 0.005 | < 0.005 | 0.05 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 39.3 | 39.3 | < 0.005 | 0.01 | 0.05 | 41.1 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.72 | 2.72 | < 0.005 | < 0.005 | < 0.005 | 2.76 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.51 | 6.51 | < 0.005 | < 0.005 | 0.01 | 6.80 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.2. Option 1 Rough Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.62 | 3.04 | 27.2 | 27.6 | 0.06 | 1.12 | — | 1.12 | 1.03 | — | 1.03 | — | 6,599 | 6,599 | 0.27 | 0.05 | — | 6,621 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.62 | 3.04 | 27.2 | 27.6 | 0.06 | 1.12 | — | 1.12 | 1.03 | — | 1.03 | — | 6,599 | 6,599 | 0.27 | 0.05 | — | 6,621 |
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.23 | 0.19 | 1.72 | 1.74 | < 0.005 | 0.07 | — | 0.07 | 0.07 | — | 0.07 | — | 416 | 416 | 0.02 | < 0.005 | — | 417 |
| Dust From Material Movement | — | — | — | — | — | — | 0.23 | 0.23 | — | 0.09 | 0.09 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.04 | 0.31 | 0.32 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 68.8 | 68.8 | < 0.005 | < 0.005 | — | 69.1 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 0.04 | 0.04 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.08 | 1.29 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 271 | 271 | 0.01 | 0.01 | 0.92 | 275 |
| Vendor | 0.05 | 0.02 | 0.69 | 0.33 | < 0.005 | 0.01 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 624 | 624 | 0.03 | 0.09 | 1.69 | 652 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.09 | 1.10 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 257 | 257 | 0.01 | 0.01 | 0.02 | 260 |
| Vendor | 0.04 | 0.02 | 0.72 | 0.34 | < 0.005 | 0.01 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 624 | 624 | 0.03 | 0.09 | 0.04 | 651 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | < 0.005 | 0.01 | 0.07 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 16.4 | 16.4 | < 0.005 | < 0.005 | 0.02 | 16.6 |
| Vendor | < 0.005 | < 0.005 | 0.05 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 39.3 | 39.3 | < 0.005 | 0.01 | 0.05 | 41.1 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.72 | 2.72 | < 0.005 | < 0.005 | < 0.005 | 2.76 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.51 | 6.51 | < 0.005 | < 0.005 | 0.01 | 6.80 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.3. Option 1 Fine Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.51 | 2.95 | 25.6 | 27.3 | 0.06 | 1.04 | — | 1.04 | 0.96 | — | 0.96 | — | 6,598 | 6,598 | 0.27 | 0.05 | — | 6,621 |
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.21 | 0.18 | 1.54 | 1.64 | < 0.005 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 398 | 398 | 0.02 | < 0.005 | — | 399 |
| Dust From Material Movement | — | — | — | — | — | — | 0.22 | 0.22 | — | 0.09 | 0.09 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.03 | 0.28 | 0.30 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 65.8 | 65.8 | < 0.005 | < 0.005 | — | 66.1 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 0.04 | 0.04 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.07 | 1.20 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 266 | 266 | 0.01 | 0.01 | 0.83 | 270 |
| Vendor | 0.04 | 0.02 | 0.66 | 0.31 | < 0.005 | < 0.005 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 611 | 611 | 0.03 | 0.08 | 1.59 | 639 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.01 | 0.06 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 15.4 | 15.4 | < 0.005 | < 0.005 | 0.02 | 15.6 |
| Vendor | < 0.005 | < 0.005 | 0.04 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 36.9 | 36.9 | < 0.005 | 0.01 | 0.04 | 38.5 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.55 | 2.55 | < 0.005 | < 0.005 | < 0.005 | 2.58 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.10 | 6.10 | < 0.005 | < 0.005 | 0.01 | 6.37 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.4. Option 1 Fine Grading (2027) - Mitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.51 | 2.95 | 25.6 | 27.3 | 0.06 | 1.04 | — | 1.04 | 0.96 | — | 0.96 | — | 6,598 | 6,598 | 0.27 | 0.05 | — | 6,621 |
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.21 | 0.18 | 1.54 | 1.64 | < 0.005 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 398 | 398 | 0.02 | < 0.005 | — | 399 |
| Dust From Material Movement | — | — | — | — | — | — | 0.22 | 0.22 | — | 0.09 | 0.09 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.03 | 0.28 | 0.30 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 65.8 | 65.8 | < 0.005 | < 0.005 | — | 66.1 |
| Dust From Material Movement | — | — | — | — | — | — | 0.04 | 0.04 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.07 | 1.20 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 266 | 266 | 0.01 | 0.01 | 0.83 | 270 |
| Vendor | 0.04 | 0.02 | 0.66 | 0.31 | < 0.005 | < 0.005 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 611 | 611 | 0.03 | 0.08 | 1.59 | 639 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.01 | 0.06 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 15.4 | 15.4 | < 0.005 | < 0.005 | 0.02 | 15.6 |
| Vendor | < 0.005 | < 0.005 | 0.04 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 36.9 | 36.9 | < 0.005 | 0.01 | 0.04 | 38.5 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.55 | 2.55 | < 0.005 | < 0.005 | < 0.005 | 2.58 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.10 | 6.10 | < 0.005 | < 0.005 | 0.01 | 6.37 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.5. Option 1 Building 1 Construction (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 1.44 | 1.20 | 11.2 | 13.1 | 0.02 | 0.50 | — | 0.50 | 0.46 | — | 0.46 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.44 | 1.20 | 11.2 | 13.1 | 0.02 | 0.50 | — | 0.50 | 0.46 | — | 0.46 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.48 | 0.40 | 3.73 | 4.36 | 0.01 | 0.17 | — | 0.17 | 0.15 | — | 0.15 | — | 798 | 798 | 0.03 | 0.01 | — | 800 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.09 | 0.07 | 0.68 | 0.80 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 132 | 132 | 0.01 | < 0.005 | — | 133 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 2.09 | 1.88 | 2.00 | 31.6 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,917 | 5,917 | 0.24 | 0.20 | 23.3 | 6,006 |
| Vendor | 0.42 | 0.16 | 6.21 | 3.05 | 0.04 | 0.07 | 1.40 | 1.47 | 0.07 | 0.39 | 0.46 | — | 5,276 | 5,276 | 0.22 | 0.73 | 14.3 | 5,512 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 2.07 | 1.85 | 2.37 | 26.7 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,608 | 5,608 | 0.25 | 0.21 | 0.61 | 5,677 |
| Vendor | 0.41 | 0.16 | 6.46 | 3.12 | 0.04 | 0.07 | 1.40 | 1.47 | 0.07 | 0.39 | 0.46 | — | 5,278 | 5,278 | 0.22 | 0.73 | 0.37 | 5,501 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.69 | 0.61 | 0.79 | 9.35 | 0.00 | 0.00 | 1.80 | 1.80 | 0.00 | 0.42 | 0.42 | — | 1,893 | 1,893 | 0.08 | 0.07 | 3.35 | 1,919 |
| Vendor | 0.14 | 0.05 | 2.17 | 1.03 | 0.01 | 0.02 | 0.46 | 0.48 | 0.02 | 0.13 | 0.15 | — | 1,756 | 1,756 | 0.07 | 0.24 | 2.05 | 1,831 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.13 | 0.11 | 0.14 | 1.71 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 313 | 313 | 0.01 | 0.01 | 0.55 | 318 |
| Vendor | 0.03 | 0.01 | 0.40 | 0.19 | < 0.005 | < 0.005 | 0.08 | 0.09 | < 0.005 | 0.02 | 0.03 | — | 291 | 291 | 0.01 | 0.04 | 0.34 | 303 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.6. Option 1 Building 1 Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.44 | 1.20 | 11.2 | 13.1 | 0.02 | 0.50 | — | 0.50 | 0.46 | — | 0.46 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.44 | 1.20 | 11.2 | 13.1 | 0.02 | 0.50 | — | 0.50 | 0.46 | — | 0.46 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.48 | 0.40 | 3.73 | 4.36 | 0.01 | 0.17 | — | 0.17 | 0.15 | — | 0.15 | — | 798 | 798 | 0.03 | 0.01 | — | 800 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.09 | 0.07 | 0.68 | 0.80 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 132 | 132 | 0.01 | < 0.005 | — | 133 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 2.09 | 1.88 | 2.00 | 31.6 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,917 | 5,917 | 0.24 | 0.20 | 23.3 | 6,006 |
| Vendor | 0.42 | 0.16 | 6.21 | 3.05 | 0.04 | 0.07 | 1.40 | 1.47 | 0.07 | 0.39 | 0.46 | — | 5,276 | 5,276 | 0.22 | 0.73 | 14.3 | 5,512 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 2.07 | 1.85 | 2.37 | 26.7 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,608 | 5,608 | 0.25 | 0.21 | 0.61 | 5,677 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.41 | 0.16 | 6.46 | 3.12 | 0.04 | 0.07 | 1.40 | 1.47 | 0.07 | 0.39 | 0.46 | — | 5,278 | 5,278 | 0.22 | 0.73 | 0.37 | 5,501 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.69 | 0.61 | 0.79 | 9.35 | 0.00 | 0.00 | 1.80 | 1.80 | 0.00 | 0.42 | 0.42 | — | 1,893 | 1,893 | 0.08 | 0.07 | 3.35 | 1,919 |
| Vendor | 0.14 | 0.05 | 2.17 | 1.03 | 0.01 | 0.02 | 0.46 | 0.48 | 0.02 | 0.13 | 0.15 | — | 1,756 | 1,756 | 0.07 | 0.24 | 2.05 | 1,831 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.13 | 0.11 | 0.14 | 1.71 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 313 | 313 | 0.01 | 0.01 | 0.55 | 318 |
| Vendor | 0.03 | 0.01 | 0.40 | 0.19 | < 0.005 | < 0.005 | 0.08 | 0.09 | < 0.005 | 0.02 | 0.03 | — | 291 | 291 | 0.01 | 0.04 | 0.34 | 303 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.7. Option 1 Building 1 Construction (2025) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.35 | 1.13 | 10.4 | 13.0 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.35 | 1.13 | 10.4 | 13.0 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.44 | 0.37 | 3.39 | 4.24 | 0.01 | 0.14 | — | 0.14 | 0.13 | — | 0.13 | — | 779 | 779 | 0.03 | 0.01 | — | 782 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.08 | 0.07 | 0.62 | 0.77 | < 0.005 | 0.03 | — | 0.03 | 0.02 | — | 0.02 | — | 129 | 129 | 0.01 | < 0.005 | — | 129 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 2.00 | 1.80 | 1.82 | 29.2 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,794 | 5,794 | 0.24 | 0.20 | 21.2 | 5,881 |
| Vendor | 0.37 | 0.15 | 5.90 | 2.88 | 0.04 | 0.07 | 1.40 | 1.47 | 0.04 | 0.39 | 0.42 | — | 5,188 | 5,188 | 0.22 | 0.73 | 14.2 | 5,425 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.99 | 1.78 | 2.01 | 24.7 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,492 | 5,492 | 0.25 | 0.21 | 0.55 | 5,561 |
| Vendor | 0.37 | 0.15 | 6.15 | 2.92 | 0.04 | 0.07 | 1.40 | 1.47 | 0.04 | 0.39 | 0.42 | — | 5,191 | 5,191 | 0.22 | 0.73 | 0.37 | 5,413 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.64 | 0.57 | 0.71 | 8.43 | 0.00 | 0.00 | 1.75 | 1.75 | 0.00 | 0.41 | 0.41 | — | 1,811 | 1,811 | 0.08 | 0.06 | 2.98 | 1,835 |
| Vendor | 0.12 | 0.05 | 2.01 | 0.94 | 0.01 | 0.02 | 0.45 | 0.47 | 0.01 | 0.12 | 0.14 | — | 1,686 | 1,686 | 0.07 | 0.24 | 2.00 | 1,760 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.12 | 0.10 | 0.13 | 1.54 | 0.00 | 0.00 | 0.32 | 0.32 | 0.00 | 0.07 | 0.07 | — | 300 | 300 | 0.01 | 0.01 | 0.49 | 304 |
| Vendor | 0.02 | 0.01 | 0.37 | 0.17 | < 0.005 | < 0.005 | 0.08 | 0.09 | < 0.005 | 0.02 | 0.02 | — | 279 | 279 | 0.01 | 0.04 | 0.33 | 291 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.8. Option 1 Building 1 Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.35 | 1.13 | 10.4 | 13.0 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.35 | 1.13 | 10.4 | 13.0 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.44 | 0.37 | 3.39 | 4.24 | 0.01 | 0.14 | — | 0.14 | 0.13 | — | 0.13 | — | 779 | 779 | 0.03 | 0.01 | — | 782 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.08 | 0.07 | 0.62 | 0.77 | < 0.005 | 0.03 | — | 0.03 | 0.02 | — | 0.02 | — | 129 | 129 | 0.01 | < 0.005 | — | 129 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 2.00 | 1.80 | 1.82 | 29.2 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,794 | 5,794 | 0.24 | 0.20 | 21.2 | 5,881 |
| Vendor | 0.37 | 0.15 | 5.90 | 2.88 | 0.04 | 0.07 | 1.40 | 1.47 | 0.04 | 0.39 | 0.42 | — | 5,188 | 5,188 | 0.22 | 0.73 | 14.2 | 5,425 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.99 | 1.78 | 2.01 | 24.7 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,492 | 5,492 | 0.25 | 0.21 | 0.55 | 5,561 |
| Vendor | 0.37 | 0.15 | 6.15 | 2.92 | 0.04 | 0.07 | 1.40 | 1.47 | 0.04 | 0.39 | 0.42 | — | 5,191 | 5,191 | 0.22 | 0.73 | 0.37 | 5,413 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.64 | 0.57 | 0.71 | 8.43 | 0.00 | 0.00 | 1.75 | 1.75 | 0.00 | 0.41 | 0.41 | — | 1,811 | 1,811 | 0.08 | 0.06 | 2.98 | 1,835 |
| Vendor | 0.12 | 0.05 | 2.01 | 0.94 | 0.01 | 0.02 | 0.45 | 0.47 | 0.01 | 0.12 | 0.14 | — | 1,686 | 1,686 | 0.07 | 0.24 | 2.00 | 1,760 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.12 | 0.10 | 0.13 | 1.54 | 0.00 | 0.00 | 0.32 | 0.32 | 0.00 | 0.07 | 0.07 | — | 300 | 300 | 0.01 | 0.01 | 0.49 | 304 |
| Vendor | 0.02 | 0.01 | 0.37 | 0.17 | < 0.005 | < 0.005 | 0.08 | 0.09 | < 0.005 | 0.02 | 0.02 | — | 279 | 279 | 0.01 | 0.04 | 0.33 | 291 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.9. Option 1 Buildings 2 and 3 Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.28 | 1.07 | 9.85 | 13.0 | 0.02 | 0.38 | — | 0.38 | 0.35 | — | 0.35 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.28 | 1.07 | 9.85 | 13.0 | 0.02 | 0.38 | — | 0.38 | 0.35 | — | 0.35 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.27 | 0.23 | 2.08 | 2.74 | < 0.005 | 0.08 | — | 0.08 | 0.07 | — | 0.07 | — | 507 | 507 | 0.02 | < 0.005 | — | 508 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.05 | 0.04 | 0.38 | 0.50 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 83.9 | 83.9 | < 0.005 | < 0.005 | — | 84.2 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.74 | 1.54 | 1.63 | 27.1 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,678 | 5,678 | 0.24 | 0.20 | 19.2 | 5,762 |
| Vendor | 0.37 | 0.15 | 5.62 | 2.72 | 0.04 | 0.07 | 1.40 | 1.47 | 0.04 | 0.39 | 0.42 | — | 5,099 | 5,099 | 0.21 | 0.73 | 13.8 | 5,335 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.74 | 1.53 | 1.82 | 23.1 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,383 | 5,383 | 0.24 | 0.20 | 0.50 | 5,449 |
| Vendor | 0.36 | 0.15 | 5.88 | 2.78 | 0.04 | 0.07 | 1.40 | 1.47 | 0.04 | 0.39 | 0.42 | — | 5,101 | 5,101 | 0.21 | 0.73 | 0.36 | 5,324 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.37 | 0.32 | 0.42 | 5.11 | 0.00 | 0.00 | 1.14 | 1.14 | 0.00 | 0.27 | 0.27 | — | 1,154 | 1,154 | 0.05 | 0.04 | 1.76 | 1,170 |
| Vendor | 0.08 | 0.03 | 1.25 | 0.58 | 0.01 | 0.02 | 0.29 | 0.31 | 0.01 | 0.08 | 0.09 | — | 1,078 | 1,078 | 0.04 | 0.15 | 1.26 | 1,126 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.08 | 0.93 | 0.00 | 0.00 | 0.21 | 0.21 | 0.00 | 0.05 | 0.05 | — | 191 | 191 | 0.01 | 0.01 | 0.29 | 194 |
| Vendor | 0.01 | 0.01 | 0.23 | 0.11 | < 0.005 | < 0.005 | 0.05 | 0.06 | < 0.005 | 0.01 | 0.02 | — | 178 | 178 | 0.01 | 0.03 | 0.21 | 186 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.10. Option 1 Buildings 2 and 3 Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.28 | 1.07 | 9.85 | 13.0 | 0.02 | 0.38 | — | 0.38 | 0.35 | — | 0.35 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.28 | 1.07 | 9.85 | 13.0 | 0.02 | 0.38 | — | 0.38 | 0.35 | — | 0.35 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.27 | 0.23 | 2.08 | 2.74 | < 0.005 | 0.08 | — | 0.08 | 0.07 | — | 0.07 | — | 507 | 507 | 0.02 | < 0.005 | — | 508 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.05 | 0.04 | 0.38 | 0.50 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 83.9 | 83.9 | < 0.005 | < 0.005 | — | 84.2 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 1.74 | 1.54 | 1.63 | 27.1 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,678 | 5,678 | 0.24 | 0.20 | 19.2 | 5,762 |
| Vendor | 0.37 | 0.15 | 5.62 | 2.72 | 0.04 | 0.07 | 1.40 | 1.47 | 0.04 | 0.39 | 0.42 | — | 5,099 | 5,099 | 0.21 | 0.73 | 13.8 | 5,335 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.74 | 1.53 | 1.82 | 23.1 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,383 | 5,383 | 0.24 | 0.20 | 0.50 | 5,449 |
| Vendor | 0.36 | 0.15 | 5.88 | 2.78 | 0.04 | 0.07 | 1.40 | 1.47 | 0.04 | 0.39 | 0.42 | — | 5,101 | 5,101 | 0.21 | 0.73 | 0.36 | 5,324 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.37 | 0.32 | 0.42 | 5.11 | 0.00 | 0.00 | 1.14 | 1.14 | 0.00 | 0.27 | 0.27 | — | 1,154 | 1,154 | 0.05 | 0.04 | 1.76 | 1,170 |
| Vendor | 0.08 | 0.03 | 1.25 | 0.58 | 0.01 | 0.02 | 0.29 | 0.31 | 0.01 | 0.08 | 0.09 | — | 1,078 | 1,078 | 0.04 | 0.15 | 1.26 | 1,126 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.08 | 0.93 | 0.00 | 0.00 | 0.21 | 0.21 | 0.00 | 0.05 | 0.05 | — | 191 | 191 | 0.01 | 0.01 | 0.29 | 194 |
| Vendor | 0.01 | 0.01 | 0.23 | 0.11 | < 0.005 | < 0.005 | 0.05 | 0.06 | < 0.005 | 0.01 | 0.02 | — | 178 | 178 | 0.01 | 0.03 | 0.21 | 186 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.11. Option 1 Buildings 2 and 3 Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.23 | 1.03 | 9.39 | 12.9 | 0.02 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.23 | 1.03 | 9.39 | 12.9 | 0.02 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.55 | 0.46 | 4.17 | 5.75 | 0.01 | 0.15 | — | 0.15 | 0.14 | — | 0.14 | — | 1,065 | 1,065 | 0.04 | 0.01 | — | 1,069 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.08 | 0.76 | 1.05 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 176 | 176 | 0.01 | < 0.005 | — | 177 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.69 | 1.49 | 1.45 | 25.2 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,569 | 5,569 | 0.24 | 0.20 | 17.4 | 5,652 |
| Vendor | 0.33 | 0.15 | 5.38 | 2.56 | 0.04 | 0.04 | 1.40 | 1.44 | 0.04 | 0.39 | 0.42 | — | 5,000 | 5,000 | 0.21 | 0.69 | 13.0 | 5,224 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 1.67 | 1.46 | 1.81 | 21.3 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,280 | 5,280 | 0.07 | 0.20 | 0.45 | 5,341 |
| Vendor | 0.32 | 0.15 | 5.60 | 2.62 | 0.04 | 0.04 | 1.40 | 1.44 | 0.04 | 0.39 | 0.42 | — | 5,003 | 5,003 | 0.21 | 0.69 | 0.34 | 5,214 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.74 | 0.65 | 0.80 | 9.96 | 0.00 | 0.00 | 2.40 | 2.40 | 0.00 | 0.56 | 0.56 | — | 2,380 | 2,380 | 0.03 | 0.09 | 3.32 | 2,411 |
| Vendor | 0.15 | 0.07 | 2.50 | 1.15 | 0.02 | 0.02 | 0.61 | 0.63 | 0.02 | 0.17 | 0.19 | — | 2,222 | 2,222 | 0.09 | 0.31 | 2.50 | 2,318 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.12 | 0.15 | 1.82 | 0.00 | 0.00 | 0.44 | 0.44 | 0.00 | 0.10 | 0.10 | — | 394 | 394 | 0.01 | 0.01 | 0.55 | 399 |
| Vendor | 0.03 | 0.01 | 0.46 | 0.21 | < 0.005 | < 0.005 | 0.11 | 0.12 | < 0.005 | 0.03 | 0.03 | — | 368 | 368 | 0.02 | 0.05 | 0.41 | 384 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.12. Option 1 Buildings 2 and 3 Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.23 | 1.03 | 9.39 | 12.9 | 0.02 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 1.23 | 1.03 | 9.39 | 12.9 | 0.02 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.55 | 0.46 | 4.17 | 5.75 | 0.01 | 0.15 | — | 0.15 | 0.14 | — | 0.14 | — | 1,065 | 1,065 | 0.04 | 0.01 | — | 1,069 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.08 | 0.76 | 1.05 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 176 | 176 | 0.01 | < 0.005 | — | 177 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.69 | 1.49 | 1.45 | 25.2 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,569 | 5,569 | 0.24 | 0.20 | 17.4 | 5,652 |
| Vendor | 0.33 | 0.15 | 5.38 | 2.56 | 0.04 | 0.04 | 1.40 | 1.44 | 0.04 | 0.39 | 0.42 | — | 5,000 | 5,000 | 0.21 | 0.69 | 13.0 | 5,224 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.67 | 1.46 | 1.81 | 21.3 | 0.00 | 0.00 | 5.48 | 5.48 | 0.00 | 1.28 | 1.28 | — | 5,280 | 5,280 | 0.07 | 0.20 | 0.45 | 5,341 |
| Vendor | 0.32 | 0.15 | 5.60 | 2.62 | 0.04 | 0.04 | 1.40 | 1.44 | 0.04 | 0.39 | 0.42 | — | 5,003 | 5,003 | 0.21 | 0.69 | 0.34 | 5,214 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.74 | 0.65 | 0.80 | 9.96 | 0.00 | 0.00 | 2.40 | 2.40 | 0.00 | 0.56 | 0.56 | — | 2,380 | 2,380 | 0.03 | 0.09 | 3.32 | 2,411 |
| Vendor | 0.15 | 0.07 | 2.50 | 1.15 | 0.02 | 0.02 | 0.61 | 0.63 | 0.02 | 0.17 | 0.19 | — | 2,222 | 2,222 | 0.09 | 0.31 | 2.50 | 2,318 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.12 | 0.15 | 1.82 | 0.00 | 0.00 | 0.44 | 0.44 | 0.00 | 0.10 | 0.10 | — | 394 | 394 | 0.01 | 0.01 | 0.55 | 399 |
| Vendor | 0.03 | 0.01 | 0.46 | 0.21 | < 0.005 | < 0.005 | 0.11 | 0.12 | < 0.005 | 0.03 | 0.03 | — | 368 | 368 | 0.02 | 0.05 | 0.41 | 384 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.13. Option 1 Building 1 Paving (2025) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.95 | 0.80 | 7.45 | 9.98 | 0.01 | 0.35 | — | 0.35 | 0.32 | — | 0.32 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,517 |
| Paving | 0.89 | 0.89 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.95 | 0.80 | 7.45 | 9.98 | 0.01 | 0.35 | — | 0.35 | 0.32 | — | 0.32 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,517 |
| Paving | 0.89 | 0.89 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.14 | 0.12 | 1.12 | 1.50 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 228 | 228 | 0.01 | < 0.005 | — | 229 |
| Paving | 0.13 | 0.13 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.20 | 0.27 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 37.7 | 37.7 | < 0.005 | < 0.005 | — | 37.8 |
| Paving | 0.02 | 0.02 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.06 | 1.04 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 207 | 207 | 0.01 | 0.01 | 0.76 | 210 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.07 | 0.88 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 197 | 197 | 0.01 | 0.01 | 0.02 | 199 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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| Worker | 0.01 | 0.01 | 0.01 | 0.14 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 30.1 | 30.1 | < 0.005 | < 0.005 | 0.05 | 30.5 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 4.98 | 4.98 | < 0.005 | < 0.005 | 0.01 | 5.04 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.14. Option 1 Building 1 Paving (2025) - Mitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.95 | 0.80 | 7.45 | 9.98 | 0.01 | 0.35 | — | 0.35 | 0.32 | — | 0.32 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,517 |
| Paving | 0.89 | 0.89 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.95 | 0.80 | 7.45 | 9.98 | 0.01 | 0.35 | — | 0.35 | 0.32 | — | 0.32 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,517 |
| Paving | 0.89 | 0.89 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.14 | 0.12 | 1.12 | 1.50 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 228 | 228 | 0.01 | < 0.005 | — | 229 |
| Paving | 0.13 | 0.13 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.20 | 0.27 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 37.7 | 37.7 | < 0.005 | < 0.005 | — | 37.8 |
| Paving | 0.02 | 0.02 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.06 | 1.04 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 207 | 207 | 0.01 | 0.01 | 0.76 | 210 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.07 | 0.88 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 197 | 197 | 0.01 | 0.01 | 0.02 | 199 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.14 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 30.1 | 30.1 | < 0.005 | < 0.005 | 0.05 | 30.5 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 4.98 | 4.98 | < 0.005 | < 0.005 | 0.01 | 5.04 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.15. Option 1 Building 1 Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.15 | 0.13 | 0.88 | 1.14 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 6.54 | 6.54 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.15 | 0.13 | 0.88 | 1.14 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 6.54 | 6.54 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.13 | 0.17 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 20.1 | 20.1 | < 0.005 | < 0.005 | — | 20.2 |
| Architectural Coatings | 0.99 | 0.99 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.02 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 3.33 | 3.33 | < 0.005 | < 0.005 | — | 3.34 |
| Architectural Coatings | 0.18 | 0.18 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.80 | 0.72 | 0.73 | 11.7 | 0.00 | 0.00 | 2.19 | 2.19 | 0.00 | 0.51 | 0.51 | — | 2,318 | 2,318 | 0.10 | 0.08 | 8.49 | 2,352 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.79 | 0.71 | 0.81 | 9.89 | 0.00 | 0.00 | 2.19 | 2.19 | 0.00 | 0.51 | 0.51 | — | 2,197 | 2,197 | 0.10 | 0.08 | 0.22 | 2,224 |

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| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.12 | 0.11 | 0.13 | 1.56 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 336 | 336 | 0.02 | 0.01 | 0.55 | 340 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.29 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 55.6 | 55.6 | < 0.005 | < 0.005 | 0.09 | 56.4 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.16. Option 1 Building 1 Architectural Coating (2025) - Mitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.15 | 0.13 | 0.88 | 1.14 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 0.30 | 0.30 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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| Off-Roa Equipment | 0.15 | 0.13 | 0.88 | 1.14 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 0.30 | 0.30 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.13 | 0.17 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 20.1 | 20.1 | < 0.005 | < 0.005 | — | 20.2 |
| Architectural Coatings | 0.04 | 0.04 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.02 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 3.33 | 3.33 | < 0.005 | < 0.005 | — | 3.34 |
| Architectural Coatings | 0.01 | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.80 | 0.72 | 0.73 | 11.7 | 0.00 | 0.00 | 2.19 | 2.19 | 0.00 | 0.51 | 0.51 | — | 2,318 | 2,318 | 0.10 | 0.08 | 8.49 | 2,352 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.79 | 0.71 | 0.81 | 9.89 | 0.00 | 0.00 | 2.19 | 2.19 | 0.00 | 0.51 | 0.51 | — | 2,197 | 2,197 | 0.10 | 0.08 | 0.22 | 2,224 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.12 | 0.11 | 0.13 | 1.56 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 336 | 336 | 0.02 | 0.01 | 0.55 | 340 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.29 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 55.6 | 55.6 | < 0.005 | < 0.005 | 0.09 | 56.4 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.17. Option 1 Buildings 2 and 3 Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.14 | 0.11 | 0.83 | 1.13 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 81.7 | 81.7 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.13 | 0.17 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 20.1 | 20.1 | < 0.005 | < 0.005 | — | 20.2 |
| Architectural Coatings | 12.3 | 12.3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.02 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 3.33 | 3.33 | < 0.005 | < 0.005 | — | 3.34 |
| Architectural Coatings | 2.25 | 2.25 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.68 | 0.60 | 0.58 | 10.1 | 0.00 | 0.00 | 2.20 | 2.20 | 0.00 | 0.51 | 0.51 | — | 2,233 | 2,233 | 0.09 | 0.08 | 6.96 | 2,266 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.10 | 0.09 | 0.11 | 1.35 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 324 | 324 | < 0.005 | 0.01 | 0.45 | 328 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.25 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 53.6 | 53.6 | < 0.005 | < 0.005 | 0.07 | 54.3 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.18. Option 1 Buildings 2 and 3 Architectural Coating (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.14 | 0.11 | 0.83 | 1.13 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 3.80 | 3.80 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.13 | 0.17 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 20.1 | 20.1 | < 0.005 | < 0.005 | — | 20.2 |
| Architectural Coatings | 0.57 | 0.57 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.02 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 3.33 | 3.33 | < 0.005 | < 0.005 | — | 3.34 |
| Architectural Coatings | 0.10 | 0.10 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.68 | 0.60 | 0.58 | 10.1 | 0.00 | 0.00 | 2.20 | 2.20 | 0.00 | 0.51 | 0.51 | — | 2,233 | 2,233 | 0.09 | 0.08 | 6.96 | 2,266 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.10 | 0.09 | 0.11 | 1.35 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 324 | 324 | < 0.005 | 0.01 | 0.45 | 328 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.25 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 53.6 | 53.6 | < 0.005 | < 0.005 | 0.07 | 54.3 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.19. Option 1 Building 1 Utility Trenching (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.93 | 1.62 | 13.5 | 13.8 | 0.03 | 0.64 | — | 0.64 | 0.59 | — | 0.59 | — | 3,454 | 3,454 | 0.14 | 0.03 | — | 3,466 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.12 | 0.10 | 0.81 | 0.83 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 208 | 208 | 0.01 | < 0.005 | — | 209 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.02 | 0.02 | 0.15 | 0.15 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 34.5 | 34.5 | < 0.005 | < 0.005 | — | 34.6 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.07 | 0.07 | 1.13 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 212 | 212 | 0.01 | 0.01 | 0.84 | 215 |
| Vendor | 0.02 | 0.01 | 0.23 | 0.11 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 194 | 194 | 0.01 | 0.03 | 0.52 | 202 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.01 | 0.06 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | 0.02 | 12.4 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 11.7 | 11.7 | < 0.005 | < 0.005 | 0.01 | 12.2 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.03 | 2.03 | < 0.005 | < 0.005 | < 0.005 | 2.06 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.93 | 1.93 | < 0.005 | < 0.005 | < 0.005 | 2.02 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.20. Option 1 Building 1 Utility Trenching (2024) - Mitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Roa Equipment | 1.93 | 1.62 | 13.5 | 13.8 | 0.03 | 0.64 | — | 0.64 | 0.59 | — | 0.59 | — | 3,454 | 3,454 | 0.14 | 0.03 | — | 3,466 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Roa d Equipm ent | 0.12 | 0.10 | 0.81 | 0.83 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 208 | 208 | 0.01 | < 0.005 | — | 209 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Roa d Equipm ent | 0.02 | 0.02 | 0.15 | 0.15 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 34.5 | 34.5 | < 0.005 | < 0.005 | — | 34.6 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.07 | 0.07 | 1.13 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 212 | 212 | 0.01 | 0.01 | 0.84 | 215 |
| Vendor | 0.02 | 0.01 | 0.23 | 0.11 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 194 | 194 | 0.01 | 0.03 | 0.52 | 202 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.01 | 0.06 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | 0.02 | 12.4 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 11.7 | 11.7 | < 0.005 | < 0.005 | 0.01 | 12.2 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.03 | 2.03 | < 0.005 | < 0.005 | < 0.005 | 2.06 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.93 | 1.93 | < 0.005 | < 0.005 | < 0.005 | 2.02 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.21. Option 1 Buildings 2 and 3 Utility Trenching (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.76 | 1.48 | 11.4 | 13.7 | 0.03 | 0.51 | — | 0.51 | 0.47 | — | 0.47 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.76 | 1.48 | 11.4 | 13.7 | 0.03 | 0.51 | — | 0.51 | 0.47 | — | 0.47 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 0.11 | 0.09 | 0.72 | 0.86 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 218 | 218 | 0.01 | < 0.005 | — | 219 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.13 | 0.16 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 36.1 | 36.1 | < 0.005 | < 0.005 | — | 36.2 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.06 | 0.06 | 0.97 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 203 | 203 | 0.01 | 0.01 | 0.69 | 206 |
| Vendor | 0.01 | 0.01 | 0.21 | 0.10 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 187 | 187 | 0.01 | 0.03 | 0.51 | 196 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.07 | 0.83 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 193 | 193 | 0.01 | 0.01 | 0.02 | 195 |
| Vendor | 0.01 | 0.01 | 0.22 | 0.10 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 187 | 187 | 0.01 | 0.03 | 0.01 | 195 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | 0.02 | 12.5 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 11.8 | 11.8 | < 0.005 | < 0.005 | 0.01 | 12.3 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.04 | 2.04 | < 0.005 | < 0.005 | < 0.005 | 2.07 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.95 | 1.95 | < 0.005 | < 0.005 | < 0.005 | 2.04 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.22. Option 1 Buildings 2 and 3 Utility Trenching (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.76 | 1.48 | 11.4 | 13.7 | 0.03 | 0.51 | — | 0.51 | 0.47 | — | 0.47 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.76 | 1.48 | 11.4 | 13.7 | 0.03 | 0.51 | — | 0.51 | 0.47 | — | 0.47 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11 | 0.09 | 0.72 | 0.86 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 218 | 218 | 0.01 | < 0.005 | — | 219 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Roa Equipment | 0.02 | 0.02 | 0.13 | 0.16 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 36.1 | 36.1 | < 0.005 | < 0.005 | — | 36.2 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.06 | 0.06 | 0.97 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 203 | 203 | 0.01 | 0.01 | 0.69 | 206 |
| Vendor | 0.01 | 0.01 | 0.21 | 0.10 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 187 | 187 | 0.01 | 0.03 | 0.51 | 196 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.07 | 0.83 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 193 | 193 | 0.01 | 0.01 | 0.02 | 195 |
| Vendor | 0.01 | 0.01 | 0.22 | 0.10 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 187 | 187 | 0.01 | 0.03 | 0.01 | 195 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | 0.02 | 12.5 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 11.8 | 11.8 | < 0.005 | < 0.005 | 0.01 | 12.3 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.04 | 2.04 | < 0.005 | < 0.005 | < 0.005 | 2.07 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.95 | 1.95 | < 0.005 | < 0.005 | < 0.005 | 2.04 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.23. Option 1 Finishing/Landscaping (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.70 | 1.43 | 10.7 | 13.6 | 0.03 | 0.47 | — | 0.47 | 0.43 | — | 0.43 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.09 | 0.65 | 0.82 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 208 | 208 | 0.01 | < 0.005 | — | 209 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.12 | 0.15 | < 0.005 | 0.01 | — | 0.01 | < 0.005 | — | < 0.005 | — | 34.5 | 34.5 | < 0.005 | < 0.005 | — | 34.6 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.05 | 0.90 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 199 | 199 | 0.01 | 0.01 | 0.62 | 202 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 11.6 | 11.6 | < 0.005 | < 0.005 | 0.02 | 11.7 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.91 | 1.91 | < 0.005 | < 0.005 | < 0.005 | 1.94 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.24. Option 1 Finishing/Landscaping (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.70 | 1.43 | 10.7 | 13.6 | 0.03 | 0.47 | — | 0.47 | 0.43 | — | 0.43 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipm | 0.10 | 0.09 | 0.65 | 0.82 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 208 | 208 | 0.01 | < 0.005 | — | 209 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.12 | 0.15 | < 0.005 | 0.01 | — | 0.01 | < 0.005 | — | < 0.005 | — | 34.5 | 34.5 | < 0.005 | < 0.005 | — | 34.6 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.05 | 0.90 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 199 | 199 | 0.01 | 0.01 | 0.62 | 202 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 11.6 | 11.6 | < 0.005 | < 0.005 | 0.02 | 11.7 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.91 | 1.91 | < 0.005 | < 0.005 | < 0.005 | 1.94 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# 4. Operations Emissions Details

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Option 1 Rough Grading | Grading | 9/15/2026 | 10/15/2026 | 5.00 | 23.0 | — |
| Option 1 Fine Grading | Grading | 7/15/2027 | 8/15/2027 | 5.00 | 22.0 | — |
| Option 1 Building 1 Construction | Building Construction | 7/15/2024 | 6/15/2025 | 5.00 | 240 | — |
| Option 1 Buildings 2 and 3 Construction | Building Construction | 9/15/2026 | 8/15/2027 | 5.00 | 239 | — |
| Option 1 Building 1 Paving | Paving | 3/30/2025 | 6/15/2025 | 5.00 | 55.0 | — |
| Option 1 Building 1 Architectural Coating | Architectural Coating | 3/30/2025 | 6/15/2025 | 5.00 | 55.0 | — |
| Option 1 Buildings 2 and 3 Architectural Coating | Architectural Coating | 5/31/2027 | 8/15/2027 | 5.00 | 55.0 | — |
| Option 1 Building 1 Utility Trenching | Trenching | 7/15/2024 | 8/13/2024 | 5.00 | 22.0 | — |

| | | | | | | |
|---|---|---|---|---|---|---|
| Option 1 Buildings 2 and 3 Utility Trenching | Trenching | 9/15/2026 | 10/15/2026 | 5.00 | 23.0 | — |
| Option 1 Finishing/Landscaping | Trenching | 7/15/2027 | 8/13/2027 | 5.00 | 22.0 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Option 1 Rough Grading | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Rough Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Option 1 Rough Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| Option 1 Rough Grading | Scrapers | Diesel | Average | 2.00 | 8.00 | 423 | 0.48 |
| Option 1 Rough Grading | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Option 1 Fine Grading | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Fine Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Option 1 Fine Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| Option 1 Fine Grading | Scrapers | Diesel | Average | 2.00 | 8.00 | 423 | 0.48 |
| Option 1 Fine Grading | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Option 1 Building 1 Construction | Cranes | Diesel | Average | 1.00 | 7.00 | 367 | 0.29 |
| Option 1 Building 1 Construction | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Option 1 Building 1 Construction | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Option 1 Building 1 Construction | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 7.00 | 84.0 | 0.37 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Option 1 Building 1 Construction | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |
| Option 1 Buildings 2 and 3 Construction | Cranes | Diesel | Average | 1.00 | 7.00 | 367 | 0.29 |
| Option 1 Buildings 2 and 3 Construction | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Option 1 Buildings 2 and 3 Construction | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Option 1 Buildings 2 and 3 Construction | Tractors/Loaders/Back hoes | Diesel | Average | 3.00 | 7.00 | 84.0 | 0.37 |
| Option 1 Buildings 2 and 3 Construction | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |
| Option 1 Building 1 Paving | Pavers | Diesel | Average | 2.00 | 8.00 | 81.0 | 0.42 |
| Option 1 Building 1 Paving | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |
| Option 1 Building 1 Paving | Rollers | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Building 1 Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| Option 1 Buildings 2 and 3 Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| Option 1 Building 1 Utility Trenching | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 1 Building 1 Utility Trenching | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 1 Building 1 Utility Trenching | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Building 1 Utility Trenching | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 1 Building 1 Utility Trenching | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Option 1 Buildings 2 and 3 Utility Trenching | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Option 1 Buildings 2 and 3 Utility Trenching | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 1 Buildings 2 and 3 Utility Trenching | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Buildings 2 and 3 Utility Trenching | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 1 Buildings 2 and 3 Utility Trenching | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Option 1 Finishing/Landscaping | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 1 Finishing/Landscaping | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 1 Finishing/Landscaping | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Finishing/Landscaping | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 1 Finishing/Landscaping | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |

### 5.2.2. Mitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Option 1 Rough Grading | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Rough Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Option 1 Rough Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| Option 1 Rough Grading | Scrapers | Diesel | Average | 2.00 | 8.00 | 423 | 0.48 |
| Option 1 Rough Grading | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Option 1 Fine Grading | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Fine Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Option 1 Fine Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| Option 1 Fine Grading | Scrapers | Diesel | Average | 2.00 | 8.00 | 423 | 0.48 |
| Option 1 Fine Grading | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Option 1 Building 1 Construction | Cranes | Diesel | Average | 1.00 | 7.00 | 367 | 0.29 |
| Option 1 Building 1 Construction | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Option 1 Building 1 Construction | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Option 1 Building 1 Construction | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 7.00 | 84.0 | 0.37 |
| Option 1 Building 1 Construction | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |
| Option 1 Buildings 2 and 3 Construction | Cranes | Diesel | Average | 1.00 | 7.00 | 367 | 0.29 |
| Option 1 Buildings 2 and 3 Construction | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Option 1 Buildings 2 and 3 Construction | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Option 1 Buildings 2 and 3 Construction | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 7.00 | 84.0 | 0.37 |
| Option 1 Buildings 2 and 3 Construction | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |
| Option 1 Building 1 Paving | Pavers | Diesel | Average | 2.00 | 8.00 | 81.0 | 0.42 |
| Option 1 Building 1 Paving | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |
| Option 1 Building 1 Paving | Rollers | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Building 1 Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| Option 1 Buildings 2 and 3 Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Option 1 Building 1 Utility Trenching | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 1 Building 1 Utility Trenching | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 1 Building 1 Utility Trenching | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Building 1 Utility Trenching | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 1 Building 1 Utility Trenching | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Option 1 Buildings 2 and 3 Utility Trenching | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 1 Buildings 2 and 3 Utility Trenching | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 1 Buildings 2 and 3 Utility Trenching | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Buildings 2 and 3 Utility Trenching | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 1 Buildings 2 and 3 Utility Trenching | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Option 1 Finishing/Landscaping | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 1 Finishing/Landscaping | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 1 Finishing/Landscaping | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 1 Finishing/Landscaping | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 1 Finishing/Landscaping | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Option 1 Rough Grading | — | — | — | — |
| Option 1 Rough Grading | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Rough Grading | Vendor | 20.0 | 10.2 | HHDT,MHDT |
| Option 1 Rough Grading | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Rough Grading | Onsite truck | 0.00 | — | HHDT |
| Option 1 Building 1 Construction | — | — | — | — |
| Option 1 Building 1 Construction | Worker | 419 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Building 1 Construction | Vendor | 164 | 10.2 | HHDT,MHDT |
| Option 1 Building 1 Construction | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Building 1 Construction | Onsite truck | 0.00 | — | HHDT |
| Option 1 Building 1 Paving | — | — | — | — |
| Option 1 Building 1 Paving | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Building 1 Paving | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 1 Building 1 Paving | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Building 1 Paving | Onsite truck | 0.00 | — | HHDT |
| Option 1 Building 1 Architectural Coating | — | — | — | — |
| Option 1 Building 1 Architectural Coating | Worker | 168 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Building 1 Architectural Coating | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 1 Building 1 Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Building 1 Architectural Coating | Onsite truck | 0.00 | — | HHDT |
| Option 1 Fine Grading | — | — | — | — |
| Option 1 Fine Grading | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Fine Grading | Vendor | 20.0 | 10.2 | HHDT,MHDT |
| Option 1 Fine Grading | Hauling | 0.00 | 20.0 | HHDT |

| | | | | |
|---|---|---|---|---|
| Option 1 Fine Grading | Onsite truck | 0.00 | — | HHDT |
| Option 1 Buildings 2 and 3 Construction | — | — | — | — |
| Option 1 Buildings 2 and 3 Construction | Worker | 419 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Buildings 2 and 3 Construction | Vendor | 164 | 10.2 | HHDT,MHDT |
| Option 1 Buildings 2 and 3 Construction | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Buildings 2 and 3 Construction | Onsite truck | 0.00 | — | HHDT |
| Option 1 Buildings 2 and 3 Architectural Coating | — | — | — | — |
| Option 1 Buildings 2 and 3 Architectural Coating | Worker | 168 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Buildings 2 and 3 Architectural Coating | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 1 Buildings 2 and 3 Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Buildings 2 and 3 Architectural Coating | Onsite truck | 0.00 | — | HHDT |
| Option 1 Building 1 Utility Trenching | — | — | — | — |
| Option 1 Building 1 Utility Trenching | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Building 1 Utility Trenching | Vendor | 6.00 | 10.2 | HHDT,MHDT |
| Option 1 Building 1 Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Building 1 Utility Trenching | Onsite truck | 0.00 | — | HHDT |
| Option 1 Buildings 2 and 3 Utility Trenching | — | — | — | — |
| Option 1 Buildings 2 and 3 Utility Trenching | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Buildings 2 and 3 Utility Trenching | Vendor | 6.00 | 10.2 | HHDT,MHDT |
| Option 1 Buildings 2 and 3 Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |

| | | | | |
|---|---|---|---|---|
| Option 1 Buildings 2 and 3 Utility Trenching | Onsite truck | 0.00 | — | HHDT |
| Option 1 Finishing/Landscaping | — | — | — | — |
| Option 1 Finishing/Landscaping | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Finishing/Landscaping | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 1 Finishing/Landscaping | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Finishing/Landscaping | Onsite truck | 0.00 | — | HHDT |

### 5.3.2. Mitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Option 1 Rough Grading | — | — | — | — |
| Option 1 Rough Grading | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Rough Grading | Vendor | 20.0 | 10.2 | HHDT,MHDT |
| Option 1 Rough Grading | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Rough Grading | Onsite truck | 0.00 | — | HHDT |
| Option 1 Building 1 Construction | — | — | — | — |
| Option 1 Building 1 Construction | Worker | 419 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Building 1 Construction | Vendor | 164 | 10.2 | HHDT,MHDT |
| Option 1 Building 1 Construction | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Building 1 Construction | Onsite truck | 0.00 | — | HHDT |
| Option 1 Building 1 Paving | — | — | — | — |
| Option 1 Building 1 Paving | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Building 1 Paving | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 1 Building 1 Paving | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Building 1 Paving | Onsite truck | 0.00 | — | HHDT |
| Option 1 Building 1 Architectural Coating | — | — | — | — |
| Option 1 Building 1 Architectural Coating | Worker | 168 | 18.5 | LDA,LDT1,LDT2 |

| | | | | |
|---|---|---|---|---|
| Option 1 Building 1 Architectural Coating | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 1 Building 1 Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Building 1 Architectural Coating | Onsite truck | 0.00 | — | HHDT |
| Option 1 Fine Grading | — | — | — | — |
| Option 1 Fine Grading | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Fine Grading | Vendor | 20.0 | 10.2 | HHDT,MHDT |
| Option 1 Fine Grading | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Fine Grading | Onsite truck | 0.00 | — | HHDT |
| Option 1 Buildings 2 and 3 Construction | — | — | — | — |
| Option 1 Buildings 2 and 3 Construction | Worker | 419 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Buildings 2 and 3 Construction | Vendor | 164 | 10.2 | HHDT,MHDT |
| Option 1 Buildings 2 and 3 Construction | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Buildings 2 and 3 Construction | Onsite truck | 0.00 | — | HHDT |
| Option 1 Buildings 2 and 3 Architectural Coating | — | — | — | — |
| Option 1 Buildings 2 and 3 Architectural Coating | Worker | 168 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Buildings 2 and 3 Architectural Coating | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 1 Buildings 2 and 3 Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Buildings 2 and 3 Architectural Coating | Onsite truck | 0.00 | — | HHDT |
| Option 1 Building 1 Utility Trenching | — | — | — | — |
| Option 1 Building 1 Utility Trenching | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |

| | | | | |
|---|---|---|---|---|
| Option 1 Building 1 Utility Trenching | Vendor | 6.00 | 10.2 | HHDT,MHDT |
| Option 1 Building 1 Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Building 1 Utility Trenching | Onsite truck | 0.00 | — | HHDT |
| Option 1 Buildings 2 and 3 Utility Trenching | — | — | — | — |
| Option 1 Buildings 2 and 3 Utility Trenching | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Buildings 2 and 3 Utility Trenching | Vendor | 6.00 | 10.2 | HHDT,MHDT |
| Option 1 Buildings 2 and 3 Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Buildings 2 and 3 Utility Trenching | Onsite truck | 0.00 | — | HHDT |
| Option 1 Finishing/Landscaping | — | — | — | — |
| Option 1 Finishing/Landscaping | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 1 Finishing/Landscaping | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 1 Finishing/Landscaping | Hauling | 0.00 | 20.0 | HHDT |
| Option 1 Finishing/Landscaping | Onsite truck | 0.00 | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

| Control Strategies Applied | PM10 Reduction | PM2.5 Reduction |
|---|---|---|
| Water unpaved roads twice daily | 55% | 55% |
| Limit vehicle speeds on unpaved roads to 25 mph | 44% | 44% |
| Sweep paved roads once per month | 9% | 9% |

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Option 1 Building 1 Architectural Coating | 0.00 | 0.00 | 111,165 | 37,055 | 3,516 |
| Option 1 Buildings 2 and 3 Architectural Coating | 0.00 | 0.00 | 1,385,529 | 461,843 | 45,120 |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Option 1 Rough Grading | 0.00 | 0.00 | 69.0 | 0.00 | — |
| Option 1 Fine Grading | 0.00 | 0.00 | 66.0 | 0.00 | — |
| Option 1 Building 1 Paving | 0.00 | 0.00 | 0.00 | 0.00 | 30.3 |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|---|---|---|---|
| Water Exposed Area | 2 | 61% | 61% |

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| Unrefrigerated Warehouse-No Rail | 0.00 | 0% |
| Parking Lot | 18.6 | 100% |
| Other Non-Asphalt Surfaces | 7.12 | 0% |
| Other Non-Asphalt Surfaces | 4.61 | 0% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 2024 | 0.00 | 450 | 0.03 | < 0.005 |
| 2025 | 0.00 | 450 | 0.03 | < 0.005 |
| 2026 | 0.00 | 450 | 0.03 | < 0.005 |
| 2027 | 0.00 | 450 | 0.03 | < 0.005 |

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

#### 5.18.1.2. Mitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

#### 5.18.1.2. Mitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

#### 5.18.2.2. Mitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 22.5 | annual days of extreme heat |
| Extreme Precipitation | 6.00 | annual days with precipitation above 20 mm |
| Sea Level Rise | 0.00 | meters of inundation depth |
| Wildfire | 0.00 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 0 | 0 | N/A |
| Wildfire | 1 | 0 | 0 | N/A |

| | | | | |
|---|---|---|---|---|
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 1 | 1 | 3 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 82.6 |
| AQ-PM | 66.5 |
| AQ-DPM | 68.2 |
| Drinking Water | 84.6 |
| Lead Risk Housing | 67.8 |
| Pesticides | 53.5 |
| Toxic Releases | 75.3 |
| Traffic | 88.3 |
| Effect Indicators | — |
| CleanUp Sites | 83.1 |
| Groundwater | 92.7 |
| Haz Waste Facilities/Generators | 91.7 |
| Impaired Water Bodies | 43.8 |
| Solid Waste | 99.3 |
| Sensitive Population | — |
| Asthma | 54.4 |
| Cardio-vascular | 36.6 |
| Low Birth Weights | 36.1 |
| Socioeconomic Factor Indicators | — |
| Education | 69.8 |
| Housing | 35.3 |
| Linguistic | 36.5 |
| Poverty | 48.7 |
| Unemployment | 73.4 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | — |
| Employed | — |
| Median HI | — |
| Education | — |
| Bachelor's or higher | — |
| High school enrollment | — |
| Preschool enrollment | — |
| Transportation | — |
| Auto Access | — |
| Active commuting | — |
| Social | — |
| 2-parent households | — |
| Voting | — |
| Neighborhood | — |
| Alcohol availability | — |
| Park access | — |
| Retail density | — |
| Supermarket access | — |
| Tree canopy | — |
| Housing | — |
| Homeownership | — |
| Housing habitability | — |
| Low-inc homeowner severe housing cost burden | — |
| Low-inc renter severe housing cost burden | — |

| | |
|---|---|
| Uncrowded housing | — |
| Health Outcomes | — |
| Insured adults | — |
| Arthritis | 0.0 |
| Asthma ER Admissions | 58.6 |
| High Blood Pressure | 0.0 |
| Cancer (excluding skin) | 0.0 |
| Asthma | 0.0 |
| Coronary Heart Disease | 0.0 |
| Chronic Obstructive Pulmonary Disease | 0.0 |
| Diagnosed Diabetes | 0.0 |
| Life Expectancy at Birth | 0.0 |
| Cognitively Disabled | 87.2 |
| Physically  Disabled | 24.6 |
| Heart Attack ER Admissions | 66.5 |
| Mental Health Not Good | 0.0 |
| Chronic Kidney Disease | 0.0 |
| Obesity | 0.0 |
| Pedestrian Injuries | 0.0 |
| Physical Health Not Good | 0.0 |
| Stroke | 0.0 |
| Health Risk Behaviors | — |
| Binge Drinking | 0.0 |
| Current Smoker | 0.0 |
| No Leisure Time for Physical Activity | 0.0 |
| Climate Change Exposures | — |
| Wildfire Risk | 1.3 |
| SLR Inundation Area | 0.0 |

| | |
|---|---|
| Children | 19.0 |
| Elderly | 62.6 |
| English Speaking | 0.0 |
| Foreign-born | 0.0 |
| Outdoor Workers | 37.5 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 29.6 |
| Traffic Density | 0.0 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 0.0 |
| Other Decision Support | — |
| 2016 Voting | 0.0 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 83.0 |
| Healthy Places Index Score for Project Location (b) | — |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | Yes |
| Project Located in a Low-Income Community (Assembly Bill 1550) | Yes |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Characteristics: Project Details | — |
| Characteristics: Utility Information | 2021 SCE Sustainability Report |
| Construction: Construction Phases | based on the construction schedule provided by the applicant |
| Construction: Off-Road Equipment | Building 1 Trenching, Buildings 2 and 3 Trenching, and Finishing/Landscaping equipment based on equipment mix approved by Applicant |
| Construction: Trips and VMT | see assumptions file for water truck trips calculations |
| Land Use | modified lot acreage adjusted to account for multiple stories |
| Construction: Architectural Coatings | SCAQMD Rule 1113. Building 1 and Buildings 2 and 3 coating are separated based on the area of the buildings. See assumptions file for calculations. |
| Construction: Electricity | 2021 SCE Sustainability Report |

# Construction (Option 2)

# Irwindale Gateway Project Construction (Option 2) Detailed Report

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8. User Changes to Default Data

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Irwindale Gateway Project Construction (Option 2) |
| Construction Start Date | 7/15/2024 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 1.80 |
| Precipitation (days) | 22.4 |
| Location | 13620 Live Oak Ln, Irwindale, CA 91706, USA |
| County | Los Angeles-South Coast |
| City | Irwindale |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 4900 |
| EDFZ | 7 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.26 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 704 | 1000sqft | 15.8 | 704,070 | 0.00 | 0.00 | — | — |
| Parking Lot | 581 | 1000sqft | 13.3 | 0.00 | 0.00 | 0.00 | — | — |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 180 | 1000sqft | 4.14 | 0.00 | 180,333 | 0.00 | — | — |
| Other Non-Asphalt Surfaces | 857 | 1000sqft | 19.7 | 0.00 | 0.00 | 0.00 | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

| Sector | # | Measure Title |
|---|---|---|
| Construction | C-13 | Use Low-VOC Paints for Construction |

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 72.2 | 70.8 | 54.6 | 84.1 | 0.15 | 2.08 | 10.6 | 12.5 | 1.88 | 3.12 | 4.87 | — | 22,692 | 22,692 | 0.94 | 0.89 | 29.4 | 23,009 |
| Mit. | 12.8 | 11.4 | 54.6 | 84.1 | 0.15 | 2.08 | 10.6 | 12.5 | 1.88 | 3.12 | 4.87 | — | 22,692 | 22,692 | 0.94 | 0.89 | 29.4 | 23,009 |
| % Reduced | 82% | 84% | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 8.35 | 6.93 | 55.0 | 74.8 | 0.15 | 2.08 | 9.12 | 11.2 | 1.88 | 2.77 | 4.66 | — | 21,111 | 21,111 | 0.88 | 0.89 | 0.70 | 21,398 |
| Mit. | 8.35 | 6.93 | 55.0 | 74.8 | 0.15 | 2.08 | 9.12 | 11.2 | 1.88 | 2.77 | 4.66 | — | 21,111 | 21,111 | 0.88 | 0.89 | 0.70 | 21,398 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unmit. | 11.2 | 10.9 | 8.94 | 17.3 | 0.03 | 0.26 | 2.61 | 2.86 | 0.24 | 0.66 | 0.90 | — | 5,230 | 5,230 | 0.16 | 0.31 | 4.51 | 5,330 |
| Mit. | 2.22 | 1.94 | 8.94 | 17.3 | 0.03 | 0.26 | 2.61 | 2.86 | 0.24 | 0.66 | 0.90 | — | 5,230 | 5,230 | 0.16 | 0.31 | 4.51 | 5,330 |
| % Reduced | 80% | 82% | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.04 | 1.99 | 1.63 | 3.16 | 0.01 | 0.05 | 0.48 | 0.52 | 0.04 | 0.12 | 0.16 | — | 866 | 866 | 0.03 | 0.05 | 0.75 | 882 |
| Mit. | 0.41 | 0.35 | 1.63 | 3.16 | 0.01 | 0.05 | 0.48 | 0.52 | 0.04 | 0.12 | 0.16 | — | 866 | 866 | 0.03 | 0.05 | 0.75 | 882 |
| % Reduced | 80% | 82% | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 5.23 | 4.34 | 30.8 | 52.7 | 0.08 | 1.20 | 5.10 | 6.30 | 1.10 | 1.24 | 2.34 | — | 14,155 | 14,155 | 0.58 | 0.73 | 27.9 | 14,416 |
| 2025 | 4.68 | 4.00 | 23.4 | 46.7 | 0.06 | 0.83 | 5.05 | 5.88 | 0.74 | 1.22 | 1.97 | — | 11,866 | 11,866 | 0.49 | 0.69 | 25.7 | 12,111 |
| 2026 | 8.35 | 6.94 | 54.6 | 77.9 | 0.15 | 2.08 | 9.12 | 11.2 | 1.88 | 2.77 | 4.66 | — | 21,342 | 21,342 | 0.87 | 0.89 | 27.1 | 21,655 |
| 2027 | 72.2 | 70.8 | 52.5 | 84.1 | 0.15 | 1.89 | 10.6 | 12.5 | 1.75 | 3.12 | 4.87 | — | 22,692 | 22,692 | 0.94 | 0.89 | 29.4 | 23,009 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 3.19 | 2.62 | 17.5 | 34.2 | 0.05 | 0.55 | 4.85 | 5.40 | 0.51 | 1.18 | 1.69 | — | 10,079 | 10,079 | 0.43 | 0.68 | 0.69 | 10,293 |
| 2025 | 4.67 | 3.99 | 23.7 | 43.4 | 0.06 | 0.83 | 5.05 | 5.88 | 0.74 | 1.22 | 1.97 | — | 11,644 | 11,644 | 0.50 | 0.70 | 0.67 | 11,866 |
| 2026 | 8.35 | 6.93 | 55.0 | 74.8 | 0.15 | 2.08 | 9.12 | 11.2 | 1.88 | 2.77 | 4.66 | — | 21,111 | 21,111 | 0.88 | 0.89 | 0.70 | 21,398 |
| 2027 | 2.63 | 2.16 | 14.6 | 29.8 | 0.05 | 0.36 | 4.85 | 5.22 | 0.34 | 1.18 | 1.51 | — | 9,653 | 9,653 | 0.30 | 0.65 | 0.56 | 9,854 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 1.18 | 0.97 | 6.65 | 12.6 | 0.02 | 0.22 | 1.61 | 1.83 | 0.21 | 0.39 | 0.60 | — | 3,605 | 3,605 | 0.15 | 0.23 | 3.84 | 3,681 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025 | 1.22 | 1.03 | 6.44 | 12.5 | 0.02 | 0.21 | 1.58 | 1.79 | 0.19 | 0.38 | 0.57 | — | 3,504 | 3,504 | 0.15 | 0.22 | 3.56 | 3,577 |
| 2026 | 0.94 | 0.77 | 5.76 | 9.51 | 0.02 | 0.19 | 1.28 | 1.47 | 0.17 | 0.35 | 0.52 | — | 2,795 | 2,795 | 0.12 | 0.16 | 2.23 | 2,847 |
| 2027 | 11.2 | 10.9 | 8.94 | 17.3 | 0.03 | 0.26 | 2.61 | 2.86 | 0.24 | 0.66 | 0.90 | — | 5,230 | 5,230 | 0.16 | 0.31 | 4.51 | 5,330 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.22 | 0.18 | 1.21 | 2.30 | < 0.005 | 0.04 | 0.29 | 0.33 | 0.04 | 0.07 | 0.11 | — | 597 | 597 | 0.03 | 0.04 | 0.64 | 609 |
| 2025 | 0.22 | 0.19 | 1.18 | 2.28 | < 0.005 | 0.04 | 0.29 | 0.33 | 0.03 | 0.07 | 0.10 | — | 580 | 580 | 0.02 | 0.04 | 0.59 | 592 |
| 2026 | 0.17 | 0.14 | 1.05 | 1.74 | < 0.005 | 0.04 | 0.23 | 0.27 | 0.03 | 0.06 | 0.09 | — | 463 | 463 | 0.02 | 0.03 | 0.37 | 471 |
| 2027 | 2.04 | 1.99 | 1.63 | 3.16 | 0.01 | 0.05 | 0.48 | 0.52 | 0.04 | 0.12 | 0.16 | — | 866 | 866 | 0.03 | 0.05 | 0.75 | 882 |

## 2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 5.23 | 4.34 | 30.8 | 52.7 | 0.08 | 1.20 | 5.10 | 6.30 | 1.10 | 1.24 | 2.34 | — | 14,155 | 14,155 | 0.58 | 0.73 | 27.9 | 14,416 |
| 2025 | 4.68 | 4.00 | 23.4 | 46.7 | 0.06 | 0.83 | 5.05 | 5.88 | 0.74 | 1.22 | 1.97 | — | 11,866 | 11,866 | 0.49 | 0.69 | 25.7 | 12,111 |
| 2026 | 8.35 | 6.94 | 54.6 | 77.9 | 0.15 | 2.08 | 9.12 | 11.2 | 1.88 | 2.77 | 4.66 | — | 21,342 | 21,342 | 0.87 | 0.89 | 27.1 | 21,655 |
| 2027 | 12.8 | 11.4 | 52.5 | 84.1 | 0.15 | 1.89 | 10.6 | 12.5 | 1.75 | 3.12 | 4.87 | — | 22,692 | 22,692 | 0.94 | 0.89 | 29.4 | 23,009 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 3.19 | 2.62 | 17.5 | 34.2 | 0.05 | 0.55 | 4.85 | 5.40 | 0.51 | 1.18 | 1.69 | — | 10,079 | 10,079 | 0.43 | 0.68 | 0.69 | 10,293 |
| 2025 | 4.67 | 3.99 | 23.7 | 43.4 | 0.06 | 0.83 | 5.05 | 5.88 | 0.74 | 1.22 | 1.97 | — | 11,644 | 11,644 | 0.50 | 0.70 | 0.67 | 11,866 |
| 2026 | 8.35 | 6.93 | 55.0 | 74.8 | 0.15 | 2.08 | 9.12 | 11.2 | 1.88 | 2.77 | 4.66 | — | 21,111 | 21,111 | 0.88 | 0.89 | 0.70 | 21,398 |
| 2027 | 2.63 | 2.16 | 14.6 | 29.8 | 0.05 | 0.36 | 4.85 | 5.22 | 0.34 | 1.18 | 1.51 | — | 9,653 | 9,653 | 0.30 | 0.65 | 0.56 | 9,854 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 1.18 | 0.97 | 6.65 | 12.6 | 0.02 | 0.22 | 1.61 | 1.83 | 0.21 | 0.39 | 0.60 | — | 3,605 | 3,605 | 0.15 | 0.23 | 3.84 | 3,681 |
| 2025 | 1.22 | 1.03 | 6.44 | 12.5 | 0.02 | 0.21 | 1.58 | 1.79 | 0.19 | 0.38 | 0.57 | — | 3,504 | 3,504 | 0.15 | 0.22 | 3.56 | 3,577 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2026 | 0.94 | 0.77 | 5.76 | 9.51 | 0.02 | 0.19 | 1.28 | 1.47 | 0.17 | 0.35 | 0.52 | — | 2,795 | 2,795 | 0.12 | 0.16 | 2.23 | 2,847 |
| 2027 | 2.22 | 1.94 | 8.94 | 17.3 | 0.03 | 0.26 | 2.61 | 2.86 | 0.24 | 0.66 | 0.90 | — | 5,230 | 5,230 | 0.16 | 0.31 | 4.51 | 5,330 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.22 | 0.18 | 1.21 | 2.30 | < 0.005 | 0.04 | 0.29 | 0.33 | 0.04 | 0.07 | 0.11 | — | 597 | 597 | 0.03 | 0.04 | 0.64 | 609 |
| 2025 | 0.22 | 0.19 | 1.18 | 2.28 | < 0.005 | 0.04 | 0.29 | 0.33 | 0.03 | 0.07 | 0.10 | — | 580 | 580 | 0.02 | 0.04 | 0.59 | 592 |
| 2026 | 0.17 | 0.14 | 1.05 | 1.74 | < 0.005 | 0.04 | 0.23 | 0.27 | 0.03 | 0.06 | 0.09 | — | 463 | 463 | 0.02 | 0.03 | 0.37 | 471 |
| 2027 | 0.41 | 0.35 | 1.63 | 3.16 | 0.01 | 0.05 | 0.48 | 0.52 | 0.04 | 0.12 | 0.16 | — | 866 | 866 | 0.03 | 0.05 | 0.75 | 882 |

# 3. Construction Emissions Details

## 3.1. Option 2 Rough Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.62 | 3.04 | 27.2 | 27.6 | 0.06 | 1.12 | — | 1.12 | 1.03 | — | 1.03 | — | 6,599 | 6,599 | 0.27 | 0.05 | — | 6,621 |
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 3.62 | 3.04 | 27.2 | 27.6 | 0.06 | 1.12 | — | 1.12 | 1.03 | — | 1.03 | — | 6,599 | 6,599 | 0.27 | 0.05 | — | 6,621 |
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.23 | 0.19 | 1.72 | 1.74 | < 0.005 | 0.07 | — | 0.07 | 0.07 | — | 0.07 | — | 416 | 416 | 0.02 | < 0.005 | — | 417 |
| Dust From Material Movement | — | — | — | — | — | — | 0.23 | 0.23 | — | 0.09 | 0.09 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.04 | 0.31 | 0.32 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 68.8 | 68.8 | < 0.005 | < 0.005 | — | 69.1 |
| Dust From Material Movement | — | — | — | — | — | — | 0.04 | 0.04 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.08 | 0.07 | 0.08 | 1.29 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 271 | 271 | 0.01 | 0.01 | 0.92 | 275 |
| Vendor | 0.05 | 0.02 | 0.69 | 0.33 | < 0.005 | 0.01 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 624 | 624 | 0.03 | 0.09 | 1.69 | 652 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.09 | 1.10 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 257 | 257 | 0.01 | 0.01 | 0.02 | 260 |
| Vendor | 0.04 | 0.02 | 0.72 | 0.34 | < 0.005 | 0.01 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 624 | 624 | 0.03 | 0.09 | 0.04 | 651 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | < 0.005 | 0.01 | 0.07 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 16.4 | 16.4 | < 0.005 | < 0.005 | 0.02 | 16.6 |
| Vendor | < 0.005 | < 0.005 | 0.05 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 39.3 | 39.3 | < 0.005 | 0.01 | 0.05 | 41.1 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.72 | 2.72 | < 0.005 | < 0.005 | < 0.005 | 2.76 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.51 | 6.51 | < 0.005 | < 0.005 | 0.01 | 6.80 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.2. Option 2 Rough Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.62 | 3.04 | 27.2 | 27.6 | 0.06 | 1.12 | — | 1.12 | 1.03 | — | 1.03 | — | 6,599 | 6,599 | 0.27 | 0.05 | — | 6,621 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.62 | 3.04 | 27.2 | 27.6 | 0.06 | 1.12 | — | 1.12 | 1.03 | — | 1.03 | — | 6,599 | 6,599 | 0.27 | 0.05 | — | 6,621 |
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.23 | 0.19 | 1.72 | 1.74 | < 0.005 | 0.07 | — | 0.07 | 0.07 | — | 0.07 | — | 416 | 416 | 0.02 | < 0.005 | — | 417 |
| Dust From Material Movement | — | — | — | — | — | — | 0.23 | 0.23 | — | 0.09 | 0.09 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.04 | 0.31 | 0.32 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 68.8 | 68.8 | < 0.005 | < 0.005 | — | 69.1 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 0.04 | 0.04 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.08 | 1.29 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 271 | 271 | 0.01 | 0.01 | 0.92 | 275 |
| Vendor | 0.05 | 0.02 | 0.69 | 0.33 | < 0.005 | 0.01 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 624 | 624 | 0.03 | 0.09 | 1.69 | 652 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.09 | 1.10 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 257 | 257 | 0.01 | 0.01 | 0.02 | 260 |
| Vendor | 0.04 | 0.02 | 0.72 | 0.34 | < 0.005 | 0.01 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 624 | 624 | 0.03 | 0.09 | 0.04 | 651 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | < 0.005 | 0.01 | 0.07 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 16.4 | 16.4 | < 0.005 | < 0.005 | 0.02 | 16.6 |
| Vendor | < 0.005 | < 0.005 | 0.05 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 39.3 | 39.3 | < 0.005 | 0.01 | 0.05 | 41.1 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.72 | 2.72 | < 0.005 | < 0.005 | < 0.005 | 2.76 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.51 | 6.51 | < 0.005 | < 0.005 | 0.01 | 6.80 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.3. Option 2 Fine Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.51 | 2.95 | 25.6 | 27.3 | 0.06 | 1.04 | — | 1.04 | 0.96 | — | 0.96 | — | 6,598 | 6,598 | 0.27 | 0.05 | — | 6,621 |
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.21 | 0.18 | 1.54 | 1.64 | < 0.005 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 398 | 398 | 0.02 | < 0.005 | — | 399 |
| Dust From Material Movement | — | — | — | — | — | — | 0.22 | 0.22 | — | 0.09 | 0.09 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.03 | 0.28 | 0.30 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 65.8 | 65.8 | < 0.005 | < 0.005 | — | 66.1 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 0.04 | 0.04 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.07 | 1.20 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 266 | 266 | 0.01 | 0.01 | 0.83 | 270 |
| Vendor | 0.04 | 0.02 | 0.66 | 0.31 | < 0.005 | < 0.005 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 611 | 611 | 0.03 | 0.08 | 1.59 | 639 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.01 | 0.06 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 15.4 | 15.4 | < 0.005 | < 0.005 | 0.02 | 15.6 |
| Vendor | < 0.005 | < 0.005 | 0.04 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 36.9 | 36.9 | < 0.005 | 0.01 | 0.04 | 38.5 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.55 | 2.55 | < 0.005 | < 0.005 | < 0.005 | 2.58 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.10 | 6.10 | < 0.005 | < 0.005 | 0.01 | 6.37 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.4. Option 2 Fine Grading (2027) - Mitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.51 | 2.95 | 25.6 | 27.3 | 0.06 | 1.04 | — | 1.04 | 0.96 | — | 0.96 | — | 6,598 | 6,598 | 0.27 | 0.05 | — | 6,621 |
| Dust From Material Movement | — | — | — | — | — | — | 3.59 | 3.59 | — | 1.42 | 1.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.21 | 0.18 | 1.54 | 1.64 | < 0.005 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 398 | 398 | 0.02 | < 0.005 | — | 399 |
| Dust From Material Movement | — | — | — | — | — | — | 0.22 | 0.22 | — | 0.09 | 0.09 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.03 | 0.28 | 0.30 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 65.8 | 65.8 | < 0.005 | < 0.005 | — | 66.1 |
| Dust From Material Movement | — | — | — | — | — | — | 0.04 | 0.04 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.07 | 1.20 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 266 | 266 | 0.01 | 0.01 | 0.83 | 270 |
| Vendor | 0.04 | 0.02 | 0.66 | 0.31 | < 0.005 | < 0.005 | 0.17 | 0.18 | < 0.005 | 0.05 | 0.05 | — | 611 | 611 | 0.03 | 0.08 | 1.59 | 639 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.01 | 0.06 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 15.4 | 15.4 | < 0.005 | < 0.005 | 0.02 | 15.6 |
| Vendor | < 0.005 | < 0.005 | 0.04 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 36.9 | 36.9 | < 0.005 | 0.01 | 0.04 | 38.5 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.55 | 2.55 | < 0.005 | < 0.005 | < 0.005 | 2.58 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.10 | 6.10 | < 0.005 | < 0.005 | 0.01 | 6.37 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.5. Option 2 BESS Construction (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 1.44 | 1.20 | 11.2 | 13.1 | 0.02 | 0.50 | — | 0.50 | 0.46 | — | 0.46 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.44 | 1.20 | 11.2 | 13.1 | 0.02 | 0.50 | — | 0.50 | 0.46 | — | 0.46 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.48 | 0.40 | 3.73 | 4.36 | 0.01 | 0.17 | — | 0.17 | 0.15 | — | 0.15 | — | 798 | 798 | 0.03 | 0.01 | — | 800 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.09 | 0.07 | 0.68 | 0.80 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 132 | 132 | 0.01 | < 0.005 | — | 133 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.47 | 1.33 | 1.41 | 22.3 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 4,175 | 4,175 | 0.17 | 0.14 | 16.5 | 4,238 |
| Vendor | 0.29 | 0.11 | 4.38 | 2.15 | 0.03 | 0.05 | 0.99 | 1.04 | 0.05 | 0.27 | 0.32 | — | 3,723 | 3,723 | 0.15 | 0.51 | 10.1 | 3,890 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.46 | 1.31 | 1.68 | 18.9 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 3,957 | 3,957 | 0.18 | 0.15 | 0.43 | 4,006 |
| Vendor | 0.29 | 0.11 | 4.56 | 2.20 | 0.03 | 0.05 | 0.99 | 1.04 | 0.05 | 0.27 | 0.32 | — | 3,724 | 3,724 | 0.15 | 0.51 | 0.26 | 3,881 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.43 | 0.56 | 6.60 | 0.00 | 0.00 | 1.27 | 1.27 | 0.00 | 0.30 | 0.30 | — | 1,336 | 1,336 | 0.06 | 0.05 | 2.36 | 1,354 |
| Vendor | 0.10 | 0.04 | 1.53 | 0.72 | 0.01 | 0.02 | 0.32 | 0.34 | 0.02 | 0.09 | 0.11 | — | 1,239 | 1,239 | 0.05 | 0.17 | 1.44 | 1,292 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.09 | 0.08 | 0.10 | 1.20 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.05 | 0.05 | — | 221 | 221 | 0.01 | 0.01 | 0.39 | 224 |
| Vendor | 0.02 | 0.01 | 0.28 | 0.13 | < 0.005 | < 0.005 | 0.06 | 0.06 | < 0.005 | 0.02 | 0.02 | — | 205 | 205 | 0.01 | 0.03 | 0.24 | 214 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.6. Option 2 BESS Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.44 | 1.20 | 11.2 | 13.1 | 0.02 | 0.50 | — | 0.50 | 0.46 | — | 0.46 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.44 | 1.20 | 11.2 | 13.1 | 0.02 | 0.50 | — | 0.50 | 0.46 | — | 0.46 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.48 | 0.40 | 3.73 | 4.36 | 0.01 | 0.17 | — | 0.17 | 0.15 | — | 0.15 | — | 798 | 798 | 0.03 | 0.01 | — | 800 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.09 | 0.07 | 0.68 | 0.80 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 132 | 132 | 0.01 | < 0.005 | — | 133 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.47 | 1.33 | 1.41 | 22.3 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 4,175 | 4,175 | 0.17 | 0.14 | 16.5 | 4,238 |
| Vendor | 0.29 | 0.11 | 4.38 | 2.15 | 0.03 | 0.05 | 0.99 | 1.04 | 0.05 | 0.27 | 0.32 | — | 3,723 | 3,723 | 0.15 | 0.51 | 10.1 | 3,890 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.46 | 1.31 | 1.68 | 18.9 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 3,957 | 3,957 | 0.18 | 0.15 | 0.43 | 4,006 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.29 | 0.11 | 4.56 | 2.20 | 0.03 | 0.05 | 0.99 | 1.04 | 0.05 | 0.27 | 0.32 | — | 3,724 | 3,724 | 0.15 | 0.51 | 0.26 | 3,881 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.43 | 0.56 | 6.60 | 0.00 | 0.00 | 1.27 | 1.27 | 0.00 | 0.30 | 0.30 | — | 1,336 | 1,336 | 0.06 | 0.05 | 2.36 | 1,354 |
| Vendor | 0.10 | 0.04 | 1.53 | 0.72 | 0.01 | 0.02 | 0.32 | 0.34 | 0.02 | 0.09 | 0.11 | — | 1,239 | 1,239 | 0.05 | 0.17 | 1.44 | 1,292 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.09 | 0.08 | 0.10 | 1.20 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.05 | 0.05 | — | 221 | 221 | 0.01 | 0.01 | 0.39 | 224 |
| Vendor | 0.02 | 0.01 | 0.28 | 0.13 | < 0.005 | < 0.005 | 0.06 | 0.06 | < 0.005 | 0.02 | 0.02 | — | 205 | 205 | 0.01 | 0.03 | 0.24 | 214 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.7. Option 2 BESS Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.35 | 1.13 | 10.4 | 13.0 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.35 | 1.13 | 10.4 | 13.0 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.44 | 0.37 | 3.39 | 4.24 | 0.01 | 0.14 | — | 0.14 | 0.13 | — | 0.13 | — | 779 | 779 | 0.03 | 0.01 | — | 782 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.08 | 0.07 | 0.62 | 0.77 | < 0.005 | 0.03 | — | 0.03 | 0.02 | — | 0.02 | — | 129 | 129 | 0.01 | < 0.005 | — | 129 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.41 | 1.27 | 1.28 | 20.6 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 4,089 | 4,089 | 0.17 | 0.14 | 15.0 | 4,150 |
| Vendor | 0.26 | 0.11 | 4.16 | 2.04 | 0.03 | 0.05 | 0.99 | 1.04 | 0.03 | 0.27 | 0.30 | — | 3,661 | 3,661 | 0.15 | 0.51 | 10.0 | 3,828 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.40 | 1.25 | 1.42 | 17.4 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 3,875 | 3,875 | 0.18 | 0.15 | 0.39 | 3,924 |
| Vendor | 0.26 | 0.11 | 4.34 | 2.06 | 0.03 | 0.05 | 0.99 | 1.04 | 0.03 | 0.27 | 0.30 | — | 3,663 | 3,663 | 0.15 | 0.51 | 0.26 | 3,820 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.45 | 0.41 | 0.50 | 5.95 | 0.00 | 0.00 | 1.24 | 1.24 | 0.00 | 0.29 | 0.29 | — | 1,278 | 1,278 | 0.06 | 0.05 | 2.10 | 1,295 |
| Vendor | 0.08 | 0.03 | 1.42 | 0.66 | 0.01 | 0.02 | 0.32 | 0.33 | 0.01 | 0.09 | 0.10 | — | 1,190 | 1,190 | 0.05 | 0.17 | 1.41 | 1,242 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.09 | 1.09 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.05 | 0.05 | — | 212 | 212 | 0.01 | 0.01 | 0.35 | 214 |
| Vendor | 0.02 | 0.01 | 0.26 | 0.12 | < 0.005 | < 0.005 | 0.06 | 0.06 | < 0.005 | 0.02 | 0.02 | — | 197 | 197 | 0.01 | 0.03 | 0.23 | 206 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.8. Option 2 BESS Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.35 | 1.13 | 10.4 | 13.0 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.35 | 1.13 | 10.4 | 13.0 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 2,398 | 2,398 | 0.10 | 0.02 | — | 2,406 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.44 | 0.37 | 3.39 | 4.24 | 0.01 | 0.14 | — | 0.14 | 0.13 | — | 0.13 | — | 779 | 779 | 0.03 | 0.01 | — | 782 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.08 | 0.07 | 0.62 | 0.77 | < 0.005 | 0.03 | — | 0.03 | 0.02 | — | 0.02 | — | 129 | 129 | 0.01 | < 0.005 | — | 129 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.41 | 1.27 | 1.28 | 20.6 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 4,089 | 4,089 | 0.17 | 0.14 | 15.0 | 4,150 |
| Vendor | 0.26 | 0.11 | 4.16 | 2.04 | 0.03 | 0.05 | 0.99 | 1.04 | 0.03 | 0.27 | 0.30 | — | 3,661 | 3,661 | 0.15 | 0.51 | 10.0 | 3,828 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.40 | 1.25 | 1.42 | 17.4 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 3,875 | 3,875 | 0.18 | 0.15 | 0.39 | 3,924 |
| Vendor | 0.26 | 0.11 | 4.34 | 2.06 | 0.03 | 0.05 | 0.99 | 1.04 | 0.03 | 0.27 | 0.30 | — | 3,663 | 3,663 | 0.15 | 0.51 | 0.26 | 3,820 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.45 | 0.41 | 0.50 | 5.95 | 0.00 | 0.00 | 1.24 | 1.24 | 0.00 | 0.29 | 0.29 | — | 1,278 | 1,278 | 0.06 | 0.05 | 2.10 | 1,295 |
| Vendor | 0.08 | 0.03 | 1.42 | 0.66 | 0.01 | 0.02 | 0.32 | 0.33 | 0.01 | 0.09 | 0.10 | — | 1,190 | 1,190 | 0.05 | 0.17 | 1.41 | 1,242 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.09 | 1.09 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.05 | 0.05 | — | 212 | 212 | 0.01 | 0.01 | 0.35 | 214 |
| Vendor | 0.02 | 0.01 | 0.26 | 0.12 | < 0.005 | < 0.005 | 0.06 | 0.06 | < 0.005 | 0.02 | 0.02 | — | 197 | 197 | 0.01 | 0.03 | 0.23 | 206 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.9. Option 2 Buildings 1 and 2 Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.28 | 1.07 | 9.85 | 13.0 | 0.02 | 0.38 | — | 0.38 | 0.35 | — | 0.35 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.28 | 1.07 | 9.85 | 13.0 | 0.02 | 0.38 | — | 0.38 | 0.35 | — | 0.35 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.27 | 0.23 | 2.08 | 2.74 | < 0.005 | 0.08 | — | 0.08 | 0.07 | — | 0.07 | — | 507 | 507 | 0.02 | < 0.005 | — | 508 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.05 | 0.04 | 0.38 | 0.50 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 83.9 | 83.9 | < 0.005 | < 0.005 | — | 84.2 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.23 | 1.09 | 1.15 | 19.1 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 4,006 | 4,006 | 0.17 | 0.14 | 13.6 | 4,066 |
| Vendor | 0.26 | 0.11 | 3.97 | 1.92 | 0.03 | 0.05 | 0.99 | 1.04 | 0.03 | 0.27 | 0.30 | — | 3,598 | 3,598 | 0.15 | 0.51 | 9.72 | 3,764 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.23 | 1.08 | 1.29 | 16.3 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 3,798 | 3,798 | 0.17 | 0.14 | 0.35 | 3,845 |
| Vendor | 0.25 | 0.10 | 4.15 | 1.96 | 0.03 | 0.05 | 0.99 | 1.04 | 0.03 | 0.27 | 0.30 | — | 3,600 | 3,600 | 0.15 | 0.51 | 0.25 | 3,757 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.26 | 0.23 | 0.30 | 3.61 | 0.00 | 0.00 | 0.81 | 0.81 | 0.00 | 0.19 | 0.19 | — | 815 | 815 | 0.04 | 0.03 | 1.24 | 826 |
| Vendor | 0.05 | 0.02 | 0.88 | 0.41 | 0.01 | 0.01 | 0.21 | 0.22 | 0.01 | 0.06 | 0.06 | — | 761 | 761 | 0.03 | 0.11 | 0.89 | 795 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.04 | 0.05 | 0.66 | 0.00 | 0.00 | 0.15 | 0.15 | 0.00 | 0.03 | 0.03 | — | 135 | 135 | 0.01 | < 0.005 | 0.21 | 137 |
| Vendor | 0.01 | < 0.005 | 0.16 | 0.07 | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 126 | 126 | 0.01 | 0.02 | 0.15 | 132 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.10. Option 2 Buildings 1 and 2 Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.28 | 1.07 | 9.85 | 13.0 | 0.02 | 0.38 | — | 0.38 | 0.35 | — | 0.35 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.28 | 1.07 | 9.85 | 13.0 | 0.02 | 0.38 | — | 0.38 | 0.35 | — | 0.35 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.27 | 0.23 | 2.08 | 2.74 | < 0.005 | 0.08 | — | 0.08 | 0.07 | — | 0.07 | — | 507 | 507 | 0.02 | < 0.005 | — | 508 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.05 | 0.04 | 0.38 | 0.50 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 83.9 | 83.9 | < 0.005 | < 0.005 | — | 84.2 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 1.23 | 1.09 | 1.15 | 19.1 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 4,006 | 4,006 | 0.17 | 0.14 | 13.6 | 4,066 |
| Vendor | 0.26 | 0.11 | 3.97 | 1.92 | 0.03 | 0.05 | 0.99 | 1.04 | 0.03 | 0.27 | 0.30 | — | 3,598 | 3,598 | 0.15 | 0.51 | 9.72 | 3,764 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.23 | 1.08 | 1.29 | 16.3 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 3,798 | 3,798 | 0.17 | 0.14 | 0.35 | 3,845 |
| Vendor | 0.25 | 0.10 | 4.15 | 1.96 | 0.03 | 0.05 | 0.99 | 1.04 | 0.03 | 0.27 | 0.30 | — | 3,600 | 3,600 | 0.15 | 0.51 | 0.25 | 3,757 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.26 | 0.23 | 0.30 | 3.61 | 0.00 | 0.00 | 0.81 | 0.81 | 0.00 | 0.19 | 0.19 | — | 815 | 815 | 0.04 | 0.03 | 1.24 | 826 |
| Vendor | 0.05 | 0.02 | 0.88 | 0.41 | 0.01 | 0.01 | 0.21 | 0.22 | 0.01 | 0.06 | 0.06 | — | 761 | 761 | 0.03 | 0.11 | 0.89 | 795 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.04 | 0.05 | 0.66 | 0.00 | 0.00 | 0.15 | 0.15 | 0.00 | 0.03 | 0.03 | — | 135 | 135 | 0.01 | < 0.005 | 0.21 | 137 |
| Vendor | 0.01 | < 0.005 | 0.16 | 0.07 | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 126 | 126 | 0.01 | 0.02 | 0.15 | 132 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.11. Option 2 Buildings 1 and 2 Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.23 | 1.03 | 9.39 | 12.9 | 0.02 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.23 | 1.03 | 9.39 | 12.9 | 0.02 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.55 | 0.46 | 4.17 | 5.75 | 0.01 | 0.15 | — | 0.15 | 0.14 | — | 0.14 | — | 1,065 | 1,065 | 0.04 | 0.01 | — | 1,069 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.08 | 0.76 | 1.05 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 176 | 176 | 0.01 | < 0.005 | — | 177 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.19 | 1.05 | 1.02 | 17.8 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 3,930 | 3,930 | 0.17 | 0.14 | 12.2 | 3,988 |
| Vendor | 0.23 | 0.11 | 3.80 | 1.81 | 0.03 | 0.03 | 0.99 | 1.01 | 0.03 | 0.27 | 0.30 | — | 3,528 | 3,528 | 0.15 | 0.49 | 9.20 | 3,686 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 1.18 | 1.03 | 1.27 | 15.0 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 3,726 | 3,726 | 0.05 | 0.14 | 0.32 | 3,769 |
| Vendor | 0.23 | 0.10 | 3.95 | 1.85 | 0.03 | 0.03 | 0.99 | 1.01 | 0.03 | 0.27 | 0.30 | — | 3,530 | 3,530 | 0.15 | 0.49 | 0.24 | 3,679 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.52 | 0.46 | 0.57 | 7.03 | 0.00 | 0.00 | 1.69 | 1.69 | 0.00 | 0.40 | 0.40 | — | 1,679 | 1,679 | 0.02 | 0.06 | 2.34 | 1,701 |
| Vendor | 0.10 | 0.05 | 1.77 | 0.81 | 0.01 | 0.01 | 0.43 | 0.44 | 0.01 | 0.12 | 0.13 | — | 1,568 | 1,568 | 0.07 | 0.22 | 1.76 | 1,636 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.10 | 0.08 | 0.10 | 1.28 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 278 | 278 | < 0.005 | 0.01 | 0.39 | 282 |
| Vendor | 0.02 | 0.01 | 0.32 | 0.15 | < 0.005 | < 0.005 | 0.08 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 260 | 260 | 0.01 | 0.04 | 0.29 | 271 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.12. Option 2 Buildings 1 and 2 Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.23 | 1.03 | 9.39 | 12.9 | 0.02 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 1.23 | 1.03 | 9.39 | 12.9 | 0.02 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.55 | 0.46 | 4.17 | 5.75 | 0.01 | 0.15 | — | 0.15 | 0.14 | — | 0.14 | — | 1,065 | 1,065 | 0.04 | 0.01 | — | 1,069 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.08 | 0.76 | 1.05 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 176 | 176 | 0.01 | < 0.005 | — | 177 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.19 | 1.05 | 1.02 | 17.8 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 3,930 | 3,930 | 0.17 | 0.14 | 12.2 | 3,988 |
| Vendor | 0.23 | 0.11 | 3.80 | 1.81 | 0.03 | 0.03 | 0.99 | 1.01 | 0.03 | 0.27 | 0.30 | — | 3,528 | 3,528 | 0.15 | 0.49 | 9.20 | 3,686 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 1.18 | 1.03 | 1.27 | 15.0 | 0.00 | 0.00 | 3.87 | 3.87 | 0.00 | 0.91 | 0.91 | — | 3,726 | 3,726 | 0.05 | 0.14 | 0.32 | 3,769 |
| Vendor | 0.23 | 0.10 | 3.95 | 1.85 | 0.03 | 0.03 | 0.99 | 1.01 | 0.03 | 0.27 | 0.30 | — | 3,530 | 3,530 | 0.15 | 0.49 | 0.24 | 3,679 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.52 | 0.46 | 0.57 | 7.03 | 0.00 | 0.00 | 1.69 | 1.69 | 0.00 | 0.40 | 0.40 | — | 1,679 | 1,679 | 0.02 | 0.06 | 2.34 | 1,701 |
| Vendor | 0.10 | 0.05 | 1.77 | 0.81 | 0.01 | 0.01 | 0.43 | 0.44 | 0.01 | 0.12 | 0.13 | — | 1,568 | 1,568 | 0.07 | 0.22 | 1.76 | 1,636 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.10 | 0.08 | 0.10 | 1.28 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 278 | 278 | < 0.005 | 0.01 | 0.39 | 282 |
| Vendor | 0.02 | 0.01 | 0.32 | 0.15 | < 0.005 | < 0.005 | 0.08 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 260 | 260 | 0.01 | 0.04 | 0.29 | 271 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.13. Option 2 BESS Site Paving (2025) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.95 | 0.80 | 7.45 | 9.98 | 0.01 | 0.35 | — | 0.35 | 0.32 | — | 0.32 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,517 |
| Paving | 0.64 | 0.64 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.95 | 0.80 | 7.45 | 9.98 | 0.01 | 0.35 | — | 0.35 | 0.32 | — | 0.32 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,517 |
| Paving | 0.64 | 0.64 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.14 | 0.12 | 1.12 | 1.50 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 228 | 228 | 0.01 | < 0.005 | — | 229 |
| Paving | 0.10 | 0.10 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.20 | 0.27 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 37.7 | 37.7 | < 0.005 | < 0.005 | — | 37.8 |
| Paving | 0.02 | 0.02 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.06 | 1.04 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 207 | 207 | 0.01 | 0.01 | 0.76 | 210 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.07 | 0.88 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 197 | 197 | 0.01 | 0.01 | 0.02 | 199 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.01 | 0.01 | 0.01 | 0.14 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 30.1 | 30.1 | < 0.005 | < 0.005 | 0.05 | 30.5 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 4.98 | 4.98 | < 0.005 | < 0.005 | 0.01 | 5.04 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.14. Option 2 BESS Site Paving (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.95 | 0.80 | 7.45 | 9.98 | 0.01 | 0.35 | — | 0.35 | 0.32 | — | 0.32 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,517 |
| Paving | 0.64 | 0.64 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.95 | 0.80 | 7.45 | 9.98 | 0.01 | 0.35 | — | 0.35 | 0.32 | — | 0.32 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,517 |
| Paving | 0.64 | 0.64 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.14 | 0.12 | 1.12 | 1.50 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 228 | 228 | 0.01 | < 0.005 | — | 229 |
| Paving | 0.10 | 0.10 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.20 | 0.27 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 37.7 | 37.7 | < 0.005 | < 0.005 | — | 37.8 |
| Paving | 0.02 | 0.02 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.06 | 1.04 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 207 | 207 | 0.01 | 0.01 | 0.76 | 210 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.07 | 0.88 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 197 | 197 | 0.01 | 0.01 | 0.02 | 199 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.14 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 30.1 | 30.1 | < 0.005 | < 0.005 | 0.05 | 30.5 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 4.98 | 4.98 | < 0.005 | < 0.005 | 0.01 | 5.04 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.15. Option 2 Buildings 1 and 2 Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.14 | 0.11 | 0.83 | 1.13 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 63.5 | 63.5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.13 | 0.17 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 20.1 | 20.1 | < 0.005 | < 0.005 | — | 20.2 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 9.57 | 9.57 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.02 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 3.33 | 3.33 | < 0.005 | < 0.005 | — | 3.34 |
| Architectural Coatings | 1.75 | 1.75 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.42 | 0.41 | 7.10 | 0.00 | 0.00 | 1.55 | 1.55 | 0.00 | 0.36 | 0.36 | — | 1,572 | 1,572 | 0.07 | 0.06 | 4.90 | 1,595 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.08 | 0.95 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.05 | 0.05 | — | 228 | 228 | < 0.005 | 0.01 | 0.32 | 231 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.17 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01 | 0.01 | — | 37.7 | 37.7 | < 0.005 | < 0.005 | 0.05 | 38.2 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.16. Option 2 Buildings 1 and 2 Architectural Coating (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.14 | 0.11 | 0.83 | 1.13 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 4.19 | 4.19 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.13 | 0.17 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 20.1 | 20.1 | < 0.005 | < 0.005 | — | 20.2 |
| Architectural Coatings | 0.63 | 0.63 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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| Off-Roa Equipment | < 0.005 | < 0.005 | 0.02 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 3.33 | 3.33 | < 0.005 | < 0.005 | — | 3.34 |
| Architectural Coatings | 0.12 | 0.12 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.42 | 0.41 | 7.10 | 0.00 | 0.00 | 1.55 | 1.55 | 0.00 | 0.36 | 0.36 | — | 1,572 | 1,572 | 0.07 | 0.06 | 4.90 | 1,595 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.08 | 0.95 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.05 | 0.05 | — | 228 | 228 | < 0.005 | 0.01 | 0.32 | 231 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.17 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01 | 0.01 | — | 37.7 | 37.7 | < 0.005 | < 0.005 | 0.05 | 38.2 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.17. Option 2 BESS Site Utility Trenching (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | —E-121 | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.93 | 1.62 | 13.5 | 13.8 | 0.03 | 0.64 | — | 0.64 | 0.59 | — | 0.59 | — | 3,454 | 3,454 | 0.14 | 0.03 | — | 3,466 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.12 | 0.10 | 0.81 | 0.83 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 208 | 208 | 0.01 | < 0.005 | — | 209 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.15 | 0.15 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 34.5 | 34.5 | < 0.005 | < 0.005 | — | 34.6 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.07 | 0.07 | 1.13 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 212 | 212 | 0.01 | 0.01 | 0.84 | 215 |
| Vendor | 0.02 | 0.01 | 0.23 | 0.11 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 194 | 194 | 0.01 | 0.03 | 0.52 | 202 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.01 | 0.06 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | 0.02 | 12.4 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 11.7 | 11.7 | < 0.005 | < 0.005 | 0.01 | 12.2 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.03 | 2.03 | < 0.005 | < 0.005 | < 0.005 | 2.06 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.93 | 1.93 | < 0.005 | < 0.005 | < 0.005 | 2.02 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.18. Option 2 BESS Site Utility Trenching (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.93 | 1.62 | 13.5 | 13.8 | 0.03 | 0.64 | — | 0.64 | 0.59 | — | 0.59 | — | 3,454 | 3,454 | 0.14 | 0.03 | — | 3,466 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipm | 0.12 | 0.10 | 0.81 | 0.83 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 208 | 208 | 0.01 | < 0.005 | — | 209 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.15 | 0.15 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 34.5 | 34.5 | < 0.005 | < 0.005 | — | 34.6 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.07 | 0.07 | 1.13 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 212 | 212 | 0.01 | 0.01 | 0.84 | 215 |
| Vendor | 0.02 | 0.01 | 0.23 | 0.11 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 194 | 194 | 0.01 | 0.03 | 0.52 | 202 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.01 | 0.06 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | 0.02 | 12.4 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 11.7 | 11.7 | < 0.005 | < 0.005 | 0.01 | 12.2 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.03 | 2.03 | < 0.005 | < 0.005 | < 0.005 | 2.06 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.93 | 1.93 | < 0.005 | < 0.005 | < 0.005 | 2.02 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.19. Option 2 Buildings 1 and 2 Utility Trenching (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.76 | 1.48 | 11.4 | 13.7 | 0.03 | 0.51 | — | 0.51 | 0.47 | — | 0.47 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.76 | 1.48 | 11.4 | 13.7 | 0.03 | 0.51 | — | 0.51 | 0.47 | — | 0.47 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11 | 0.09 | 0.72 | 0.86 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 218 | 218 | 0.01 | < 0.005 | — | 219 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.13 | 0.16 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 36.1 | 36.1 | < 0.005 | < 0.005 | — | 36.2 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.06 | 0.06 | 0.97 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 203 | 203 | 0.01 | 0.01 | 0.69 | 206 |
| Vendor | 0.01 | 0.01 | 0.21 | 0.10 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 187 | 187 | 0.01 | 0.03 | 0.51 | 196 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.07 | 0.83 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 193 | 193 | 0.01 | 0.01 | 0.02 | 195 |
| Vendor | 0.01 | 0.01 | 0.22 | 0.10 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 187 | 187 | 0.01 | 0.03 | 0.01 | 195 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | 0.02 | 12.5 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 11.8 | 11.8 | < 0.005 | < 0.005 | 0.01 | 12.3 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.04 | 2.04 | < 0.005 | < 0.005 | < 0.005 | 2.07 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.95 | 1.95 | < 0.005 | < 0.005 | < 0.005 | 2.04 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.20. Option 2 Buildings 1 and 2 Utility Trenching (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.76 | 1.48 | 11.4 | 13.7 | 0.03 | 0.51 | — | 0.51 | 0.47 | — | 0.47 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.76 | 1.48 | 11.4 | 13.7 | 0.03 | 0.51 | — | 0.51 | 0.47 | — | 0.47 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11 | 0.09 | 0.72 | 0.86 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 218 | 218 | 0.01 | < 0.005 | — | 219 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.13 | 0.16 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 36.1 | 36.1 | < 0.005 | < 0.005 | — | 36.2 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.06 | 0.06 | 0.06 | 0.97 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 203 | 203 | 0.01 | 0.01 | 0.69 | 206 |
| Vendor | 0.01 | 0.01 | 0.21 | 0.10 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 187 | 187 | 0.01 | 0.03 | 0.51 | 196 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.07 | 0.83 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 193 | 193 | 0.01 | 0.01 | 0.02 | 195 |
| Vendor | 0.01 | 0.01 | 0.22 | 0.10 | < 0.005 | < 0.005 | 0.05 | 0.05 | < 0.005 | 0.01 | 0.02 | — | 187 | 187 | 0.01 | 0.03 | 0.01 | 195 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | 0.02 | 12.5 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 11.8 | 11.8 | < 0.005 | < 0.005 | 0.01 | 12.3 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.04 | 2.04 | < 0.005 | < 0.005 | < 0.005 | 2.07 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.95 | 1.95 | < 0.005 | < 0.005 | < 0.005 | 2.04 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.21. Option 2 Finishing/Landscaping (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.70 | 1.43 | 10.7 | 13.6 | 0.03 | 0.47 | — | 0.47 | 0.43 | — | 0.43 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.09 | 0.65 | 0.82 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 208 | 208 | 0.01 | < 0.005 | — | 209 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.12 | 0.15 | < 0.005 | 0.01 | — | 0.01 | < 0.005 | — | < 0.005 | — | 34.5 | 34.5 | < 0.005 | < 0.005 | — | 34.6 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.05 | 0.90 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 199 | 199 | 0.01 | 0.01 | 0.62 | 202 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 11.6 | 11.6 | < 0.005 | < 0.005 | 0.02 | 11.7 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.91 | 1.91 | < 0.005 | < 0.005 | < 0.005 | 1.94 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.22. Option 2 Finishing/Landscaping (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.70 | 1.43 | 10.7 | 13.6 | 0.03 | 0.47 | — | 0.47 | 0.43 | — | 0.43 | — | 3,457 | 3,457 | 0.14 | 0.03 | — | 3,469 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.09 | 0.65 | 0.82 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 208 | 208 | 0.01 | < 0.005 | — | 209 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.12 | 0.15 | < 0.005 | 0.01 | — | 0.01 | < 0.005 | — | < 0.005 | — | 34.5 | 34.5 | < 0.005 | < 0.005 | — | 34.6 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.05 | 0.90 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 199 | 199 | 0.01 | 0.01 | 0.62 | 202 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 11.6 | 11.6 | < 0.005 | < 0.005 | 0.02 | 11.7 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.91 | 1.91 | < 0.005 | < 0.005 | < 0.005 | 1.94 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# 4. Operations Emissions Details

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Remove | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Option 2 Rough Grading | Grading | 9/15/2026 | 10/15/2026 | 5.00 | 23.0 | — |
| Option 2 Fine Grading | Grading | 7/15/2027 | 8/15/2027 | 5.00 | 22.0 | — |
| Option 2 BESS Construction | Building Construction | 7/15/2024 | 6/15/2025 | 5.00 | 240 | — |
| Option 2 Buildings 1 and 2 Construction | Building Construction | 9/15/2026 | 8/15/2027 | 5.00 | 239 | — |
| Option 2 BESS Site Paving | Paving | 3/31/2025 | 6/15/2025 | 5.00 | 55.0 | — |
| Option 2 Buildings 1 and 2 Architectural Coating | Architectural Coating | 5/31/2027 | 8/15/2027 | 5.00 | 55.0 | — |
| Option 2 BESS Site Utility Trenching | Trenching | 7/15/2024 | 8/13/2024 | 5.00 | 22.0 | — |
| Option 2 Buildings 1 and 2 Utility Trenching | Trenching | 9/15/2026 | 10/15/2026 | 5.00 | 23.0 | — |
| Option 2 Finishing/Landscaping | Trenching | 7/15/2027 | 8/13/2027 | 5.00 | 22.0 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Option 2 Rough Grading | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Option 2 Rough Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Option 2 Rough Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| Option 2 Rough Grading | Scrapers | Diesel | Average | 2.00 | 8.00 | 423 | 0.48 |
| Option 2 Rough Grading | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Option 2 Fine Grading | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 2 Fine Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Option 2 Fine Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| Option 2 Fine Grading | Scrapers | Diesel | Average | 2.00 | 8.00 | 423 | 0.48 |
| Option 2 Fine Grading | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Option 2 BESS Construction | Cranes | Diesel | Average | 1.00 | 7.00 | 367 | 0.29 |
| Option 2 BESS Construction | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Option 2 BESS Construction | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Option 2 BESS Construction | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 7.00 | 84.0 | 0.37 |
| Option 2 BESS Construction | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |
| Option 2 Buildings 1 and 2 Construction | Cranes | Diesel | Average | 1.00 | 7.00 | 367 | 0.29 |
| Option 2 Buildings 1 and 2 Construction | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Option 2 Buildings 1 and 2 Construction | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Option 2 Buildings 1 and 2 Construction | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 7.00 | 84.0 | 0.37 |
| Option 2 Buildings 1 and 2 Construction | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Option 2 BESS Site Paving | Pavers | Diesel | Average | 2.00 | 8.00 | 81.0 | 0.42 |
| Option 2 BESS Site Paving | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |
| Option 2 BESS Site Paving | Rollers | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 2 Buildings 1 and 2 Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| Option 2 BESS Site Utility Trenching | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 2 BESS Site Utility Trenching | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 2 BESS Site Utility Trenching | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 2 BESS Site Utility Trenching | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 2 BESS Site Utility Trenching | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Option 2 Buildings 1 and 2 Utility Trenching | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 2 Buildings 1 and 2 Utility Trenching | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 2 Buildings 1 and 2 Utility Trenching | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 2 Buildings 1 and 2 Utility Trenching | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 2 Buildings 1 and 2 Utility Trenching | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Option 2 Finishing/Landscaping | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 2 Finishing/Landscaping | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 2 Finishing/Landscaping | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Option 2 Finishing/Landscaping | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 2 Finishing/Landscaping | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |

### 5.2.2. Mitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Option 2 Rough Grading | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 2 Rough Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Option 2 Rough Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| Option 2 Rough Grading | Scrapers | Diesel | Average | 2.00 | 8.00 | 423 | 0.48 |
| Option 2 Rough Grading | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Option 2 Fine Grading | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 2 Fine Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Option 2 Fine Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| Option 2 Fine Grading | Scrapers | Diesel | Average | 2.00 | 8.00 | 423 | 0.48 |
| Option 2 Fine Grading | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Option 2 BESS Construction | Cranes | Diesel | Average | 1.00 | 7.00 | 367 | 0.29 |
| Option 2 BESS Construction | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Option 2 BESS Construction | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Option 2 BESS Construction | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 7.00 | 84.0 | 0.37 |
| Option 2 BESS Construction | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Option 2 Buildings 1 and 2 Construction | Cranes | Diesel | Average | 1.00 | 7.00 | 367 | 0.29 |
| Option 2 Buildings 1 and 2 Construction | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Option 2 Buildings 1 and 2 Construction | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Option 2 Buildings 1 and 2 Construction | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 7.00 | 84.0 | 0.37 |
| Option 2 Buildings 1 and 2 Construction | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |
| Option 2 BESS Site Paving | Pavers | Diesel | Average | 2.00 | 8.00 | 81.0 | 0.42 |
| Option 2 BESS Site Paving | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |
| Option 2 BESS Site Paving | Rollers | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 2 Buildings 1 and 2 Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| Option 2 BESS Site Utility Trenching | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 2 BESS Site Utility Trenching | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 2 BESS Site Utility Trenching | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 2 BESS Site Utility Trenching | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 2 BESS Site Utility Trenching | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Option 2 Buildings 1 and 2 Utility Trenching | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 2 Buildings 1 and 2 Utility Trenching | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 2 Buildings 1 and 2 Utility Trenching | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Option 2 Buildings 1 and 2 Utility Trenching | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 2 Buildings 1 and 2 Utility Trenching | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Option 2 Finishing/Landscaping | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Option 2 Finishing/Landscaping | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Option 2 Finishing/Landscaping | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Option 2 Finishing/Landscaping | Off-Highway Trucks | Diesel | Average | 1.00 | 8.00 | 376 | 0.38 |
| Option 2 Finishing/Landscaping | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Option 2 Rough Grading | — | — | — | — |
| Option 2 Rough Grading | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Rough Grading | Vendor | 20.0 | 10.2 | HHDT,MHDT |
| Option 2 Rough Grading | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Rough Grading | Onsite truck | 0.00 | — | HHDT |
| Option 2 BESS Construction | — | — | — | — |
| Option 2 BESS Construction | Worker | 296 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 BESS Construction | Vendor | 115 | 10.2 | HHDT,MHDT |
| Option 2 BESS Construction | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 BESS Construction | Onsite truck | 0.00 | — | HHDT |
| Option 2 BESS Site Paving | — | — | — | — |
| Option 2 BESS Site Paving | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |

| | | | | |
|---|---|---|---|---|
| Option 2 BESS Site Paving | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 2 BESS Site Paving | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 BESS Site Paving | Onsite truck | 0.00 | — | HHDT |
| Option 2 Buildings 1 and 2 Architectural Coating | — | — | — | — |
| Option 2 Buildings 1 and 2 Architectural Coating | Worker | 118 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Buildings 1 and 2 Architectural Coating | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 2 Buildings 1 and 2 Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Buildings 1 and 2 Architectural Coating | Onsite truck | 0.00 | — | HHDT |
| Option 2 Fine Grading | — | — | — | — |
| Option 2 Fine Grading | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Fine Grading | Vendor | 20.0 | 10.2 | HHDT,MHDT |
| Option 2 Fine Grading | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Fine Grading | Onsite truck | 0.00 | — | HHDT |
| Option 2 Buildings 1 and 2 Construction | — | — | — | — |
| Option 2 Buildings 1 and 2 Construction | Worker | 296 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Buildings 1 and 2 Construction | Vendor | 115 | 10.2 | HHDT,MHDT |
| Option 2 Buildings 1 and 2 Construction | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Buildings 1 and 2 Construction | Onsite truck | 0.00 | — | HHDT |
| Option 2 BESS Site Utility Trenching | — | — | — | — |
| Option 2 BESS Site Utility Trenching | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 BESS Site Utility Trenching | Vendor | 6.00 | 10.2 | HHDT,MHDT |
| Option 2 BESS Site Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |

| | | | | |
|---|---|---|---|---|
| Option 2 BESS Site Utility Trenching | Onsite truck | 0.00 | — | HHDT |
| Option 2 Buildings 1 and 2 Utility Trenching | — | — | — | — |
| Option 2 Buildings 1 and 2 Utility Trenching | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Buildings 1 and 2 Utility Trenching | Vendor | 6.00 | 10.2 | HHDT,MHDT |
| Option 2 Buildings 1 and 2 Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Buildings 1 and 2 Utility Trenching | Onsite truck | 0.00 | — | HHDT |
| Option 2 Finishing/Landscaping | — | — | — | — |
| Option 2 Finishing/Landscaping | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Finishing/Landscaping | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 2 Finishing/Landscaping | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Finishing/Landscaping | Onsite truck | 0.00 | — | HHDT |

### 5.3.2. Mitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Option 2 Rough Grading | — | — | — | — |
| Option 2 Rough Grading | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Rough Grading | Vendor | 20.0 | 10.2 | HHDT,MHDT |
| Option 2 Rough Grading | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Rough Grading | Onsite truck | 0.00 | — | HHDT |
| Option 2 BESS Construction | — | — | — | — |
| Option 2 BESS Construction | Worker | 296 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 BESS Construction | Vendor | 115 | 10.2 | HHDT,MHDT |
| Option 2 BESS Construction | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 BESS Construction | Onsite truck | 0.00 | — | HHDT |
| Option 2 BESS Site Paving | — | — | — | — |

| | | | | |
|---|---|---|---|---|
| Option 2 BESS Site Paving | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 BESS Site Paving | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 2 BESS Site Paving | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 BESS Site Paving | Onsite truck | 0.00 | — | HHDT |
| Option 2 Buildings 1 and 2 Architectural Coating | — | — | — | — |
| Option 2 Buildings 1 and 2 Architectural Coating | Worker | 118 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Buildings 1 and 2 Architectural Coating | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 2 Buildings 1 and 2 Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Buildings 1 and 2 Architectural Coating | Onsite truck | 0.00 | — | HHDT |
| Option 2 Fine Grading | — | — | — | — |
| Option 2 Fine Grading | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Fine Grading | Vendor | 20.0 | 10.2 | HHDT,MHDT |
| Option 2 Fine Grading | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Fine Grading | Onsite truck | 0.00 | — | HHDT |
| Option 2 Buildings 1 and 2 Construction | — | — | — | — |
| Option 2 Buildings 1 and 2 Construction | Worker | 296 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Buildings 1 and 2 Construction | Vendor | 115 | 10.2 | HHDT,MHDT |
| Option 2 Buildings 1 and 2 Construction | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Buildings 1 and 2 Construction | Onsite truck | 0.00 | — | HHDT |
| Option 2 BESS Site Utility Trenching | — | — | — | — |
| Option 2 BESS Site Utility Trenching | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 BESS Site Utility Trenching | Vendor | 6.00 | 10.2 | HHDT,MHDT |

| | | | | |
|---|---|---|---|---|
| Option 2 BESS Site Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 BESS Site Utility Trenching | Onsite truck | 0.00 | — | HHDT |
| Option 2 Buildings 1 and 2 Utility Trenching | — | — | — | — |
| Option 2 Buildings 1 and 2 Utility Trenching | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Buildings 1 and 2 Utility Trenching | Vendor | 6.00 | 10.2 | HHDT,MHDT |
| Option 2 Buildings 1 and 2 Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Buildings 1 and 2 Utility Trenching | Onsite truck | 0.00 | — | HHDT |
| Option 2 Finishing/Landscaping | — | — | — | — |
| Option 2 Finishing/Landscaping | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Option 2 Finishing/Landscaping | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Option 2 Finishing/Landscaping | Hauling | 0.00 | 20.0 | HHDT |
| Option 2 Finishing/Landscaping | Onsite truck | 0.00 | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

| Control Strategies Applied | PM10 Reduction | PM2.5 Reduction |
|---|---|---|
| Water unpaved roads twice daily | 55% | 55% |
| Limit vehicle speeds on unpaved roads to 25 mph | 44% | 44% |
| Sweep paved roads once per month | 9% | 9% |

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Option 2 Buildings 1 and 2 Architectural Coating | 0.00 | 0.00 | 1,056,105 | 352,035 | 49,662 |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Option 2 Rough Grading | 0.00 | 0.00 | 69.0 | 0.00 | — |
| Option 2 Fine Grading | 0.00 | 0.00 | 66.0 | 0.00 | — |
| Option 2 BESS Site Paving | 0.00 | 0.00 | 0.00 | 0.00 | 37.1 |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|---|---|---|---|
| Water Exposed Area | 2 | 61% | 61% |

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| Unrefrigerated Warehouse-No Rail | 0.00 | 0% |
| Parking Lot | 13.3 | 100% |
| Other Non-Asphalt Surfaces | 4.14 | 0% |
| Other Non-Asphalt Surfaces | 19.7 | 0% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2024 | 0.00 | 450 | 0.03 | < 0.005 |
| 2025 | 0.00 | 450 | 0.03 | < 0.005 |

| | | | | |
|---|---|---|---|---|
| 2026 | 0.00 | 450 | 0.03 | < 0.005 |
| 2027 | 0.00 | 450 | 0.03 | < 0.005 |

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

#### 5.18.1.2. Mitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

#### 5.18.1.2. Mitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

#### 5.18.2.2. Mitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 22.5 | annual days of extreme heat |
| Extreme Precipitation | 6.00 | annual days with precipitation above 20 mm |
| Sea Level Rise | 0.00 | meters of inundation depth |
| Wildfire | 0.00 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 0 | 0 | N/A |
| Wildfire | 1 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |

| | | | | |
|---|---|---|---|---|
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 1 | 1 | 3 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 82.6 |
| AQ-PM | 66.5 |
| AQ-DPM | 68.2 |
| Drinking Water | 84.6 |
| Lead Risk Housing | 67.8 |
| Pesticides | 53.5 |
| Toxic Releases | 75.3 |
| Traffic | 88.3 |
| Effect Indicators | — |
| CleanUp Sites | 83.1 |
| Groundwater | 92.7 |
| Haz Waste Facilities/Generators | 91.7 |
| Impaired Water Bodies | 43.8 |
| Solid Waste | 99.3 |
| Sensitive Population | — |
| Asthma | 54.4 |
| Cardio-vascular | 36.6 |
| Low Birth Weights | 36.1 |
| Socioeconomic Factor Indicators | — |
| Education | 69.8 |
| Housing | 35.3 |
| Linguistic | 36.5 |
| Poverty | 48.7 |
| Unemployment | 73.4 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | — |
| Employed | — |
| Median HI | — |
| Education | — |
| Bachelor's or higher | — |
| High school enrollment | — |
| Preschool enrollment | — |
| Transportation | — |
| Auto Access | — |
| Active commuting | — |
| Social | — |
| 2-parent households | — |
| Voting | — |
| Neighborhood | — |
| Alcohol availability | — |
| Park access | — |
| Retail density | — |
| Supermarket access | — |
| Tree canopy | — |
| Housing | — |
| Homeownership | — |
| Housing habitability | — |
| Low-inc homeowner severe housing cost burden | — |
| Low-inc renter severe housing cost burden | — |
| Uncrowded housing | — |
| Health Outcomes | — |

| | |
|---|---|
| Insured adults | — |
| Arthritis | 0.0 |
| Asthma ER Admissions | 58.6 |
| High Blood Pressure | 0.0 |
| Cancer (excluding skin) | 0.0 |
| Asthma | 0.0 |
| Coronary Heart Disease | 0.0 |
| Chronic Obstructive Pulmonary Disease | 0.0 |
| Diagnosed Diabetes | 0.0 |
| Life Expectancy at Birth | 0.0 |
| Cognitively Disabled | 87.2 |
| Physically  Disabled | 24.6 |
| Heart Attack ER Admissions | 66.5 |
| Mental Health Not Good | 0.0 |
| Chronic Kidney Disease | 0.0 |
| Obesity | 0.0 |
| Pedestrian Injuries | 0.0 |
| Physical Health Not Good | 0.0 |
| Stroke | 0.0 |
| Health Risk Behaviors | — |
| Binge Drinking | 0.0 |
| Current Smoker | 0.0 |
| No Leisure Time for Physical Activity | 0.0 |
| Climate Change Exposures | — |
| Wildfire Risk | 1.3 |
| SLR Inundation Area | 0.0 |
| Children | 19.0 |
| Elderly | 62.6 |

| | |
|---|---|
| English Speaking | 0.0 |
| Foreign-born | 0.0 |
| Outdoor Workers | 37.5 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 29.6 |
| Traffic Density | 0.0 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 0.0 |
| Other Decision Support | — |
| 2016 Voting | 0.0 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 83.0 |
| Healthy Places Index Score for Project Location (b) | — |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | Yes |
| Project Located in a Low-Income Community (Assembly Bill 1550) | Yes |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Characteristics: Project Details | — |
| Characteristics: Utility Information | 2021 SCE Sustainability Report |
| Construction: Construction Phases | based on the construction schedule provided by the applicant |
| Construction: Off-Road Equipment | Building 1 Trenching, Buildings 2 and 3 Trenching, and Finishing/Landscaping equipment based on equipment mix approved by Applicant |
| Construction: Trips and VMT | see assumptions file for water truck trips calculations |
| Land Use | modified lot acreage adjusted to account for multiple stories |
| Construction: Architectural Coatings | SCAQMD Rule 1113. Parking area only accounts for parking lots to be striped |
| Construction: Electricity | 2021 SCE Sustainability Report |

# Construction (Offsite Improvements)

# Irwindale Gateway Project (Offsite Improvements) Detailed Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Irwindale Gateway Project (Offsite Improvements) |
| Construction Start Date | 1/1/2025 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 1.80 |
| Precipitation (days) | 22.4 |
| Location | 13620 Live Oak Ln, Irwindale, CA 91706, USA |
| County | Los Angeles-South Coast |
| City | Irwindale |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 4900 |
| EDFZ | 7 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.26 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Road Construction | 0.36 | Mile | 4.11 | 0.00 | — | — | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

# 2. Emissions Summary

## 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 3.91 | 3.27 | 28.3 | 31.9 | 0.07 | 1.22 | 1.85 | 3.07 | 1.12 | 0.28 | 1.40 | — | 7,704 | 7,704 | 0.31 | 0.18 | 3.69 | 7,768 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 3.90 | 3.26 | 28.4 | 31.6 | 0.07 | 1.22 | 1.85 | 3.07 | 1.12 | 0.28 | 1.40 | — | 7,682 | 7,682 | 0.31 | 0.18 | 0.10 | 7,744 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.12 | 1.77 | 15.5 | 17.4 | 0.04 | 0.65 | 0.97 | 1.63 | 0.60 | 0.15 | 0.75 | — | 4,175 | 4,175 | 0.17 | 0.09 | 0.85 | 4,208 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.39 | 0.32 | 2.83 | 3.18 | 0.01 | 0.12 | 0.18 | 0.30 | 0.11 | 0.03 | 0.14 | — | 691 | 691 | 0.03 | 0.02 | 0.14 | 697 |

## 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 3.91 | 3.27 | 28.3 | 31.9 | 0.07 | 1.22 | 1.85 | 3.07 | 1.12 | 0.28 | 1.40 | — | 7,704 | 7,704 | 0.31 | 0.18 | 3.69 | 7,768 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 3.90 | 3.26 | 28.4 | 31.6 | 0.07 | 1.22 | 1.85 | 3.07 | 1.12 | 0.28 | 1.40 | — | 7,682 | 7,682 | 0.31 | 0.18 | 0.10 | 7,744 |
| 2026 | 1.08 | 0.91 | 7.45 | 11.7 | 0.01 | 0.30 | 0.23 | 0.53 | 0.28 | 0.05 | 0.33 | — | 1,844 | 1,844 | 0.08 | 0.02 | 0.02 | 1,852 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 2.12 | 1.77 | 15.5 | 17.4 | 0.04 | 0.65 | 0.97 | 1.63 | 0.60 | 0.15 | 0.75 | — | 4,175 | 4,175 | 0.17 | 0.09 | 0.85 | 4,208 |
| 2026 | < 0.005 | < 0.005 | 0.03 | 0.05 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 7.23 | 7.23 | < 0.005 | < 0.005 | < 0.005 | 7.26 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 0.39 | 0.32 | 2.83 | 3.18 | 0.01 | 0.12 | 0.18 | 0.30 | 0.11 | 0.03 | 0.14 | — | 691 | 691 | 0.03 | 0.02 | 0.14 | 697 |
| 2026 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.20 | 1.20 | < 0.005 | < 0.005 | < 0.005 | 1.20 |

# 3. Construction Emissions Details

## 3.1. Linear, Grubbing & Land Clearing (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.46 | 0.39 | 3.39 | 3.49 | < 0.005 | 0.21 | — | 0.21 | 0.19 | — | 0.19 | — | 490 | 490 | 0.02 | < 0.005 | — | 492 |
| Dust From Material Movement | — | — | — | — | — | — | 0.21 | 0.21 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.03 | 0.24 | 0.25 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 34.9 | 34.9 | < 0.005 | < 0.005 | — | 35.0 |
| Dust From Material Movement | — | — | — | — | — | — | 0.01 | 0.01 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.04 | 0.05 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 5.78 | 5.78 | < 0.005 | < 0.005 | — | 5.80 |
| Dust From Material Movement | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.29 | 0.00 | 0.00 | 0.07 | 0.07 | 0.00 | 0.02 | 0.02 | — | 65.5 | 65.5 | < 0.005 | < 0.005 | 0.01 | 66.4 |
| Vendor | 0.01 | < 0.005 | 0.15 | 0.07 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 127 | 127 | 0.01 | 0.02 | 0.01 | 132 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 4.74 | 4.74 | < 0.005 | < 0.005 | 0.01 | 4.80 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 9.04 | 9.04 | < 0.005 | < 0.005 | 0.01 | 9.44 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.78 | 0.78 | < 0.005 | < 0.005 | < 0.005 | 0.79 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.50 | 1.50 | < 0.005 | < 0.005 | < 0.005 | 1.56 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.3. Linear, Grading & Excavation (2025) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.71 | 3.11 | 27.3 | 29.4 | 0.06 | 1.21 | — | 1.21 | 1.11 | — | 1.11 | — | 6,496 | 6,496 | 0.26 | 0.05 | — | 6,518 |
| Dust From Material Movement | — | — | — | — | — | — | 1.24 | 1.24 | — | 0.13 | 0.13 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 3.71 | 3.11 | 27.3 | 29.4 | 0.06 | 1.21 | — | 1.21 | 1.11 | — | 1.11 | — | 6,496 | 6,496 | 0.26 | 0.05 | — | 6,518 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 1.24 | 1.24 | — | 0.13 | 0.13 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.33 | 1.12 | 9.79 | 10.6 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 2,331 | 2,331 | 0.09 | 0.02 | — | 2,339 |
| Dust From Material Movement | — | — | — | — | — | — | 0.45 | 0.45 | — | 0.05 | 0.05 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.24 | 0.20 | 1.79 | 1.93 | < 0.005 | 0.08 | — | 0.08 | 0.07 | — | 0.07 | — | 386 | 386 | 0.02 | < 0.005 | — | 387 |
| Dust From Material Movement | — | — | — | — | — | — | 0.08 | 0.08 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.13 | 0.13 | 2.09 | 0.00 | 0.00 | 0.39 | 0.39 | 0.00 | 0.09 | 0.09 | — | 415 | 415 | 0.02 | 0.01 | 1.52 | 421 |
| Vendor | 0.06 | 0.02 | 0.90 | 0.44 | 0.01 | 0.01 | 0.21 | 0.23 | 0.01 | 0.06 | 0.06 | — | 793 | 793 | 0.03 | 0.11 | 2.17 | 829 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.13 | 0.14 | 1.77 | 0.00 | 0.00 | 0.39 | 0.39 | 0.00 | 0.09 | 0.09 | — | 393 | 393 | 0.02 | 0.01 | 0.04 | 398 |
| Vendor | 0.06 | 0.02 | 0.94 | 0.45 | 0.01 | 0.01 | 0.21 | 0.23 | 0.01 | 0.06 | 0.06 | — | 794 | 794 | 0.03 | 0.11 | 0.06 | 828 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.05 | 0.06 | 0.67 | 0.00 | 0.00 | 0.14 | 0.14 | 0.00 | 0.03 | 0.03 | — | 143 | 143 | 0.01 | 0.01 | 0.24 | 145 |
| Vendor | 0.02 | 0.01 | 0.34 | 0.16 | < 0.005 | < 0.005 | 0.08 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 285 | 285 | 0.01 | 0.04 | 0.34 | 297 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.12 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 23.7 | 23.7 | < 0.005 | < 0.005 | 0.04 | 24.0 |
| Vendor | < 0.005 | < 0.005 | 0.06 | 0.03 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 47.1 | 47.1 | < 0.005 | 0.01 | 0.06 | 49.2 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.5. Linear, Drainage, Utilities, & Sub-Grade (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 2.99 | 2.51 | 22.9 | 23.6 | 0.05 | 0.91 | — | 0.91 | 0.84 | — | 0.84 | — | 5,694 | 5,694 | 0.23 | 0.05 | — | 5,713 |
| Dust From Material Movement | — | — | — | — | — | — | 1.03 | 1.03 | — | 0.11 | 0.11 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 2.99 | 2.51 | 22.9 | 23.6 | 0.05 | 0.91 | — | 0.91 | 0.84 | — | 0.84 | — | 5,694 | 5,694 | 0.23 | 0.05 | — | 5,713 |
| Dust From Material Movement | — | — | — | — | — | — | 1.03 | 1.03 | — | 0.11 | 0.11 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.53 | 0.45 | 4.08 | 4.21 | 0.01 | 0.16 | — | 0.16 | 0.15 | — | 0.15 | — | 1,014 | 1,014 | 0.04 | 0.01 | — | 1,017 |
| Dust From Material Movement | — | — | — | — | — | — | 0.18 | 0.18 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.08 | 0.75 | 0.77 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 168 | 168 | 0.01 | < 0.005 | — | 168 |
| Dust From Material Movement | — | — | — | — | — | — | 0.03 | 0.03 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.12 | 0.11 | 0.11 | 1.74 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 346 | 346 | 0.01 | 0.01 | 1.27 | 351 |
| Vendor | 0.04 | 0.02 | 0.65 | 0.32 | < 0.005 | 0.01 | 0.15 | 0.16 | < 0.005 | 0.04 | 0.05 | — | 571 | 571 | 0.02 | 0.08 | 1.56 | 597 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.12 | 0.11 | 0.12 | 1.47 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 328 | 328 | 0.02 | 0.01 | 0.03 | 332 |
| Vendor | 0.04 | 0.02 | 0.68 | 0.32 | < 0.005 | 0.01 | 0.15 | 0.16 | < 0.005 | 0.04 | 0.05 | — | 571 | 571 | 0.02 | 0.08 | 0.04 | 596 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.28 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 59.2 | 59.2 | < 0.005 | < 0.005 | 0.10 | 60.0 |
| Vendor | 0.01 | < 0.005 | 0.12 | 0.06 | < 0.005 | < 0.005 | 0.03 | 0.03 | < 0.005 | 0.01 | 0.01 | — | 102 | 102 | < 0.005 | 0.01 | 0.12 | 106 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 9.80 | 9.80 | < 0.005 | < 0.005 | 0.02 | 9.93 |
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 16.8 | 16.8 | < 0.005 | < 0.005 | 0.02 | 17.6 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.7. Linear, Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.06 | 0.89 | 7.71 | 10.8 | 0.01 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 1,620 | 1,620 | 0.07 | 0.01 | — | 1,625 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11 | 0.09 | 0.80 | 1.12 | < 0.005 | 0.04 | — | 0.04 | 0.03 | — | 0.03 | — | 168 | 168 | 0.01 | < 0.005 | — | 169 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.15 | 0.20 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 27.8 | 27.8 | < 0.005 | < 0.005 | — | 27.9 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.08 | 1.03 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.05 | 0.05 | — | 229 | 229 | 0.01 | 0.01 | 0.02 | 232 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.01 | 0.01 | 0.01 | 0.11 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 | 0.01 | — | 24.1 | 24.1 | < 0.005 | < 0.005 | 0.04 | 24.5 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 4.00 | 4.00 | < 0.005 | < 0.005 | 0.01 | 4.05 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.9. Linear, Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.00 | 0.84 | 7.37 | 10.8 | 0.01 | 0.30 | — | 0.30 | 0.28 | — | 0.28 | — | 1,619 | 1,619 | 0.07 | 0.01 | — | 1,625 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 6.34 | 6.34 | < 0.005 | < 0.005 | — | 6.36 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Roa Equipment | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 1.05 | 1.05 | < 0.005 | < 0.005 | — | 1.05 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.08 | 0.96 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.05 | 0.05 | — | 225 | 225 | 0.01 | 0.01 | 0.02 | 228 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.89 | 0.89 | < 0.005 | < 0.005 | < 0.005 | 0.90 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.15 | 0.15 | < 0.005 | < 0.005 | < 0.005 | 0.15 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# 4. Operations Emissions Details

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Linear, Grubbing & Land Clearing | Linear, Grubbing & Land Clearing | 1/1/2025 | 2/6/2025 | 5.00 | 26.0 | — |
| Linear, Grading & Excavation | Linear, Grading & Excavation | 2/7/2025 | 8/8/2025 | 5.00 | 131 | — |
| Linear, Drainage, Utilities, & Sub-Grade | Linear, Drainage, Utilities, & Sub-Grade | 8/9/2025 | 11/8/2025 | 5.00 | 65.0 | — |
| Linear, Paving | Linear, Paving | 11/9/2025 | 1/2/2026 | 5.00 | 40.0 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Linear, Grubbing & Land Clearing | Signal Boards | Electric | Average | 0.00 | 8.00 | 6.00 | 0.82 |
| Linear, Grubbing & Land Clearing | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Linear, Grubbing & Land Clearing | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |
| Linear, Grading & Excavation | Excavators | Diesel | Average | 3.00 | 8.00 | 36.0 | 0.38 |
| Linear, Grading & Excavation | Crawler Tractors | Diesel | Average | 1.00 | 8.00 | 87.0 | 0.43 |
| Linear, Grading & Excavation | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Linear, Grading & Excavation | Rollers | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Linear, Grading & Excavation | Signal Boards | Electric | Average | 0.00 | 8.00 | 6.00 | 0.82 |
| Linear, Grading & Excavation | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Linear, Grading & Excavation | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Linear, Grading & Excavation | Scrapers | Diesel | Average | 2.00 | 8.00 | 423 | 0.48 |
| Linear, Drainage, Utilities, & Sub-Grade | Scrapers | Diesel | Average | 2.00 | 8.00 | 423 | 0.48 |
| Linear, Drainage, Utilities, & Sub-Grade | Rough Terrain Forklifts | Diesel | Average | 1.00 | 8.00 | 96.0 | 0.40 |
| Linear, Drainage, Utilities, & Sub-Grade | Signal Boards | Electric | Average | 0.00 | 8.00 | 6.00 | 0.82 |
| Linear, Drainage, Utilities, & Sub-Grade | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Linear, Drainage, Utilities, & Sub-Grade | Plate Compactors | Diesel | Average | 1.00 | 8.00 | 8.00 | 0.43 |
| Linear, Drainage, Utilities, & Sub-Grade | Pumps | Diesel | Average | 1.00 | 8.00 | 11.0 | 0.74 |
| Linear, Drainage, Utilities, & Sub-Grade | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Linear, Drainage, Utilities, & Sub-Grade | Air Compressors | Diesel | Average | 1.00 | 8.00 | 37.0 | 0.48 |
| Linear, Drainage, Utilities, & Sub-Grade | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Linear, Paving | Rollers | Diesel | Average | 3.00 | 8.00 | 36.0 | 0.38 |
| Linear, Paving | Paving Equipment | Diesel | Average | 1.00 | 8.00 | 89.0 | 0.36 |
| Linear, Paving | Pavers | Diesel | Average | 1.00 | 8.00 | 81.0 | 0.42 |
| Linear, Paving | Signal Boards | Electric | Average | 0.00 | 8.00 | 6.00 | 0.82 |
| Linear, Paving | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Linear, Grubbing & Land Clearing | — | — | — | — |
| Linear, Grubbing & Land Clearing | Worker | 5.00 | 18.5 | LDA,LDT1,LDT2 |
| Linear, Grubbing & Land Clearing | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| Linear, Grubbing & Land Clearing | Hauling | 0.00 | 20.0 | HHDT |
| Linear, Grubbing & Land Clearing | Onsite truck | 0.00 | — | HHDT |
| Linear, Grading & Excavation | — | — | — | — |
| Linear, Grading & Excavation | Worker | 30.0 | 18.5 | LDA,LDT1,LDT2 |
| Linear, Grading & Excavation | Vendor | 25.0 | 10.2 | HHDT,MHDT |
| Linear, Grading & Excavation | Hauling | 0.00 | 20.0 | HHDT |
| Linear, Grading & Excavation | Onsite truck | 0.00 | — | HHDT |
| Linear, Drainage, Utilities, & Sub-Grade | — | — | — | — |
| Linear, Drainage, Utilities, & Sub-Grade | Worker | 25.0 | 18.5 | LDA,LDT1,LDT2 |
| Linear, Drainage, Utilities, & Sub-Grade | Vendor | 18.0 | 10.2 | HHDT,MHDT |
| Linear, Drainage, Utilities, & Sub-Grade | Hauling | 0.00 | 20.0 | HHDT |
| Linear, Drainage, Utilities, & Sub-Grade | Onsite truck | 0.00 | — | HHDT |
| Linear, Paving | — | — | — | — |
| Linear, Paving | Worker | 17.5 | 18.5 | LDA,LDT1,LDT2 |
| Linear, Paving | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Linear, Paving | Hauling | 0.00 | 20.0 | HHDT |
| Linear, Paving | Onsite truck | 0.00 | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

| Control Strategies Applied | PM10 Reduction | PM2.5 Reduction |
|---|---|---|
| Water unpaved roads twice daily | 55% | 55% |
| Limit vehicle speeds on unpaved roads to 25 mph | 44% | 44% |
| Sweep paved roads once per month | 9% | 9% |

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Linear, Grubbing & Land Clearing | 0.00 | 0.00 | 4.11 | 0.00 | — |
| Linear, Grading & Excavation | 0.00 | 0.00 | 4.11 | 0.00 | — |
| Linear, Drainage, Utilities, & Sub-Grade | 0.00 | 0.00 | 4.11 | 0.00 | — |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|---|---|---|---|
| Water Exposed Area | 2 | 61% | 61% |

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| Road Construction | 4.11 | 100% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2025 | 0.00 | 450 | 0.03 | < 0.005 |
| 2026 | 0.00 | 450 | 0.03 | < 0.005 |

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 22.5 | annual days of extreme heat |
| Extreme Precipitation | 6.00 | annual days with precipitation above 20 mm |
| Sea Level Rise | 0.00 | meters of inundation depth |
| Wildfire | 0.00 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 0 | 0 | N/A |
| Wildfire | 1 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 1 | 1 | 3 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 82.6 |
| AQ-PM | 66.5 |

| | |
|---|---|
| AQ-DPM | 68.2 |
| Drinking Water | 84.6 |
| Lead Risk Housing | 67.8 |
| Pesticides | 53.5 |
| Toxic Releases | 75.3 |
| Traffic | 88.3 |
| Effect Indicators | — |
| CleanUp Sites | 83.1 |
| Groundwater | 92.7 |
| Haz Waste Facilities/Generators | 91.7 |
| Impaired Water Bodies | 43.8 |
| Solid Waste | 99.3 |
| Sensitive Population | — |
| Asthma | 54.4 |
| Cardio-vascular | 36.6 |
| Low Birth Weights | 36.1 |
| Socioeconomic Factor Indicators | — |
| Education | 69.8 |
| Housing | 35.3 |
| Linguistic | 36.5 |
| Poverty | 48.7 |
| Unemployment | 73.4 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | — |

| | |
|---|---|
| Employed | — |
| Median HI | — |
| Education | — |
| Bachelor's or higher | — |
| High school enrollment | — |
| Preschool enrollment | — |
| Transportation | — |
| Auto Access | — |
| Active commuting | — |
| Social | — |
| 2-parent households | — |
| Voting | — |
| Neighborhood | — |
| Alcohol availability | — |
| Park access | — |
| Retail density | — |
| Supermarket access | — |
| Tree canopy | — |
| Housing | — |
| Homeownership | — |
| Housing habitability | — |
| Low-inc homeowner severe housing cost burden | — |
| Low-inc renter severe housing cost burden | — |
| Uncrowded housing | — |
| Health Outcomes | — |
| Insured adults | — |
| Arthritis | 0.0 |
| Asthma ER Admissions | 58.6 |

| | |
|---|---|
| High Blood Pressure | 0.0 |
| Cancer (excluding skin) | 0.0 |
| Asthma | 0.0 |
| Coronary Heart Disease | 0.0 |
| Chronic Obstructive Pulmonary Disease | 0.0 |
| Diagnosed Diabetes | 0.0 |
| Life Expectancy at Birth | 0.0 |
| Cognitively Disabled | 87.2 |
| Physically  Disabled | 24.6 |
| Heart Attack ER Admissions | 66.5 |
| Mental Health Not Good | 0.0 |
| Chronic Kidney Disease | 0.0 |
| Obesity | 0.0 |
| Pedestrian Injuries | 0.0 |
| Physical Health Not Good | 0.0 |
| Stroke | 0.0 |
| Health Risk Behaviors | — |
| Binge Drinking | 0.0 |
| Current Smoker | 0.0 |
| No Leisure Time for Physical Activity | 0.0 |
| Climate Change Exposures | — |
| Wildfire Risk | 1.3 |
| SLR Inundation Area | 0.0 |
| Children | 19.0 |
| Elderly | 62.6 |
| English Speaking | 0.0 |
| Foreign-born | 0.0 |
| Outdoor Workers | 37.5 |

| | |
|---|---|
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 29.6 |
| Traffic Density | 0.0 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 0.0 |
| Other Decision Support | — |
| 2016 Voting | 0.0 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 83.0 |
| Healthy Places Index Score for Project Location (b) | — |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | Yes |
| Project Located in a Low-Income Community (Assembly Bill 1550) | Yes |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|

| | |
|---|---|
| Characteristics: Project Details | — |
| Characteristics: Utility Information | Based on 2021 SCE Sustainability Report |
| Construction: Construction Phases | based on information verified by applicant |
| Construction: Trips and VMT | see calculations for water truck trips in assumptions file |
| Construction: Electricity | 2021 SCE Sustainability Report |

# Construction (Sewer Main and Storm Drain)

# Irwindale Gateway Project (Sewer Main and Storm Drain - Private) Detailed Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Irwindale Gateway Project (Sewer Main and Storm Drain - Private) |
| Construction Start Date | 9/15/2026 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 1.80 |
| Precipitation (days) | 22.4 |
| Location | 13620 Live Oak Ln, Irwindale, CA 91706, USA |
| County | Los Angeles-South Coast |
| City | Irwindale |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 4900 |
| EDFZ | 7 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.26 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Other Asphalt Surfaces | 18.4 | 1000sqft | 0.42 | 0.00 | 0.00 | 0.00 | — | — |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 65.5 | 1000sqft | 1.50 | 0.00 | 0.00 | 0.00 | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

# 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.22 | 1.87 | 15.2 | 21.9 | 0.03 | 0.54 | 0.80 | 1.23 | 0.49 | 0.11 | 0.60 | — | 3,911 | 3,911 | 0.16 | 0.07 | 1.60 | 3,934 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 1.37 | 1.15 | 9.75 | 12.7 | 0.02 | 0.33 | 0.24 | 0.58 | 0.31 | 0.06 | 0.37 | — | 2,463 | 2,463 | 0.10 | 0.04 | 0.03 | 2,478 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.62 | 0.52 | 4.39 | 5.96 | 0.01 | 0.14 | 0.11 | 0.26 | 0.13 | 0.03 | 0.16 | — | 1,139 | 1,139 | 0.04 | 0.02 | 0.20 | 1,146 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.11 | 0.09 | 0.80 | 1.09 | < 0.005 | 0.03 | 0.02 | 0.05 | 0.02 | < 0.005 | 0.03 | — | 189 | 189 | 0.01 | < 0.005 | 0.03 | 190 |

### 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 1.39 | 1.16 | 10.2 | 12.9 | 0.03 | 0.43 | 0.80 | 1.23 | 0.39 | 0.11 | 0.51 | — | 3,129 | 3,129 | 0.13 | 0.07 | 1.19 | 3,155 |
| 2027 | 2.22 | 1.87 | 15.2 | 21.9 | 0.03 | 0.54 | 0.44 | 0.98 | 0.49 | 0.10 | 0.60 | — | 3,911 | 3,911 | 0.16 | 0.06 | 1.60 | 3,934 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 1.37 | 1.15 | 9.75 | 12.7 | 0.02 | 0.33 | 0.24 | 0.58 | 0.31 | 0.06 | 0.37 | — | 2,463 | 2,463 | 0.10 | 0.04 | 0.03 | 2,478 |
| 2027 | 1.33 | 1.11 | 9.45 | 12.7 | 0.02 | 0.31 | 0.24 | 0.55 | 0.28 | 0.06 | 0.34 | — | 2,457 | 2,457 | 0.09 | 0.04 | 0.03 | 2,471 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 0.29 | 0.24 | 2.08 | 2.69 | < 0.005 | 0.07 | 0.06 | 0.13 | 0.07 | 0.01 | 0.08 | — | 534 | 534 | 0.02 | 0.01 | 0.10 | 537 |
| 2027 | 0.62 | 0.52 | 4.39 | 5.96 | 0.01 | 0.14 | 0.11 | 0.26 | 0.13 | 0.03 | 0.16 | — | 1,139 | 1,139 | 0.04 | 0.02 | 0.20 | 1,146 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 0.05 | 0.04 | 0.38 | 0.49 | < 0.005 | 0.01 | 0.01 | 0.02 | 0.01 | < 0.005 | 0.01 | — | 88.4 | 88.4 | < 0.005 | < 0.005 | 0.02 | 89.0 |
| 2027 | 0.11 | 0.09 | 0.80 | 1.09 | < 0.005 | 0.03 | 0.02 | 0.05 | 0.02 | < 0.005 | 0.03 | — | 189 | 189 | 0.01 | < 0.005 | 0.03 | 190 |

# 3. Construction Emissions Details

## 3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.34 | 1.13 | 9.84 | 10.8 | 0.03 | 0.42 | — | 0.42 | 0.39 | — | 0.39 | — | 2,716 | 2,716 | 0.11 | 0.02 | — | 2,725 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 0.62 | 0.62 | — | 0.07 | 0.07 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.16 | 0.18 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 44.6 | 44.6 | < 0.005 | < 0.005 | — | 44.8 |
| Dust From Material Movement | — | — | — | — | — | — | 0.01 | 0.01 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.03 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 7.39 | 7.39 | < 0.005 | < 0.005 | — | 7.42 |
| Dust From Material Movement | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.03 | 0.48 | 0.00 | 0.00 | 0.10 | 0.10 | 0.00 | 0.02 | 0.02 | — | 102 | 102 | < 0.005 | < 0.005 | 0.34 | 103 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.02 | 0.01 | 0.34 | 0.17 | < 0.005 | < 0.005 | 0.09 | 0.09 | < 0.005 | 0.02 | 0.03 | — | 312 | 312 | 0.01 | 0.04 | 0.84 | 326 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.61 | 1.61 | < 0.005 | < 0.005 | < 0.005 | 1.63 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.13 | 5.13 | < 0.005 | < 0.005 | 0.01 | 5.36 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.27 | 0.27 | < 0.005 | < 0.005 | < 0.005 | 0.27 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.85 | 0.85 | < 0.005 | < 0.005 | < 0.005 | 0.89 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.3. Pipeline Construction (2026) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.91 | 0.76 | 6.67 | 8.03 | 0.02 | 0.25 | — | 0.25 | 0.23 | — | 0.23 | — | 1,579 | 1,579 | 0.06 | 0.01 | — | 1,585 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.91 | 0.76 | 6.67 | 8.03 | 0.02 | 0.25 | — | 0.25 | 0.23 | — | 0.23 | — | 1,579 | 1,579 | 0.06 | 0.01 | — | 1,585 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.18 | 0.15 | 1.30 | 1.57 | < 0.005 | 0.05 | — | 0.05 | 0.04 | — | 0.04 | — | 309 | 309 | 0.01 | < 0.005 | — | 310 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.03 | 0.24 | 0.29 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 51.2 | 51.2 | < 0.005 | < 0.005 | — | 51.3 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.39 | 0.00 | 0.00 | 0.08 | 0.08 | 0.00 | 0.02 | 0.02 | — | 81.3 | 81.3 | < 0.005 | < 0.005 | 0.28 | 82.5 |
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 62.4 | 62.4 | < 0.005 | 0.01 | 0.17 | 65.2 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.03 | 0.33 | 0.00 | 0.00 | 0.08 | 0.08 | 0.00 | 0.02 | 0.02 | — | 77.1 | 77.1 | < 0.005 | < 0.005 | 0.01 | 78.0 |
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 62.4 | 62.4 | < 0.005 | 0.01 | < 0.005 | 65.1 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | < 0.005 | < 0.005 | 0.01 | 0.07 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 15.3 | 15.3 | < 0.005 | < 0.005 | 0.02 | 15.5 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 12.2 | 12.2 | < 0.005 | < 0.005 | 0.01 | 12.8 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.53 | 2.53 | < 0.005 | < 0.005 | < 0.005 | 2.57 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.02 | 2.02 | < 0.005 | < 0.005 | < 0.005 | 2.11 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.5. Pipeline Construction (2027) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.88 | 0.74 | 6.45 | 8.02 | 0.02 | 0.23 | — | 0.23 | 0.21 | — | 0.21 | — | 1,580 | 1,580 | 0.06 | 0.01 | — | 1,585 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.88 | 0.74 | 6.45 | 8.02 | 0.02 | 0.23 | — | 0.23 | 0.21 | — | 0.21 | — | 1,580 | 1,580 | 0.06 | 0.01 | — | 1,585 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.38 | 0.32 | 2.80 | 3.48 | 0.01 | 0.10 | — | 0.10 | 0.09 | — | 0.09 | — | 686 | 686 | 0.03 | 0.01 | — | 689 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.07 | 0.06 | 0.51 | 0.64 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 114 | 114 | < 0.005 | < 0.005 | — | 114 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.36 | 0.00 | 0.00 | 0.08 | 0.08 | 0.00 | 0.02 | 0.02 | — | 79.7 | 79.7 | < 0.005 | < 0.005 | 0.25 | 80.9 |
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 61.1 | 61.1 | < 0.005 | 0.01 | 0.16 | 63.9 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.03 | 0.31 | 0.00 | 0.00 | 0.08 | 0.08 | 0.00 | 0.02 | 0.02 | — | 75.6 | 75.6 | < 0.005 | < 0.005 | 0.01 | 76.5 |
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 61.2 | 61.2 | < 0.005 | 0.01 | < 0.005 | 63.8 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.14 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 33.3 | 33.3 | < 0.005 | < 0.005 | 0.05 | 33.8 |
| Vendor | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 26.6 | 26.6 | < 0.005 | < 0.005 | 0.03 | 27.7 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 5.52 | 5.52 | < 0.005 | < 0.005 | 0.01 | 5.59 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 4.40 | 4.40 | < 0.005 | < 0.005 | < 0.005 | 4.59 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.7. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.77 | 0.65 | 5.74 | 8.20 | 0.01 | 0.23 | — | 0.23 | 0.21 | — | 0.21 | — | 1,244 | 1,244 | 0.05 | 0.01 | — | 1,248 |
| Paving | 0.06 | 0.06 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.03 | 0.28 | 0.40 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 61.3 | 61.3 | < 0.005 | < 0.005 | — | 61.6 |
| Paving | < 0.005 | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.05 | 0.07 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 10.2 | 10.2 | < 0.005 | < 0.005 | — | 10.2 |
| Paving | < 0.005 | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.05 | 0.90 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 199 | 199 | 0.01 | 0.01 | 0.62 | 202 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 9.46 | 9.46 | < 0.005 | < 0.005 | 0.01 | 9.58 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.57 | 1.57 | < 0.005 | < 0.005 | < 0.005 | 1.59 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.9. Utility Trenching (2026) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 0.39 | 0.32 | 2.87 | 3.76 | 0.01 | 0.08 | — | 0.08 | 0.08 | — | 0.08 | — | 553 | 553 | 0.02 | < 0.005 | — | 555 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.39 | 0.32 | 2.87 | 3.76 | 0.01 | 0.08 | — | 0.08 | 0.08 | — | 0.08 | — | 553 | 553 | 0.02 | < 0.005 | — | 555 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.08 | 0.06 | 0.56 | 0.74 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 108 | 108 | < 0.005 | < 0.005 | — | 109 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.10 | 0.13 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 17.9 | 17.9 | < 0.005 | < 0.005 | — | 18.0 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.04 | 0.04 | 0.65 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 135 | 135 | 0.01 | < 0.005 | 0.46 | 137 |
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 62.4 | 62.4 | < 0.005 | 0.01 | 0.17 | 65.2 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.04 | 0.04 | 0.55 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 128 | 128 | 0.01 | < 0.005 | 0.01 | 130 |
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 62.4 | 62.4 | < 0.005 | 0.01 | < 0.005 | 65.1 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.11 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 25.5 | 25.5 | < 0.005 | < 0.005 | 0.04 | 25.9 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 12.2 | 12.2 | < 0.005 | < 0.005 | 0.01 | 12.8 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 4.22 | 4.22 | < 0.005 | < 0.005 | 0.01 | 4.28 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.02 | 2.02 | < 0.005 | < 0.005 | < 0.005 | 2.11 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.11. Utility Trenching (2027) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.37 | 0.31 | 2.80 | 3.75 | 0.01 | 0.07 | — | 0.07 | 0.07 | — | 0.07 | — | 553 | 553 | 0.02 | < 0.005 | — | 555 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.37 | 0.31 | 2.80 | 3.75 | 0.01 | 0.07 | — | 0.07 | 0.07 | — | 0.07 | — | 553 | 553 | 0.02 | < 0.005 | — | 555 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.16 | 0.14 | 1.21 | 1.63 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 240 | 240 | 0.01 | < 0.005 | — | 241 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.22 | 0.30 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 39.8 | 39.8 | < 0.005 | < 0.005 | — | 39.9 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.04 | 0.03 | 0.60 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 133 | 133 | 0.01 | < 0.005 | 0.41 | 135 |
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 61.1 | 61.1 | < 0.005 | 0.01 | 0.16 | 63.9 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.03 | 0.04 | 0.51 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 126 | 126 | < 0.005 | < 0.005 | 0.01 | 127 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 61.2 | 61.2 | < 0.005 | 0.01 | < 0.005 | 63.8 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.23 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 55.5 | 55.5 | < 0.005 | < 0.005 | 0.08 | 56.3 |
| Vendor | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 26.6 | 26.6 | < 0.005 | < 0.005 | 0.03 | 27.7 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 9.20 | 9.20 | < 0.005 | < 0.005 | 0.01 | 9.31 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 4.40 | 4.40 | < 0.005 | < 0.005 | < 0.005 | 4.59 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# 4. Operations Emissions Details

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Site Preparation | Site Preparation | 9/15/2026 | 9/22/2026 | 5.00 | 6.00 | — |
| Pipeline Construction | Building Construction | 9/23/2026 | 8/10/2027 | 5.00 | 230 | — |
| Paving | Paving | 7/21/2027 | 8/15/2027 | 5.00 | 18.0 | — |

| | | | | | | |
|---|---|---|---|---|---|---|
| Utility Trenching | Trenching | 9/23/2026 | 8/10/2027 | 5.00 | 230 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Site Preparation | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Site Preparation | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 7.00 | 84.0 | 0.37 |
| Site Preparation | Scrapers | Diesel | Average | 1.00 | 8.00 | 423 | 0.48 |
| Site Preparation | Rubber Tired Dozers | Diesel | Average | 0.00 | 7.00 | 367 | 0.40 |
| Pipeline Construction | Cranes | Diesel | Average | 1.00 | 6.00 | 367 | 0.29 |
| Pipeline Construction | Forklifts | Diesel | Average | 0.00 | 6.00 | 82.0 | 0.20 |
| Pipeline Construction | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 6.00 | 84.0 | 0.37 |
| Pipeline Construction | Concrete/Industrial Saws | Diesel | Average | 1.00 | 6.00 | 33.0 | 0.73 |
| Pipeline Construction | Paving Equipment | Diesel | Average | 1.00 | 6.00 | 89.0 | 0.36 |
| Pipeline Construction | Rollers | Diesel | Average | 2.00 | 6.00 | 36.0 | 0.38 |
| Pipeline Construction | Generator Sets | Diesel | Average | 0.00 | 8.00 | 14.0 | 0.74 |
| Pipeline Construction | Welders | Diesel | Average | 0.00 | 8.00 | 46.0 | 0.45 |
| Paving | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| Paving | Cement and Mortar Mixers | Diesel | Average | 1.00 | 8.00 | 10.0 | 0.56 |
| Paving | Pavers | Diesel | Average | 1.00 | 8.00 | 81.0 | 0.42 |
| Paving | Rollers | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Paving | Paving Equipment | Diesel | Average | 1.00 | 8.00 | 89.0 | 0.36 |
| Utility Trenching | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 6.00 | 84.0 | 0.37 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Utility Trenching | Dumpers/Tenders | Diesel | Average | 1.00 | 6.00 | 16.0 | 0.38 |
| Utility Trenching | Concrete/Industrial Saws | Diesel | Average | 1.00 | 6.00 | 33.0 | 0.73 |
| Utility Trenching | Excavators | Diesel | Average | 1.00 | 6.00 | 36.0 | 0.38 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Site Preparation | — | — | — | — |
| Site Preparation | Worker | 7.50 | 18.5 | LDA,LDT1,LDT2 |
| Site Preparation | Vendor | 10.0 | 10.2 | HHDT,MHDT |
| Site Preparation | Hauling | 0.00 | 20.0 | HHDT |
| Site Preparation | Onsite truck | 0.00 | — | HHDT |
| Pipeline Construction | — | — | — | — |
| Pipeline Construction | Worker | 6.00 | 18.5 | LDA,LDT1,LDT2 |
| Pipeline Construction | Vendor | 2.00 | 10.2 | HHDT,MHDT |
| Pipeline Construction | Hauling | 0.00 | 20.0 | HHDT |
| Pipeline Construction | Onsite truck | 0.00 | — | HHDT |
| Paving | — | — | — | — |
| Paving | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Paving | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Paving | Hauling | 0.00 | 20.0 | HHDT |
| Paving | Onsite truck | 0.00 | — | HHDT |
| Utility Trenching | — | — | — | — |
| Utility Trenching | Worker | 10.0 | 18.5 | LDA,LDT1,LDT2 |
| Utility Trenching | Vendor | 2.00 | 10.2 | HHDT,MHDT |
| Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |
| Utility Trenching | Onsite truck | 0.00 | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

| Control Strategies Applied | PM10 Reduction | PM2.5 Reduction |
|---|---|---|
| Water unpaved roads twice daily | 55% | 55% |
| Limit vehicle speeds on unpaved roads to 25 mph | 44% | 44% |
| Sweep paved roads once per month | 9% | 9% |

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Site Preparation | 0.00 | 0.00 | 9.00 | 0.00 | — |
| Paving | 0.00 | 0.00 | 0.00 | 0.00 | 1.93 |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|---|---|---|---|
| Water Exposed Area | 2 | 61% | 61% |

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| Other Asphalt Surfaces | 0.42 | 100% |

| | | |
|---|---|---|
| Other Non-Asphalt Surfaces | 1.50 | 0% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2026 | 0.00 | 450 | 0.03 | < 0.005 |
| 2027 | 0.00 | 450 | 0.03 | < 0.005 |

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 22.5 | annual days of extreme heat |
| Extreme Precipitation | 6.00 | annual days with precipitation above 20 mm |
| Sea Level Rise | 0.00 | meters of inundation depth |
| Wildfire | 0.00 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 0 | 0 | N/A |
| Wildfire | 1 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 1 | 1 | 3 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 82.6 |
| AQ-PM | 66.5 |
| AQ-DPM | 68.2 |
| Drinking Water | 84.6 |

| | |
|---|---|
| Lead Risk Housing | 67.8 |
| Pesticides | 53.5 |
| Toxic Releases | 75.3 |
| Traffic | 88.3 |
| Effect Indicators | — |
| CleanUp Sites | 83.1 |
| Groundwater | 92.7 |
| Haz Waste Facilities/Generators | 91.7 |
| Impaired Water Bodies | 43.8 |
| Solid Waste | 99.3 |
| Sensitive Population | — |
| Asthma | 54.4 |
| Cardio-vascular | 36.6 |
| Low Birth Weights | 36.1 |
| Socioeconomic Factor Indicators | — |
| Education | 69.8 |
| Housing | 35.3 |
| Linguistic | 36.5 |
| Poverty | 48.7 |
| Unemployment | 73.4 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | — |
| Employed | — |
| Median HI | — |

| | |
|---|---|
| Education | — |
| Bachelor's or higher | — |
| High school enrollment | — |
| Preschool enrollment | — |
| Transportation | — |
| Auto Access | — |
| Active commuting | — |
| Social | — |
| 2-parent households | — |
| Voting | — |
| Neighborhood | — |
| Alcohol availability | — |
| Park access | — |
| Retail density | — |
| Supermarket access | — |
| Tree canopy | — |
| Housing | — |
| Homeownership | — |
| Housing habitability | — |
| Low-inc homeowner severe housing cost burden | — |
| Low-inc renter severe housing cost burden | — |
| Uncrowded housing | — |
| Health Outcomes | — |
| Insured adults | — |
| Arthritis | 0.0 |
| Asthma ER Admissions | 58.6 |
| High Blood Pressure | 0.0 |
| Cancer (excluding skin) | 0.0 |

| | |
|---|---|
| Asthma | 0.0 |
| Coronary Heart Disease | 0.0 |
| Chronic Obstructive Pulmonary Disease | 0.0 |
| Diagnosed Diabetes | 0.0 |
| Life Expectancy at Birth | 0.0 |
| Cognitively Disabled | 87.2 |
| Physically  Disabled | 24.6 |
| Heart Attack ER Admissions | 66.5 |
| Mental Health Not Good | 0.0 |
| Chronic Kidney Disease | 0.0 |
| Obesity | 0.0 |
| Pedestrian Injuries | 0.0 |
| Physical Health Not Good | 0.0 |
| Stroke | 0.0 |
| Health Risk Behaviors | — |
| Binge Drinking | 0.0 |
| Current Smoker | 0.0 |
| No Leisure Time for Physical Activity | 0.0 |
| Climate Change Exposures | — |
| Wildfire Risk | 1.3 |
| SLR Inundation Area | 0.0 |
| Children | 19.0 |
| Elderly | 62.6 |
| English Speaking | 0.0 |
| Foreign-born | 0.0 |
| Outdoor Workers | 37.5 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 29.6 |

| | |
|---|---|
| Traffic Density | 0.0 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 0.0 |
| Other Decision Support | — |
| 2016 Voting | 0.0 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 83.0 |
| Healthy Places Index Score for Project Location (b) | — |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | Yes |
| Project Located in a Low-Income Community (Assembly Bill 1550) | Yes |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Characteristics: Project Details | — |
| Characteristics: Utility Information | Based on 2021 SCE Sustainability Report |

| | |
|---|---|
| Construction: Construction Phases | Based on information provided by Applicant |
| Construction: Off-Road Equipment | based on equipment mix for a similar project in the region |
| Construction: Trips and VMT | See assumptions file for water truck trip calculations. 6 worker trips for pipeline construction based on similar project in the region and 2 one way vendor trips for concrete truck per day. |
| Construction: Electricity | 2021 SCE Sustainability Report |

# Irwindale Gateway Project (Sewer Main and Storm Drain - Public) Detailed Report

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8. User Changes to Default Data

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Irwindale Gateway Project (Sewer Main and Storm Drain - Public) |
| Construction Start Date | 1/30/2025 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 1.80 |
| Precipitation (days) | 22.4 |
| Location | 13620 Live Oak Ln, Irwindale, CA 91706, USA |
| County | Los Angeles-South Coast |
| City | Irwindale |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 4900 |
| EDFZ | 7 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.26 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Other Asphalt Surfaces | 3.37 | 1000sqft | 0.08 | 0.00 | 0.00 | 0.00 | — | — |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 12.0 | 1000sqft | 0.28 | 0.00 | 0.00 | 0.00 | — | — |

## 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

# 2. Emissions Summary

## 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 1.44 | 1.21 | 10.2 | 13.0 | 0.02 | 0.37 | 0.24 | 0.61 | 0.34 | 0.06 | 0.40 | — | 2,481 | 2,481 | 0.10 | 0.04 | 1.16 | 2,498 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.36 | 1.98 | 16.4 | 22.0 | 0.03 | 0.64 | 0.80 | 1.28 | 0.59 | 0.11 | 0.70 | — | 3,911 | 3,911 | 0.16 | 0.07 | 0.05 | 3,933 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.98 | 0.82 | 6.91 | 8.79 | 0.01 | 0.26 | 0.17 | 0.43 | 0.23 | 0.04 | 0.27 | — | 1,681 | 1,681 | 0.07 | 0.03 | 0.34 | 1,692 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.18 | 0.15 | 1.26 | 1.60 | < 0.005 | 0.05 | 0.03 | 0.08 | 0.04 | 0.01 | 0.05 | — | 278 | 278 | 0.01 | < 0.005 | 0.06 | 280 |

## 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 1.44 | 1.21 | 10.2 | 13.0 | 0.02 | 0.37 | 0.24 | 0.61 | 0.34 | 0.06 | 0.40 | — | 2,481 | 2,481 | 0.10 | 0.04 | 1.16 | 2,498 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 2.36 | 1.98 | 16.4 | 22.0 | 0.03 | 0.64 | 0.80 | 1.28 | 0.59 | 0.11 | 0.70 | — | 3,911 | 3,911 | 0.16 | 0.07 | 0.05 | 3,933 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 0.98 | 0.82 | 6.91 | 8.79 | 0.01 | 0.26 | 0.17 | 0.43 | 0.23 | 0.04 | 0.27 | — | 1,681 | 1,681 | 0.07 | 0.03 | 0.34 | 1,692 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 0.18 | 0.15 | 1.26 | 1.60 | < 0.005 | 0.05 | 0.03 | 0.08 | 0.04 | 0.01 | 0.05 | — | 278 | 278 | 0.01 | < 0.005 | 0.06 | 280 |

# 3. Construction Emissions Details

## 3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.42 | 1.19 | 10.9 | 11.0 | 0.03 | 0.47 | — | 0.47 | 0.43 | — | 0.43 | — | 2,717 | 2,717 | 0.11 | 0.02 | — | 2,726 |
| Dust From Material Movement | — | — | — | — | — | — | 0.62 | 0.62 | — | 0.07 | 0.07 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.18 | 0.18 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 44.7 | 44.7 | < 0.005 | < 0.005 | — | 44.8 |
| Dust From Material Movement | — | — | — | — | — | — | 0.01 | 0.01 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.03 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 7.39 | 7.39 | < 0.005 | < 0.005 | — | 7.42 |
| Dust From Material Movement | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.03 | 0.04 | 0.44 | 0.00 | 0.00 | 0.10 | 0.10 | 0.00 | 0.02 | 0.02 | — | 98.3 | 98.3 | < 0.005 | < 0.005 | 0.01 | 99.5 |
| Vendor | 0.02 | 0.01 | 0.38 | 0.18 | < 0.005 | < 0.005 | 0.09 | 0.09 | < 0.005 | 0.02 | 0.03 | — | 317 | 317 | 0.01 | 0.04 | 0.02 | 331 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.64 | 1.64 | < 0.005 | < 0.005 | < 0.005 | 1.66 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.22 | 5.22 | < 0.005 | < 0.005 | 0.01 | 5.45 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.27 | 0.27 | < 0.005 | < 0.005 | < 0.005 | 0.28 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.86 | 0.86 | < 0.005 | < 0.005 | < 0.005 | 0.90 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.3. Pipeline Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.95 | 0.79 | 7.00 | 8.10 | 0.02 | 0.27 | — | 0.27 | 0.25 | — | 0.25 | — | 1,580 | 1,580 | 0.06 | 0.01 | — | 1,585 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.95 | 0.79 | 7.00 | 8.10 | 0.02 | 0.27 | — | 0.27 | 0.25 | — | 0.25 | — | 1,580 | 1,580 | 0.06 | 0.01 | — | 1,585 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.60 | 0.50 | 4.41 | 5.10 | 0.01 | 0.17 | — | 0.17 | 0.16 | — | 0.16 | — | 996 | 996 | 0.04 | 0.01 | — | 999 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11 | 0.09 | 0.80 | 0.93 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 165 | 165 | 0.01 | < 0.005 | — | 165 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.03 | 0.42 | 0.00 | 0.00 | 0.08 | 0.08 | 0.00 | 0.02 | 0.02 | — | 83.0 | 83.0 | < 0.005 | < 0.005 | 0.30 | 84.2 |
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.04 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 63.5 | 63.5 | < 0.005 | 0.01 | 0.17 | 66.3 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.03 | 0.35 | 0.00 | 0.00 | 0.08 | 0.08 | 0.00 | 0.02 | 0.02 | — | 78.6 | 78.6 | < 0.005 | < 0.005 | 0.01 | 79.6 |
| Vendor | < 0.005 | < 0.005 | 0.08 | 0.04 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 63.5 | 63.5 | < 0.005 | 0.01 | < 0.005 | 66.2 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.23 | 0.00 | 0.00 | 0.05 | 0.05 | 0.00 | 0.01 | 0.01 | — | 50.3 | 50.3 | < 0.005 | < 0.005 | 0.08 | 51.0 |
| Vendor | < 0.005 | < 0.005 | 0.05 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 40.0 | 40.0 | < 0.005 | 0.01 | 0.05 | 41.8 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 8.33 | 8.33 | < 0.005 | < 0.005 | 0.01 | 8.44 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.62 | 6.62 | < 0.005 | < 0.005 | 0.01 | 6.91 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.5. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.83 | 0.70 | 6.13 | 8.21 | 0.01 | 0.27 | — | 0.27 | 0.25 | — | 0.25 | — | 1,244 | 1,244 | 0.05 | 0.01 | — | 1,248 |
| Paving | 0.01 | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.03 | 0.30 | 0.41 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 61.4 | 61.4 | < 0.005 | < 0.005 | — | 61.6 |
| Paving | < 0.005 | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 0.01 | 0.01 | 0.06 | 0.07 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 10.2 | 10.2 | < 0.005 | < 0.005 | — | 10.2 |
| Paving | < 0.005 | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.07 | 0.88 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 197 | 197 | 0.01 | 0.01 | 0.02 | 199 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 9.84 | 9.84 | < 0.005 | < 0.005 | 0.02 | 9.97 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.63 | 1.63 | < 0.005 | < 0.005 | < 0.005 | 1.65 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.7. Utility Trenching (2025) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.41 | 0.34 | 2.96 | 3.77 | 0.01 | 0.10 | — | 0.10 | 0.09 | — | 0.09 | — | 553 | 553 | 0.02 | < 0.005 | — | 555 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.41 | 0.34 | 2.96 | 3.77 | 0.01 | 0.10 | — | 0.10 | 0.09 | — | 0.09 | — | 553 | 553 | 0.02 | < 0.005 | — | 555 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.26 | 0.21 | 1.86 | 2.37 | < 0.005 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 349 | 349 | 0.01 | < 0.005 | — | 350 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.05 | 0.04 | 0.34 | 0.43 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 57.7 | 57.7 | < 0.005 | < 0.005 | — | 57.9 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.05 | 0.04 | 0.04 | 0.70 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 138 | 138 | 0.01 | < 0.005 | 0.51 | 140 |
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.04 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 63.5 | 63.5 | < 0.005 | 0.01 | 0.17 | 66.3 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.04 | 0.05 | 0.59 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 131 | 131 | 0.01 | < 0.005 | 0.01 | 133 |
| Vendor | < 0.005 | < 0.005 | 0.08 | 0.04 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 63.5 | 63.5 | < 0.005 | 0.01 | < 0.005 | 66.2 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.03 | 0.39 | 0.00 | 0.00 | 0.08 | 0.08 | 0.00 | 0.02 | 0.02 | — | 83.8 | 83.8 | < 0.005 | < 0.005 | 0.14 | 84.9 |
| Vendor | < 0.005 | < 0.005 | 0.05 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 40.0 | 40.0 | < 0.005 | 0.01 | 0.05 | 41.8 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | < 0.005 | 0.01 | 0.07 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 13.9 | 13.9 | < 0.005 | < 0.005 | 0.02 | 14.1 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.62 | 6.62 | < 0.005 | < 0.005 | 0.01 | 6.91 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# 4. Operations Emissions Details

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Site Preparation | Site Preparation | 1/30/2025 | 2/6/2025 | 5.00 | 6.00 | — |
| Pipeline Construction | Building Construction | 2/7/2025 | 12/25/2025 | 5.00 | 230 | — |
| Paving | Paving | 12/8/2025 | 12/31/2025 | 5.00 | 18.0 | — |
| Utility Trenching | Trenching | 2/7/2025 | 12/25/2025 | 5.00 | 230 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Site Preparation | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Site Preparation | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 7.00 | 84.0 | 0.37 |
| Site Preparation | Scrapers | Diesel | Average | 1.00 | 8.00 | 423 | 0.48 |
| Pipeline Construction | Cranes | Diesel | Average | 1.00 | 6.00 | 367 | 0.29 |
| Pipeline Construction | Forklifts | Diesel | Average | 0.00 | 6.00 | 82.0 | 0.20 |
| Pipeline Construction | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 6.00 | 84.0 | 0.37 |
| Pipeline Construction | Concrete/Industrial Saws | Diesel | Average | 1.00 | 6.00 | 33.0 | 0.73 |
| Pipeline Construction | Paving Equipment | Diesel | Average | 1.00 | 6.00 | 89.0 | 0.36 |
| Pipeline Construction | Rollers | Diesel | Average | 2.00 | 6.00 | 36.0 | 0.38 |
| Paving | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| Paving | Cement and Mortar Mixers | Diesel | Average | 1.00 | 8.00 | 10.0 | 0.56 |
| Paving | Pavers | Diesel | Average | 1.00 | 8.00 | 81.0 | 0.42 |
| Paving | Rollers | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Paving | Paving Equipment | Diesel | Average | 1.00 | 8.00 | 89.0 | 0.36 |
| Utility Trenching | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 6.00 | 84.0 | 0.37 |
| Utility Trenching | Dumpers/Tenders | Diesel | Average | 1.00 | 6.00 | 16.0 | 0.38 |
| Utility Trenching | Concrete/Industrial Saws | Diesel | Average | 1.00 | 6.00 | 33.0 | 0.73 |
| Utility Trenching | Excavators | Diesel | Average | 1.00 | 6.00 | 36.0 | 0.38 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Site Preparation | — | — | — | — |
| Site Preparation | Worker | 7.50 | 18.5 | LDA,LDT1,LDT2 |
| Site Preparation | Vendor | 10.0 | 10.2 | HHDT,MHDT |
| Site Preparation | Hauling | 0.00 | 20.0 | HHDT |
| Site Preparation | Onsite truck | 0.00 | — | HHDT |
| Pipeline Construction | — | — | — | — |
| Pipeline Construction | Worker | 6.00 | 18.5 | LDA,LDT1,LDT2 |
| Pipeline Construction | Vendor | 2.00 | 10.2 | HHDT,MHDT |
| Pipeline Construction | Hauling | 0.00 | 20.0 | HHDT |
| Pipeline Construction | Onsite truck | 0.00 | — | HHDT |
| Paving | — | — | — | — |
| Paving | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Paving | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Paving | Hauling | 0.00 | 20.0 | HHDT |
| Paving | Onsite truck | 0.00 | — | HHDT |
| Utility Trenching | — | — | — | — |
| Utility Trenching | Worker | 10.0 | 18.5 | LDA,LDT1,LDT2 |

| | | | | |
|---|---|---|---|---|
| Utility Trenching | Vendor | 2.00 | 10.2 | HHDT,MHDT |
| Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |
| Utility Trenching | Onsite truck | 0.00 | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

| Control Strategies Applied | PM10 Reduction | PM2.5 Reduction |
|---|---|---|
| Water unpaved roads twice daily | 55% | 55% |
| Limit vehicle speeds on unpaved roads to 25 mph | 44% | 44% |
| Sweep paved roads once per month | 9% | 9% |

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Site Preparation | 0.00 | 0.00 | 9.00 | 0.00 | — |
| Paving | 0.00 | 0.00 | 0.00 | 0.00 | 0.35 |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|---|---|---|---|
| Water Exposed Area | 2 | 61% | 61% |

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| Other Asphalt Surfaces | 0.08 | 100% |
| Other Non-Asphalt Surfaces | 0.28 | 0% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2025 | 0.00 | 450 | 0.03 | < 0.005 |

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 22.5 | annual days of extreme heat |
| Extreme Precipitation | 6.00 | annual days with precipitation above 20 mm |
| Sea Level Rise | 0.00 | meters of inundation depth |
| Wildfire | 0.00 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 0 | 0 | N/A |
| Wildfire | 1 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 1 | 1 | 3 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 82.6 |

| | |
|---|---|
| AQ-PM | 66.5 |
| AQ-DPM | 68.2 |
| Drinking Water | 84.6 |
| Lead Risk Housing | 67.8 |
| Pesticides | 53.5 |
| Toxic Releases | 75.3 |
| Traffic | 88.3 |
| Effect Indicators | — |
| CleanUp Sites | 83.1 |
| Groundwater | 92.7 |
| Haz Waste Facilities/Generators | 91.7 |
| Impaired Water Bodies | 43.8 |
| Solid Waste | 99.3 |
| Sensitive Population | — |
| Asthma | 54.4 |
| Cardio-vascular | 36.6 |
| Low Birth Weights | 36.1 |
| Socioeconomic Factor Indicators | — |
| Education | 69.8 |
| Housing | 35.3 |
| Linguistic | 36.5 |
| Poverty | 48.7 |
| Unemployment | 73.4 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |

| | |
|---|---|
| Above Poverty | — |
| Employed | — |
| Median HI | — |
| Education | — |
| Bachelor's or higher | — |
| High school enrollment | — |
| Preschool enrollment | — |
| Transportation | — |
| Auto Access | — |
| Active commuting | — |
| Social | — |
| 2-parent households | — |
| Voting | — |
| Neighborhood | — |
| Alcohol availability | — |
| Park access | — |
| Retail density | — |
| Supermarket access | — |
| Tree canopy | — |
| Housing | — |
| Homeownership | — |
| Housing habitability | — |
| Low-inc homeowner severe housing cost burden | — |
| Low-inc renter severe housing cost burden | — |
| Uncrowded housing | — |
| Health Outcomes | — |
| Insured adults | — |
| Arthritis | 0.0 |

| | |
|---|---|
| Asthma ER Admissions | 58.6 |
| High Blood Pressure | 0.0 |
| Cancer (excluding skin) | 0.0 |
| Asthma | 0.0 |
| Coronary Heart Disease | 0.0 |
| Chronic Obstructive Pulmonary Disease | 0.0 |
| Diagnosed Diabetes | 0.0 |
| Life Expectancy at Birth | 0.0 |
| Cognitively Disabled | 87.2 |
| Physically  Disabled | 24.6 |
| Heart Attack ER Admissions | 66.5 |
| Mental Health Not Good | 0.0 |
| Chronic Kidney Disease | 0.0 |
| Obesity | 0.0 |
| Pedestrian Injuries | 0.0 |
| Physical Health Not Good | 0.0 |
| Stroke | 0.0 |
| Health Risk Behaviors | — |
| Binge Drinking | 0.0 |
| Current Smoker | 0.0 |
| No Leisure Time for Physical Activity | 0.0 |
| Climate Change Exposures | — |
| Wildfire Risk | 1.3 |
| SLR Inundation Area | 0.0 |
| Children | 19.0 |
| Elderly | 62.6 |
| English Speaking | 0.0 |
| Foreign-born | 0.0 |

| | |
|---|---|
| Outdoor Workers | 37.5 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 29.6 |
| Traffic Density | 0.0 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 0.0 |
| Other Decision Support | — |
| 2016 Voting | 0.0 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 83.0 |
| Healthy Places Index Score for Project Location (b) | — |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | Yes |
| Project Located in a Low-Income Community (Assembly Bill 1550) | Yes |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Characteristics: Project Details | — |
| Characteristics: Utility Information | Based on 2021 SCE Sustainability Report |
| Construction: Construction Phases | Based on information provided by Applicant |
| Construction: Off-Road Equipment | based on equipment mix for a similar project in the region |
| Construction: Trips and VMT | See assumptions file for water truck trip calculations. 6 worker trips for pipeline construction based on similar project in the region and 2 one way vendor trips for concrete truck per day. |
| Construction: Electricity | 2021 SCE Sustainability Report |

# Appendix F. Preliminary Hydrology Report (new DEIR Appendix I1)

# Appendices

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# PRELIMINARY HYDROLOGY REPORT

# Irwindale Gateway Development

Irwindale, CA

Prepared for:
**Kearny Real Estate Company**
11150 Santa Monica Blvd, Suite 300
Los Angeles, CA 90025

*Prepared under the Supervision of:*

Oscar Rivera, P.E.

June 19, 2024

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March 20, 2023

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## 1.Project Description

The Irwindale Gateway project is a Logistics and Distribution center that will construct three industrial buildings and associated parking and loading docks. The project is located in the City of Irwindale in the County of Los Angeles, bound by Interstate 605 on the project's westerly boundary, Live Oak Ln on the north and east and Live Oak Avenue on the south. The existing site is a vacant lot that was previously a 60-acre rock and cement quarry and is set to begin rough grading in the near future. The existing site drains towards an existing Pit/detention basin that is located on the westerly property line. The report hereon represents the hydrology and hydraulic analysis for option 1 site plan, where option 2 represents the site plan option for the construction of BESS (Battery Energy Storage System) site. The proposed option 1 study hereon effectively addresses the hydrology and hydraulics for option 2, since option 1 contains a larger impervious areas and project foot print.

The purpose of this report is to provide engineering calculations in support of the Irwindale Gateway Development project, which will:

- Perform 50-year onsite rational method calculations using Hydrocalc approved software
- Perform basin routing calculations that will demonstrates the project does not exceed the 50-Year 24-Hour 1 cfs/acre design criteria for the development, per Information Request Summary in Appendix F
- Perform basin routing calculations that will demonstrates the project does not exceed the proposed storm drain Line E Capacity for the 50-Year 24-Hour
- Create supporting Hydrologic Exhibits for the existing and proposed rational method calculations
- Provide necessary hydraulic calculations such as storm drain, catch basin inlets and other relevant calculations that demonstrates the projects' ability to convey storm water away from the proposed buildings and project site

## 2.Existing Hydrologic Characteristics

The existing onsite condition consists of graded land that sheet flows southwest and west towards two existing detention basin/pit. There are two existing basins/pits, one that is completely within the project boundary (Basin A1) and one between the project boundary and offsite area (Basin B1) Existing drainage from the project area flows to both of these existing basins. Overall, drainage flows west towards the I-605 freeway with an average slope of 3%. The onsite soil classification is split between class 008 and 015. Soil Class 008 is described as Hanford Silt Loam Soils and Class 015 is described as Tujunga Fine Sandy Loam Soils. The onsite area is mostly pervious in the existing condition. However, a visit to the project site revealed the presents of an impervious asphalt layer in several locations of the site. For that reason, the impervious ratio for the existing onsite area is 25%.

The existing hydrologic boundary is broken down into 3 drainage areas. Area A1 & A2 corresponds to the onsite area that continues to drain southwest and west and is a rough graded condition. Drainage flows to both existing basin A1 and B1. Area A4 corresponds to the offsite area on the east of the project. Area A4 also represents offsite flow that travels south and is tributary to proposed 3x3 RCB storm drain Line E (Per Post-Condition Hydrology Exhibit) ,which will be constructed by the project applicant, but transfer maintenance responsibility to the City of Irwindale /County of Los Angeles. . Please refer to the Pre-Developed Condition Hydrology Exhibit for an overview of the existing hydrologic areas of the site.

Prior to the use of the project site as a quarry and now graded land, stormwater flowed across the site from the north and east to the southwest and would leave the site at its southwest corner and discharge to culverts located beneath Live Oak Avenue. These existing storms drain facilities are no longer used and will not be used as a part of this project. Please refer to Appendix F that shows an excerpt of the Specific Plan and previous storm drain facilities.

## 3.Developed Hydrologic Characteristics

The project site will be developed into an industrial logistics center that will construct three warehouses with associated parking stalls and loading docks. Similar to the existing condition, the soil group for the project is defined by soil type 008 and 015, but for the purpose of simplicity and modeling, a soil type of 008 was used, which is the more conservative value. A rainfall depth of 1.07 and 6.8 inches was used to analyze the site hydrology for the 85$^{th}$ percentile storm and 50-year storm event, respectively.

Overall, the developed condition hydrology will follow the existing condition surface flow pattern, where drainage continues to flow south towards the proposed detention basin pit, now referred to as Basin A1. The existing pit has been altered in coordination with Sothern California Edison and is now configured into two basins, which is modeled as one basin in this report by hydraulically connecting them through storm drainpipe.

Onsite drainage areas are described through areas A1-A3 and will be pumped from the proposed detention basin for storm events exceeding the 85$^{th}$ percentile storm. The draining will be directed to Line E on Live Oak Avenue, which outfalls to the San Gabriel River, located to the east of the project. The onsite drainage can be described in 5 sub-drainage areas:

Area A1 refers to the northerly drainage area that includes offsite drainage from the existing commercial site, proposed building 3 and 2 and pavement from parking stalls and drive isles. The drainage here sheet flows to near by catch basins, into the underground storm drain system and outlets to proposed detention basin A1. Drainage for the 85$^{th}$ percentile will first drain to two drywells located on the northwest boundary, adjacent to the basin and I-605 freeway for onsite retention, for the purpose of water quality.

Area A2.1 refers to the onsite drainage located in the middle of that site. The drainage area includes drainage from building 2, building 1 and pavement from the parking isles and stalls. Storm water will first drain to nearby catch basins, into the underground storm drain and into proposed detention basin A1.

Area A2.2 refers to the onsite drainage located in the westerly side of the site. The drainage area includes drainage from building 1 and pavement from the parking isles and stalls. Storm water enters the underground storm drain system and drains to proposed detention basin A1, where storm water is treated and mitigated.

Area A3 refers to the onsite drainage that makes up the proposed detention basin. The basin is considered self-retaining and does not affect the onsite storm drain system. It does however contribute to sizing the detention basin itself and the design of the outlet storm drain/pump discharge line. The basin also manages storm water volumes for the proposed drywells for the 85$^{th}$ percentile storm.

Area A4 refers to the offsite project area located in the east side of that site. The drainage area includes runoff from the existing businesses on Live Oak Lane and the existing street width, which includes the improved sections that is part of the project. Storm water follows the existing flow path, draining south towards Live Oak Avenue, along the street gutters on Live Oak Lane. Water will drain into a proposed storm drain line that will connect to Line E on Live Oak Lane and drain towards the San Gabriel River.

Please refer to Appendix B Post-Developed Hydrology Exhibit for an overview of the described hydrology.

## 4.Methodology

As previously mentioned, the projects intent is to develop the site into a logistics center that contains 3 buildings and associated parking. To do this, hydrologic calculations for the project were performed using HydroCalc 1.0.2., where 'Peak Flow', 'Time of Concentration' and 'Runoff Volume' values for the 50-Year 24-Hour storm event were obtained. Rainfall depths values were obtained from the '2006 Hydrology Manual' for Los Angeles County Department of Public Works in Appendix B. Soil classification was obtained from the LA county GIS Soil Maps, where the soil layer line work can be found overlaid on the provided exhibits.

The onsite hydraulics was analyzed using Flow Master Connect Edition as well as spreadsheets, both of which use the standard Manning's Equation for free flow pipes. Detention storage facilities were designed and modeled in Pondpack Connect Edition Update 2. Catch Basin calculations will be performed using Flow Master Connect Edition Update 3 during final engineering.

A proposed pump system will be designed by the selected manufacturer during final engineering, which will be based on a cumulative project outflow of 12 cfs. This outflow rate was selected for the project because the cumulative outflow of the basins and Area A4 results in a combined flow rate that can be conveyed by the proposed 3x3 RCB storm drain pipe. Basin Routing Calculations are referenced in Appendix D.

The methodology hereon represents the option 1 site plan, where option 2 represents the site plan option for the construction of BESS (Battery Energy Storage System) site. The proposed option 1 study hereon effectively addresses the hydrology and hydraulics for option 2, since option 1 contains a larger impervious areas and project footprint.

## 5. SUMMARY OF HYDROLOGIC RESULTS AND RECOMMENDATIONS

### 5.Summary of Hydrologic Results and Recommendations

Review of the below summary table demonstrates that the proposed detention basins will minimize peak outflow rates from the project below the 1 cfs/acre design criteria (Appendix F) for developments for Los Angeles County, for the 50-Year Storm. The mitigated clear peak flow rate is shown in Appendix D in the basin routing analysis. Additionally, the proposed 3'x3' RCB storm drain line on Live Oak Avenue is sufficient to convey all of the tributary flows from the project area and any offsite tributary flows for the 50-year design storm, where the clear peak hydrologic calculations are found in Appendix D, while hydraulic calculations for the proposed RCB are shown in Appendix E. Furthermore, the onsite facilities have been designed to convey drainage away from the proposed buildings, while limiting flooding on the site. Please refer to the enclosed Hydrology report for detailed calculations of the project hydrology and design storm water facilities.

Table 1 Existing Hydrology Summary Table (Appendix C)

| Hydrologic Summary Table - Existing Condition | | | | | |
|---|---|---|---|---|---|
| Storm Event: | 50 Year 24 Hour | | | | |
| Sub Area ID: | A1 | A2 | A4 | Total Onsite | Total |
| Drainage Area (Ac) | 25.24 | 41.66 | 13.61 | 66.9 | 80.51 |
| % Imper | 26% | 25% | 95% | 25% | 37% |
| Clear Peak Flow Rate (cfs) | 66.54 | 152.12 | 27.96 | 218.65 | 246.61 |
| 24-Hr Clear Runoff Volume (acft): | 7.50 | 12.26 | 6.69 | 19.76 | 26.45 |

Table 2 Developed Hydrology Summary Table (Appendix C)

| Hydrologic Summary Table - Developed Condition | | | | | | | |
|---|---|---|---|---|---|---|---|
| Storm Event: | 50 Year 24 Hour | | | | | | |
| Sub Area ID: | A1 | A2.1 | A2.2 | A3 | A4 | Onsite Total | Project Total |
| Drainage Area (Ac) | 28.97 | 27.56 | 3.78 | 6.59 | 13.61 | 66.9 | 80.51 |
| % Imper | 95% | 95% | 95% | 1% | 95% | 86% | 87% |
| Design Storm | 50-yr | | | | | | |
| Clear Peak Flow Rate (cfs) | 70.10 | 58.25 | 12.67 | 24.06 | 27.96 | 165.08 | 193.04 |
| 24-Hr Clear Runoff Volume (acf | 14.24 | 13.55 | 1.86 | 1.49 | 6.69 | 31.15 | 37.84 |

## 5. SUMMARY OF HYDROLOGIC RESULTS AND RECOMMENDATIONS

Table 3 Mitigated Hydrology Summary Table(Appendix D)

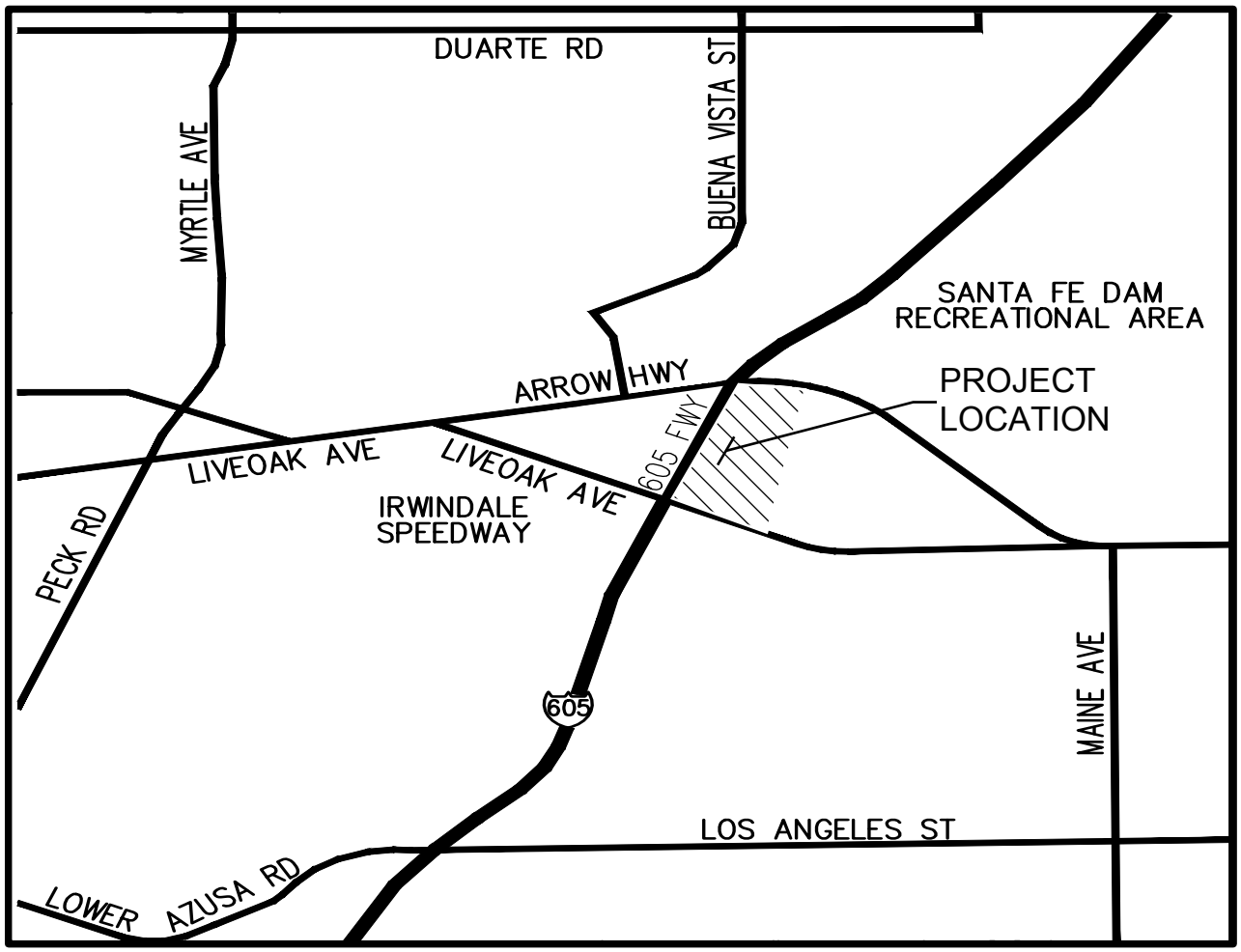
| Hydrologic Summary Table - Mitigated Condition | | | | |
|---|---|---|---|---|
| Storm Event: | 50 Year 24 Hour | | | |
| Sub Area ID: | A1-A3 | A4 | Onsite Total | Project Total |
| Drainage Area (Ac) | 66.9 | 13.61 | 66.9 | 80.51 |
| % Imper | 86% | 95% | 86% | 87% |
| Clear Peak Flow Rate (cfs) | 12.00 | 27.96 | **12.00** | **39.96** |
| 24-Hr Clear Runoff Volume (acf | 31.15 | 6.69 | 31.15 | 37.84 |
| Outflow Per Basin Routing Analysis | | | | |

Table 4 Design Criteria Comparison (Appendix D and E)

| Design Criteria | Outflow Criteria | Project Outflow |
|---|---|---|
| *3'x3' RCB on Live Oak Avenue Capacity: | 45.3 cfs | Q50=39.96CFS |
| 1 cfs/acre Outflow Criteria for LA County (66.9 cfs for project) | 66.9 | 12.00 |

* Based on the capacity of the proposed 3x3 RCB on Live Oak Avenue. See Appendix E for Hydraulic analysis

# Appendix A: Vicinity Map




VICINITY MAP

NOT TO SCALE

N

DAVID EVANS
AND ASSOCIATES INC.
41951 Remington Ave. Suite 220
Temecula, California 92590
Phone: 951.294.9300 Fax: 951.294.9301

VICINITY MAP

IRWINDALE GATEWAY
PROJECT

# Appendix B: Hydrology Maps

- Existing Hydrology Map
- Proposed Hydrology Map

Plot Date: 3/15/2023 2:24 PM
Save Date: 3/15/2023 2:22 PM
By: Michael Becerra
By: Mbec File P:\MNOI\00000001\960\INFO\0670\Reports\Hydrology Report\CAD\Existing Condition Hydrology Map.dwg

DAVID EVANS AND ASSOCIATES INC.
41951 Remington Avenue
Temecula, CA 92590
Phone: 951.294.9300

IRWANDALE GATEWAY DEVELOPMENT
DRAINAGE EXHIBITS

# PRE-DEVELOPED CONDITION HYDROLOGY EXHIBIT

CITY OF IRWINDALE CALIFORNIA

| NO. | DATE | REVISION | REVIEWED BY: | DATE: | BY | CK |
|---|---|---|---|---|---|---|
| | | | | | | |

SUBMITTAL TYPE

SUBMITTAL STATUS

CHECKED BY: MBEC
DESIGNED BY: MBEC
DRAWN BY: MBEC

DATE PREPARED: 10/4/2022

PROJECT NO.
MNOI00000001

SHEET NO.
1 OF 1

LEGEND

- PRETREATMENT (HYDRODYNAMIC SEPARATOR) SEE PROJECT LID PLAN
- DRAINGE AREA BOUNDARY(A1,A2.1,A2.2,A3,A4)
- PRORATED DRAINAGE AREA
- PROJECT BOUNDARY
- PROPOSED STORM DRAIN
- FLOW PATH
- DIRECTION OF FLOW
- SOIL CLASSIFICATION
- 100.00 249.97 FS — NODE DESIGNATION
- A11: 3.77 AC — PRORATED SUB-AREA
- D / 0.18 AC — DMA ID / HYDROLOGY STUDY AREA (ACREAGE)


DAVID EVANS AND ASSOCIATES INC.
41951 Remington Avenue
Temecula, CA 92590
Phone: 951.294.9300


IRWANDALE GATEWAY DEVELOPMENT
DRAINAGE EXHIBITS

# PROPOSED CONDITION DRAINAGE EXHIBIT

CITY OF IRWINDALE CALIFORNIA

| NO | DATE | REVIEWED BY: REVIEW BY REVISION | DATE: DATE BY | CK |
|---|---|---|---|---|

SUBMITTAL TYPE

SUBMITTAL STATUS

CHECKED BY: MBEC
DESIGNED BY: MBEC
DRAWN BY: MBEC

DATE PREPARED: 10/4/2022

PROJECT NO.
**MNOI00000001**

SHEET NO.
**1 OF 1**


Plot Date: 7/23/2024 6:35 AM
Save Date: 6/24/2024 11:24 AM
By: Qasar Rivera
By: Oscar
File: P:\MNOI\00000001\0600INFO\067\Reports\Hydrology Report\CAD\Proposed Condition Hydrology Map.dwg

# Appendix C: Hydrology Analysis

- 50 Year 24 Hour – Existing Condition Area A1
- 50 Year 24 Hour – Existing Condition Area A2
- 50 Year 24 Hour – Existing Condition Area A4
- 50 Year 24 Hour – Developed Condition Area A1
- 50 Year 24 Hour – Developed Condition Area A2.1
- 50 Year 24 Hour – Developed Condition Area A2.2
- 50 Year 24 Hour – Developed Condition Area A3
- 50 Year 24 Hour – Developed Condition Area A4

# Peak Flow Hydrologic Analysis

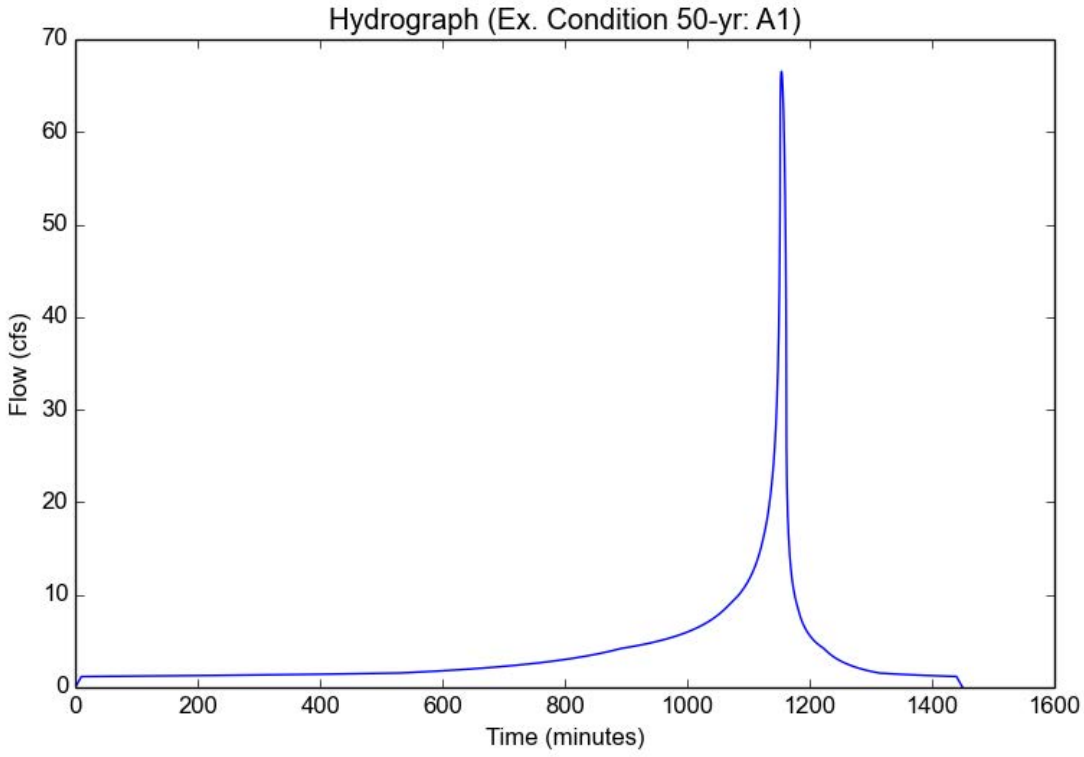
File location: //deainc.com/files/PROJECT/M/MNOI00000001/0600INFO/0670Reports/Hydrology Report/Calculations/Hydrocalc/Hydrology Analysis.pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | Ex. Condition 50-yr |
| Subarea ID | A1 |
| Area (ac) | 25.24 |
| Flow Path Length (ft) | 1165.0 |
| Flow Path Slope (vft/hft) | 0.012961373 |
| 50-yr Rainfall Depth (in) | 6.8 |
| Percent Impervious | 0.26 |
| Soil Type | 8 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 6.8 |
| Peak Intensity (in/hr) | 2.9291 |
| Undeveloped Runoff Coefficient (Cu) | 0.9 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 10.0 |
| Clear Peak Flow Rate (cfs) | 66.5365 |
| Burned Peak Flow Rate (cfs) | 66.5365 |
| 24-Hr Clear Runoff Volume (ac-ft) | 7.5045 |
| 24-Hr Clear Runoff Volume (cu-ft) | 326895.596 |



# Peak Flow Hydrologic Analysis

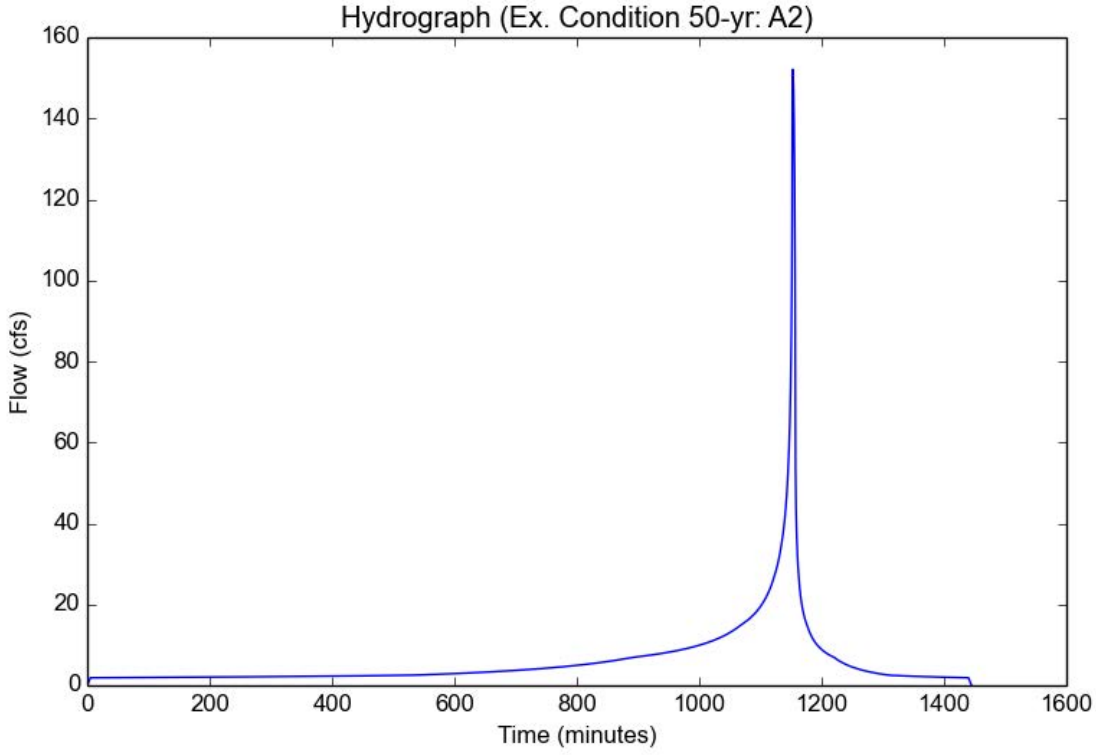
File location: //deainc.com/files/PROJECT/M/MNOI00000001/0600INFO/0670Reports/Hydrology Report/Calculations/Hydrocalc/Hydrology Analysis.pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | Ex. Condition 50-yr |
| Subarea ID | A2 |
| Area (ac) | 41.66 |
| Flow Path Length (ft) | 510.0 |
| Flow Path Slope (vft/hft) | 0.023333333 |
| 50-yr Rainfall Depth (in) | 6.8 |
| Percent Impervious | 0.25 |
| Soil Type | 8 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 6.8 |
| Peak Intensity (in/hr) | 4.0571 |
| Undeveloped Runoff Coefficient (Cu) | 0.9 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 5.0 |
| Clear Peak Flow Rate (cfs) | 152.1157 |
| Burned Peak Flow Rate (cfs) | 152.1157 |
| 24-Hr Clear Runoff Volume (ac-ft) | 12.2577 |
| 24-Hr Clear Runoff Volume (cu-ft) | 533944.3828 |



# Peak Flow Hydrologic Analysis

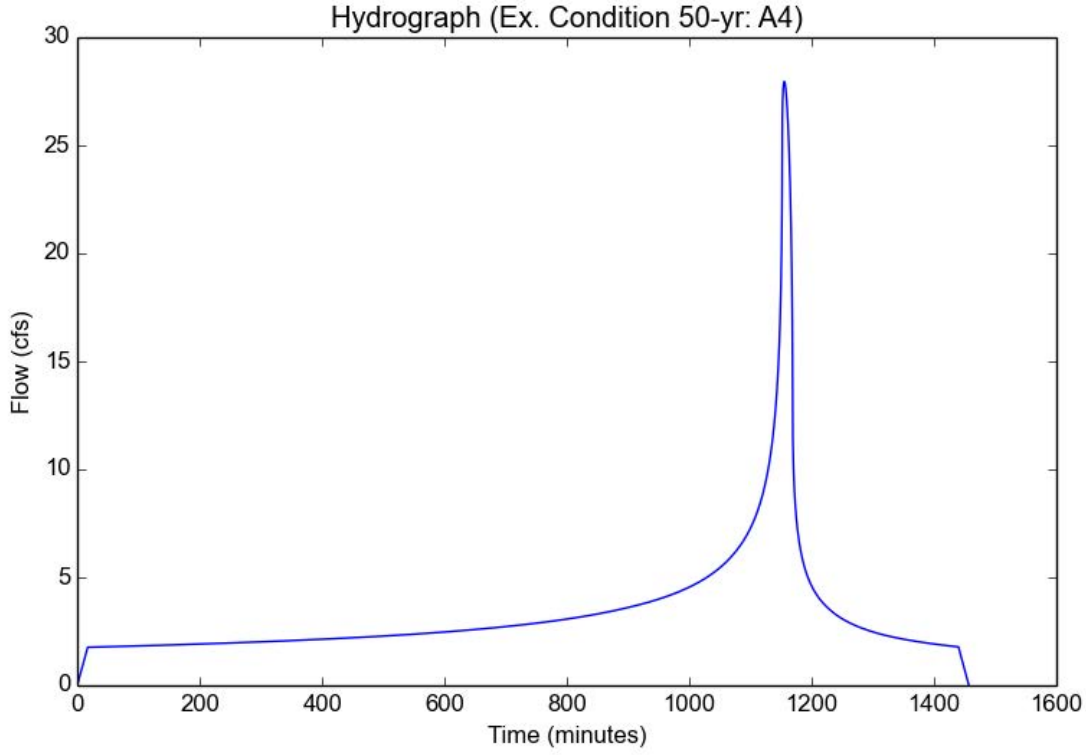
File location: //deainc.com/files/PROJECT/M/MNOI00000001/0600INFO/0670Reports/Hydrology Report/Calculations/Hydrocalc/Hydrology Analysis.pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | Ex. Condition 50-yr |
| Subarea ID | A4 |
| Area (ac) | 13.61 |
| Flow Path Length (ft) | 2260.0 |
| Flow Path Slope (vft/hft) | 0.009557522 |
| 50-yr Rainfall Depth (in) | 6.8 |
| Percent Impervious | 0.95 |
| Soil Type | 8 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 6.8 |
| Peak Intensity (in/hr) | 2.2825 |
| Undeveloped Runoff Coefficient (Cu) | 0.9 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 17.0 |
| Clear Peak Flow Rate (cfs) | 27.9587 |
| Burned Peak Flow Rate (cfs) | 27.9587 |
| 24-Hr Clear Runoff Volume (ac-ft) | 6.6924 |
| 24-Hr Clear Runoff Volume (cu-ft) | 291522.1814 |



# Peak Flow Hydrologic Analysis

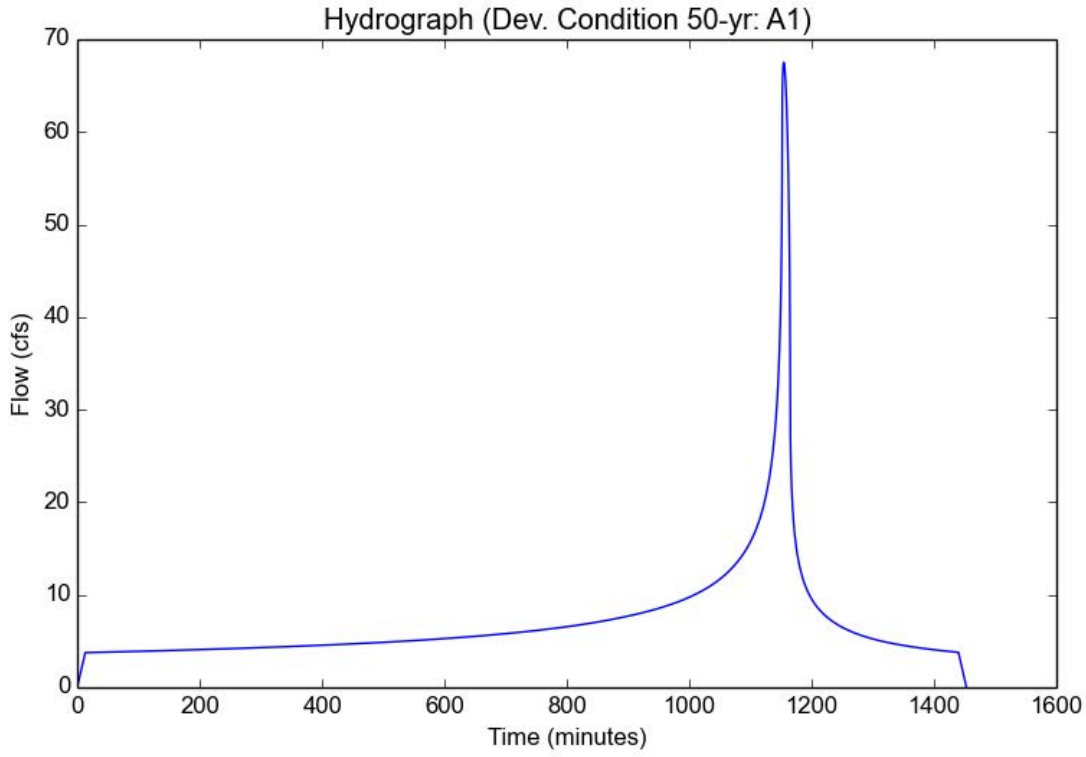
File location: //deainc.com/files/PROJECT/M/MNOI00000001/0600INFO/0670Reports/Hydrology Report/Calculations/Hydrocalc/Hydrology Analysis.pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | Dev. Condition 50-yr |
| Subarea ID | A1 |
| Area (ac) | 28.97 |
| Flow Path Length (ft) | 1985.0 |
| Flow Path Slope (vft/hft) | 0.022972292 |
| 50-yr Rainfall Depth (in) | 6.8 |
| Percent Impervious | 0.95 |
| Soil Type | 8 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 6.8 |
| Peak Intensity (in/hr) | 2.5893 |
| Undeveloped Runoff Coefficient (Cu) | 0.9 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 13.0 |
| Clear Peak Flow Rate (cfs) | 67.5096 |
| Burned Peak Flow Rate (cfs) | 67.5096 |
| 24-Hr Clear Runoff Volume (ac-ft) | 14.2449 |
| 24-Hr Clear Runoff Volume (cu-ft) | 620509.2307 |



# Peak Flow Hydrologic Analysis

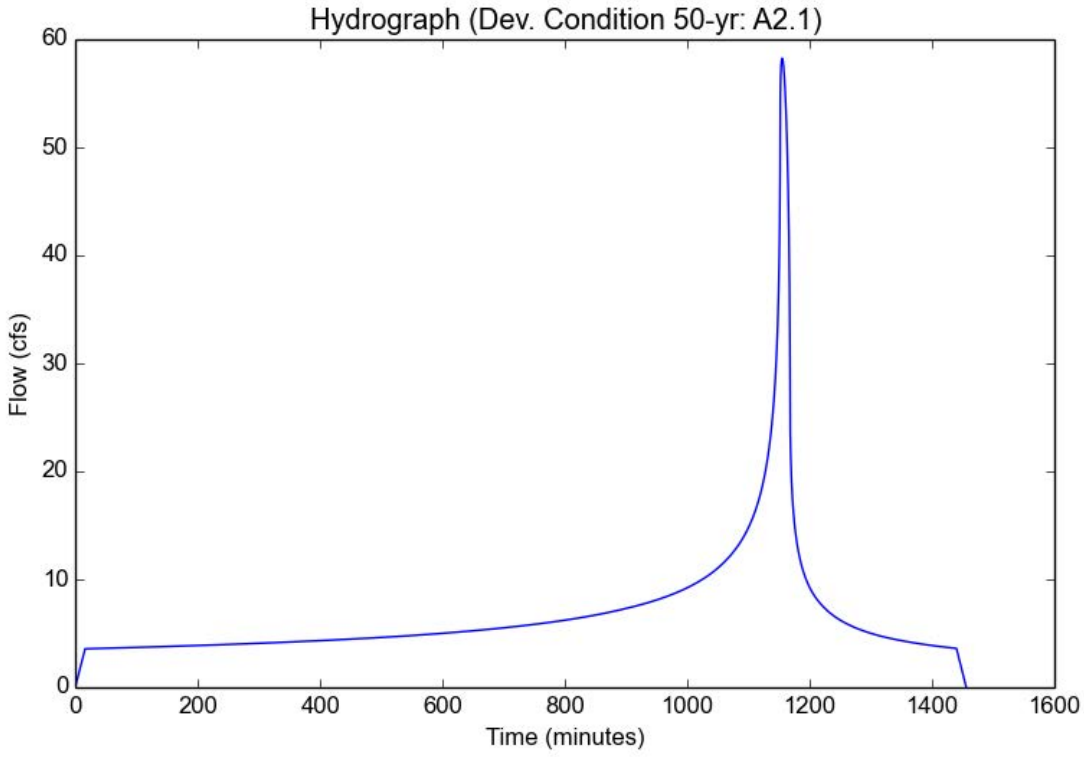
File location: //deainc.com/files/PROJECT/M/MNOI00000001/0600INFO/0670Reports/Hydrology Report/Calculations/Hydrocalc/Hydrology Analysis.pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | Dev. Condition 50-yr |
| Subarea ID | A2.1 |
| Area (ac) | 27.56 |
| Flow Path Length (ft) | 1815.0 |
| Flow Path Slope (vft/hft) | 0.006060606 |
| 50-yr Rainfall Depth (in) | 6.8 |
| Percent Impervious | 0.95 |
| Soil Type | 8 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 6.8 |
| Peak Intensity (in/hr) | 2.3485 |
| Undeveloped Runoff Coefficient (Cu) | 0.9 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 16.0 |
| Clear Peak Flow Rate (cfs) | 58.2523 |
| Burned Peak Flow Rate (cfs) | 58.2523 |
| 24-Hr Clear Runoff Volume (ac-ft) | 13.5519 |
| 24-Hr Clear Runoff Volume (cu-ft) | 590322.6778 |



# Peak Flow Hydrologic Analysis

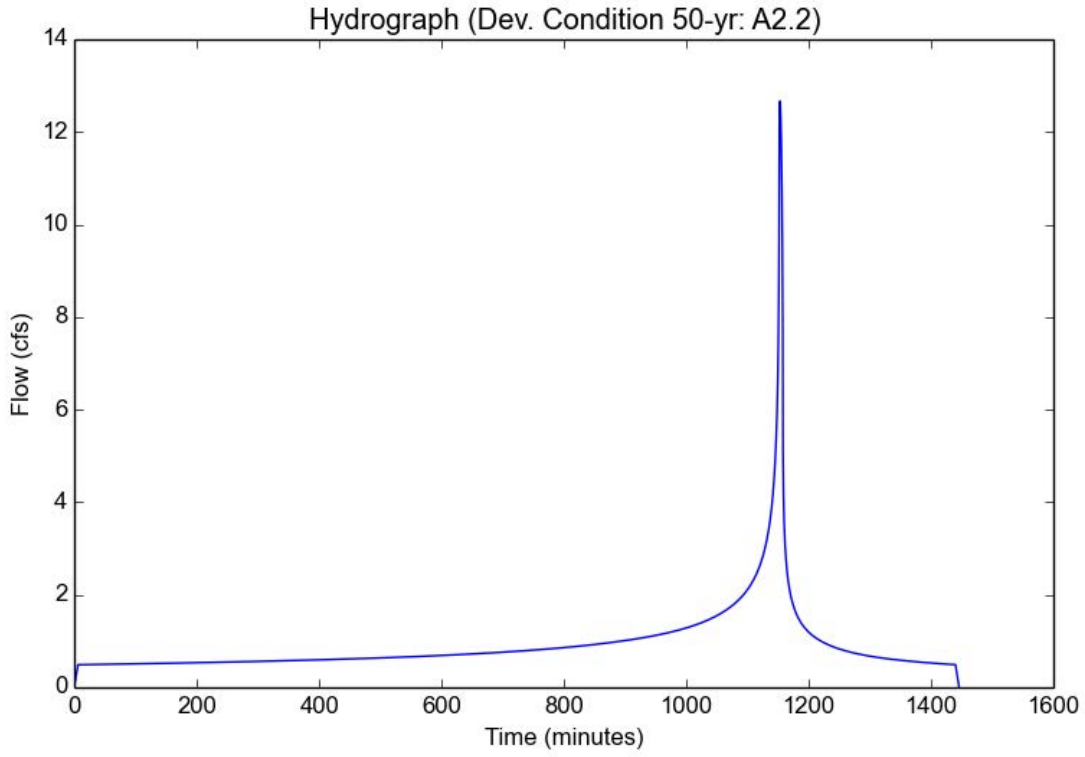
File location: //deainc.com/files/PROJECT/M/MNOI00000001/0600INFO/0670Reports/Hydrology Report/Calculations/Hydrocalc/Hydrology Analysis.pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | Dev. Condition 50-yr |
| Subarea ID | A2.2 |
| Area (ac) | 3.78 |
| Flow Path Length (ft) | 460.0 |
| Flow Path Slope (vft/hft) | 0.0108695 |
| 50-yr Rainfall Depth (in) | 6.8 |
| Percent Impervious | 0.95 |
| Soil Type | 8 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 6.8 |
| Peak Intensity (in/hr) | 3.7239 |
| Undeveloped Runoff Coefficient (Cu) | 0.9 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 6.0 |
| Clear Peak Flow Rate (cfs) | 12.6687 |
| Burned Peak Flow Rate (cfs) | 12.6687 |
| 24-Hr Clear Runoff Volume (ac-ft) | 1.8586 |
| 24-Hr Clear Runoff Volume (cu-ft) | 80959.2553 |



# Peak Flow Hydrologic Analysis

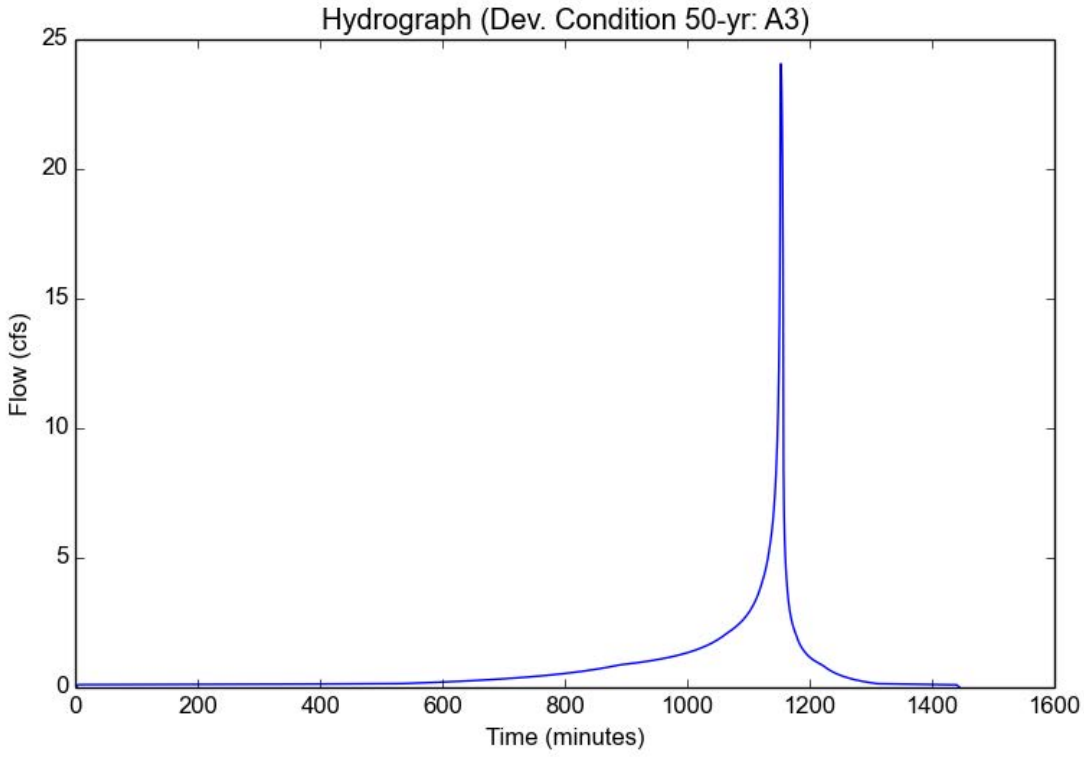
File location: //deainc.com/files/PROJECT/M/MNOI00000001/0600INFO/0670Reports/Hydrology Report/Calculations/Hydrocalc/Hydrology Analysis.pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | Dev. Condition 50-yr |
| Subarea ID | A3 |
| Area (ac) | 6.59 |
| Flow Path Length (ft) | 580.0 |
| Flow Path Slope (vft/hft) | 0.062068966 |
| 50-yr Rainfall Depth (in) | 6.8 |
| Percent Impervious | 0.01 |
| Soil Type | 8 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 6.8 |
| Peak Intensity (in/hr) | 4.0571 |
| Undeveloped Runoff Coefficient (Cu) | 0.9 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 5.0 |
| Clear Peak Flow Rate (cfs) | 24.0625 |
| Burned Peak Flow Rate (cfs) | 24.0625 |
| 24-Hr Clear Runoff Volume (ac-ft) | 1.4929 |
| 24-Hr Clear Runoff Volume (cu-ft) | 65028.9518 |



# Peak Flow Hydrologic Analysis

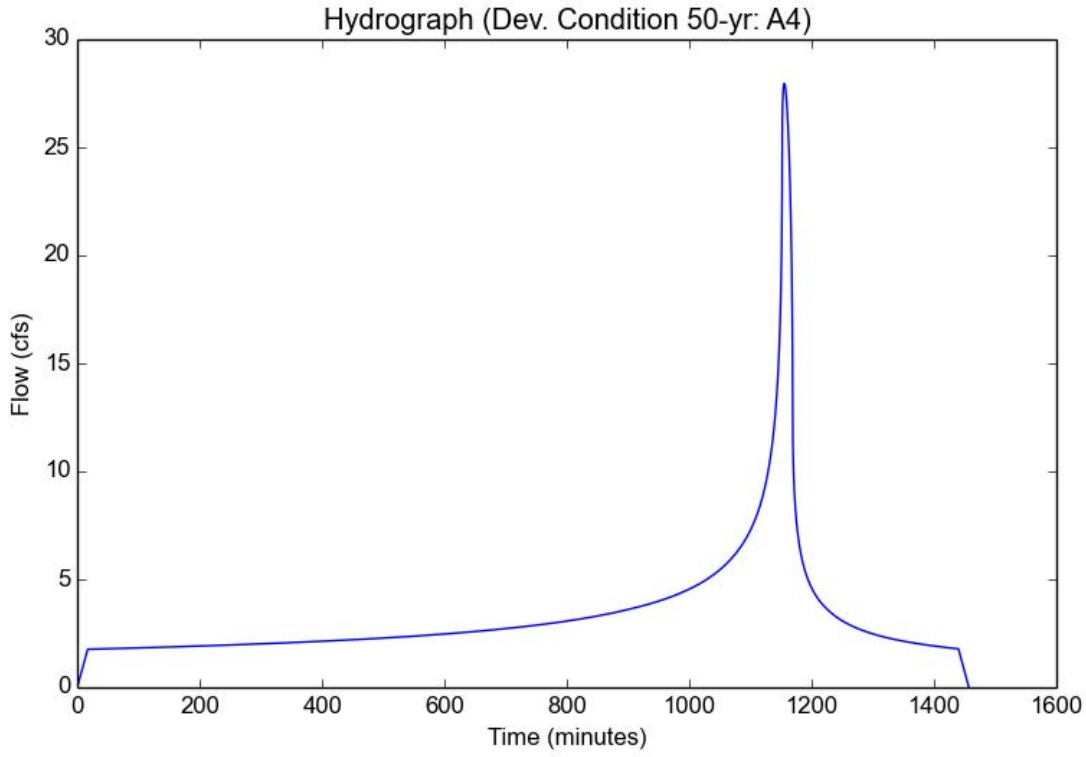
File location: //deainc.com/files/PROJECT/M/MNOI00000001/0600INFO/0670Reports/Hydrology Report/Calculations/Hydrocalc/Hydrology Analysis.pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | Dev. Condition 50-yr |
| Subarea ID | A4 |
| Area (ac) | 13.61 |
| Flow Path Length (ft) | 2260.0 |
| Flow Path Slope (vft/hft) | 0.009513274 |
| 50-yr Rainfall Depth (in) | 6.8 |
| Percent Impervious | 0.95 |
| Soil Type | 8 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 6.8 |
| Peak Intensity (in/hr) | 2.2825 |
| Undeveloped Runoff Coefficient (Cu) | 0.9 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 17.0 |
| Clear Peak Flow Rate (cfs) | 27.9587 |
| Burned Peak Flow Rate (cfs) | 27.9587 |
| 24-Hr Clear Runoff Volume (ac-ft) | 6.6924 |
| 24-Hr Clear Runoff Volume (cu-ft) | 291522.1814 |



# Appendix D: Basin Routing Analysis

- Stage-Storage Table
- Basin Routing Analysis

**Stage-Storage Table for Basin A1**

| Contour Elevation (ft) | Contour Area (Sqft) | Depth (Ft) | Incremental Volume (Cuft) | Cumulative Volume (Cuft) | Cumulative Volume (Acft) |
|---|---|---|---|---|---|
| 368.00 | 164.39 | - | N/A | - | - |
| 369.00 | 11,672.62 | 1.00 | 5,918.51 | 5,918.51 | 0.14 |
| 370.00 | 53,669.00 | 2.00 | 32,670.81 | 38,589.32 | 0.89 |
| 371.00 | 82,675.12 | 3.00 | 68,172.06 | 106,761.38 | 2.45 |
| 372.00 | 94,326.44 | 4.00 | 88,500.78 | 195,262.16 | 4.48 |
| 373.00 | 100,404.49 | 5.00 | 97,365.47 | 292,627.63 | 6.72 |
| 374.00 | 106,550.15 | 6.00 | 103,477.32 | 396,104.95 | 9.09 |
| 375.00 | 112,722.61 | 7.00 | 109,636.38 | 505,741.32 | 11.61 |
| 376.00 | 118,926.70 | 8.00 | 115,824.65 | 621,565.98 | 14.27 |
| 377.00 | 125,226.17 | 9.00 | 122,076.43 | 743,642.41 | 17.07 |
| 378.00 | 131,584.73 | 10.00 | 128,405.45 | 872,047.86 | 20.02 |
| 379.00 | 138,122.18 | 11.00 | 134,853.45 | 1,006,901.31 | 23.12 |

| Project Summary | |
|---|---|
| Title | Basin Routing Analysis for Irinwdale Gateway Project - 50-Year |
| Engineer | Michael Becerra |
| Company | David Evans and Associates Inc. |
| Date | 6/19/2024 |

Notes

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## User Notifications

| | |
|---|---|
| Message Id | -1 |
| Scenario | 50 Year - Live Oak Connection, Divert Street Flow |
| Element Type | Scenario |
| Element Id | 102 |
| Label | 50 Year - Live Oak Connection, Divert Street Flow |
| Time | (N/A) |
| Message | The output increment (3.000 min) is not an equal interval of the simulation duration (8,000.000 min). The actual simulation duration is 7,998.000 min. |
| Source | Precalculation |
| Message Id | 2 |
| Scenario | 50 Year - Live Oak Connection, Divert Street Flow |
| Element Type | Junction |
| Element Id | 152 |
| Label | J-2 |
| Time | (N/A) |
| Message | Junction node J-2 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'. |
| Source | Warning |
| Message Id | 41 |
| Scenario | 50 Year - Live Oak Connection, Divert Street Flow |
| Element Type | Conduit |
| Element Id | 154 |
| Label | CO-2 |
| Time | (N/A) |
| Message | For weighted average inflow = 14.27 $ft^3/s$, travel time is shorter than the output increment in calculation options = 1.902 min. Consider reducing output increment. |
| Source | Warning |

Subsection: Master Network Summary

## Catchments Summary

| Label | Scenario | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (min) | Peak Flow ($ft^3/s$) |
|---|---|---|---|---|---|
| A1 | 50 Year - Live Oak Connection, Divert Street Flow | 0 | 14.245 | 1,154.600 | 67.51 |
| A2.1 | 50 Year - Live Oak Connection, Divert Street Flow | 0 | 13.552 | 1,155.000 | 58.25 |
| A2.2 | 50 Year - Live Oak Connection, Divert Street Flow | 0 | 1.858 | 1,153.200 | 12.67 |
| A3 | 50 Year - Live Oak Connection, Divert Street Flow | 0 | 1.493 | 1,153.000 | 24.06 |
| A4 | 50 Year - Live Oak Connection, Divert Street Flow | 0 | 6.692 | 1,155.200 | 27.96 |

## Node Summary

| Label | Scenario | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (min) | Peak Flow ($ft^3/s$) |
|---|---|---|---|---|---|
| J-2 | 50 Year - Live Oak Connection, Divert Street Flow | 0 | 30.744 | 1,155.000 | 39.95 |
| O-4 | 50 Year - Live Oak Connection, Divert Street Flow | 0 | 30.744 | 1,158.000 | 39.75 |

## Pond Summary

| Label | Scenario | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (min) | Peak Flow ($ft^3/s$) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|---|---|---|---|---|---|---|---|
| Basin A1 (IN) | 50 Year - Live Oak Connection, Divert Street Flow | 0 | 33.170 | 1,155.000 | 159.68 | (N/A) | (N/A) |
| Basin A1 (OUT) | 50 Year - Live Oak Connection, Divert Street Flow | 0 | 24.049 | 801.000 | 12.00 | 8.28 | 15.065 |

| | |
|---|---|
| Peak Discharge | 67.51 ft³/s |
| Time to Peak | 1,154.600 min |
| Hydrograph Volume | 14.245 ac-ft |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 0.000 | 0.00 | 0.06 | 0.12 | 0.17 | 0.23 |
| 1.000 | 0.29 | 0.35 | 0.40 | 0.46 | 0.52 |
| 2.000 | 0.58 | 0.63 | 0.69 | 0.75 | 0.81 |
| 3.000 | 0.87 | 0.92 | 0.98 | 1.04 | 1.10 |
| 4.000 | 1.15 | 1.21 | 1.27 | 1.33 | 1.39 |
| 5.000 | 1.44 | 1.50 | 1.56 | 1.62 | 1.67 |
| 6.000 | 1.73 | 1.79 | 1.85 | 1.90 | 1.96 |
| 7.000 | 2.02 | 2.08 | 2.14 | 2.19 | 2.25 |
| 8.000 | 2.31 | 2.37 | 2.42 | 2.48 | 2.54 |
| 9.000 | 2.60 | 2.65 | 2.71 | 2.77 | 2.83 |
| 10.000 | 2.89 | 2.94 | 3.00 | 3.06 | 3.12 |
| 11.000 | 3.17 | 3.23 | 3.29 | 3.35 | 3.40 |
| 12.000 | 3.46 | 3.52 | 3.58 | 3.64 | 3.69 |
| 13.000 | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 |
| 14.000 | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 |
| 15.000 | 3.75 | 3.75 | 3.75 | 3.76 | 3.76 |
| 16.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 17.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 18.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 19.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 20.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 21.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 22.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 23.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 24.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 25.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 26.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 27.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 28.000 | 3.77 | 3.77 | 3.78 | 3.78 | 3.78 |
| 29.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 30.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 31.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 32.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 33.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 34.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.79 |
| 35.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 36.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 37.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 38.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 39.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 40.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 41.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 42.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 43.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 44.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 45.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 46.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 47.000 | 3.80 | 3.81 | 3.81 | 3.81 | 3.81 |
| 48.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 49.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 50.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 51.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 52.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 53.000 | 3.81 | 3.81 | 3.82 | 3.82 | 3.82 |
| 54.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 55.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 56.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 57.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 58.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 59.000 | 3.82 | 3.82 | 3.82 | 3.83 | 3.83 |
| 60.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 61.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 62.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 63.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 64.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 65.000 | 3.83 | 3.83 | 3.83 | 3.84 | 3.84 |
| 66.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| 67.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| 68.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| 69.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| 70.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| 71.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.85 |
| 72.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 73.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 74.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 75.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 76.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 77.000 | 3.85 | 3.85 | 3.85 | 3.86 | 3.86 |
| 78.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |
| 79.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |
| 80.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 81.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |
| 82.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |
| 83.000 | 3.86 | 3.86 | 3.86 | 3.87 | 3.87 |
| 84.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.87 |
| 85.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.87 |
| 86.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.87 |
| 87.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.87 |
| 88.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.87 |
| 89.000 | 3.87 | 3.87 | 3.87 | 3.88 | 3.88 |
| 90.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 91.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 92.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 93.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 94.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 95.000 | 3.88 | 3.88 | 3.89 | 3.89 | 3.89 |
| 96.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 97.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 98.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 99.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 100.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 101.000 | 3.89 | 3.90 | 3.90 | 3.90 | 3.90 |
| 102.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 103.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 104.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 105.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 106.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 107.000 | 3.91 | 3.91 | 3.91 | 3.91 | 3.91 |
| 108.000 | 3.91 | 3.91 | 3.91 | 3.91 | 3.91 |
| 109.000 | 3.91 | 3.91 | 3.91 | 3.91 | 3.91 |
| 110.000 | 3.91 | 3.91 | 3.91 | 3.91 | 3.91 |
| 111.000 | 3.91 | 3.91 | 3.91 | 3.91 | 3.91 |
| 112.000 | 3.91 | 3.91 | 3.91 | 3.92 | 3.92 |
| 113.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 114.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 115.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 116.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 117.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 118.000 | 3.92 | 3.93 | 3.93 | 3.93 | 3.93 |
| 119.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.93 |
| 120.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.93 |
| 121.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.93 |
| 122.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.93 |
| 123.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.93 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 124.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| 125.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| 126.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| 127.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| 128.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| 129.000 | 3.94 | 3.94 | 3.95 | 3.95 | 3.95 |
| 130.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 131.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 132.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 133.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 134.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 135.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 136.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 137.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 138.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 139.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 140.000 | 3.96 | 3.96 | 3.97 | 3.97 | 3.97 |
| 141.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 142.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 143.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 144.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 145.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 146.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.98 |
| 147.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.98 |
| 148.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.98 |
| 149.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.98 |
| 150.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.98 |
| 151.000 | 3.98 | 3.98 | 3.99 | 3.99 | 3.99 |
| 152.000 | 3.99 | 3.99 | 3.99 | 3.99 | 3.99 |
| 153.000 | 3.99 | 3.99 | 3.99 | 3.99 | 3.99 |
| 154.000 | 3.99 | 3.99 | 3.99 | 3.99 | 3.99 |
| 155.000 | 3.99 | 3.99 | 3.99 | 3.99 | 3.99 |
| 156.000 | 3.99 | 3.99 | 3.99 | 4.00 | 4.00 |
| 157.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 158.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 159.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 160.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 161.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 162.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.01 |
| 163.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.01 |
| 164.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.01 |
| 165.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.01 |
| 166.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.01 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 167.000 | 4.01 | 4.02 | 4.02 | 4.02 | 4.02 |
| 168.000 | 4.02 | 4.02 | 4.02 | 4.02 | 4.02 |
| 169.000 | 4.02 | 4.02 | 4.02 | 4.02 | 4.02 |
| 170.000 | 4.02 | 4.02 | 4.02 | 4.02 | 4.02 |
| 171.000 | 4.02 | 4.02 | 4.02 | 4.02 | 4.02 |
| 172.000 | 4.02 | 4.02 | 4.02 | 4.03 | 4.03 |
| 173.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 |
| 174.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 |
| 175.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 |
| 176.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 |
| 177.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.04 |
| 178.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 |
| 179.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 |
| 180.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 |
| 181.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 |
| 182.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.05 |
| 183.000 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 |
| 184.000 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 |
| 185.000 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 |
| 186.000 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 |
| 187.000 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 |
| 188.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 |
| 189.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 |
| 190.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 |
| 191.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 |
| 192.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 |
| 193.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |
| 194.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |
| 195.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |
| 196.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |
| 197.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |
| 198.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.08 |
| 199.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.08 |
| 200.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.08 |
| 201.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.08 |
| 202.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.08 |
| 203.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 204.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 205.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 206.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 207.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 208.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| 209.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 210.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| 211.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| 212.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| 213.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 |
| 214.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 |
| 215.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 |
| 216.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 |
| 217.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.12 |
| 218.000 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 |
| 219.000 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 |
| 220.000 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 |
| 221.000 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 |
| 222.000 | 4.12 | 4.12 | 4.12 | 4.13 | 4.13 |
| 223.000 | 4.13 | 4.13 | 4.13 | 4.13 | 4.13 |
| 224.000 | 4.13 | 4.13 | 4.13 | 4.13 | 4.13 |
| 225.000 | 4.13 | 4.13 | 4.13 | 4.13 | 4.13 |
| 226.000 | 4.13 | 4.13 | 4.13 | 4.13 | 4.13 |
| 227.000 | 4.13 | 4.13 | 4.14 | 4.14 | 4.14 |
| 228.000 | 4.14 | 4.14 | 4.14 | 4.14 | 4.14 |
| 229.000 | 4.14 | 4.14 | 4.14 | 4.14 | 4.14 |
| 230.000 | 4.14 | 4.14 | 4.14 | 4.14 | 4.14 |
| 231.000 | 4.14 | 4.14 | 4.14 | 4.14 | 4.14 |
| 232.000 | 4.14 | 4.15 | 4.15 | 4.15 | 4.15 |
| 233.000 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
| 234.000 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
| 235.000 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
| 236.000 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
| 237.000 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 |
| 238.000 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 |
| 239.000 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 |
| 240.000 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 |
| 241.000 | 4.16 | 4.16 | 4.16 | 4.16 | 4.17 |
| 242.000 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 |
| 243.000 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 |
| 244.000 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 |
| 245.000 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 |
| 246.000 | 4.17 | 4.17 | 4.18 | 4.18 | 4.18 |
| 247.000 | 4.18 | 4.18 | 4.18 | 4.18 | 4.18 |
| 248.000 | 4.18 | 4.18 | 4.18 | 4.18 | 4.18 |
| 249.000 | 4.18 | 4.18 | 4.18 | 4.18 | 4.18 |
| 250.000 | 4.18 | 4.18 | 4.18 | 4.18 | 4.18 |
| 251.000 | 4.19 | 4.19 | 4.19 | 4.19 | 4.19 |
| 252.000 | 4.19 | 4.19 | 4.19 | 4.19 | 4.19 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 253.000 | 4.19 | 4.19 | 4.19 | 4.19 | 4.19 |
| 254.000 | 4.19 | 4.19 | 4.19 | 4.19 | 4.19 |
| 255.000 | 4.19 | 4.19 | 4.19 | 4.20 | 4.20 |
| 256.000 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 |
| 257.000 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 |
| 258.000 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 |
| 259.000 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 |
| 260.000 | 4.20 | 4.21 | 4.21 | 4.21 | 4.21 |
| 261.000 | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 |
| 262.000 | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 |
| 263.000 | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 |
| 264.000 | 4.21 | 4.21 | 4.21 | 4.22 | 4.22 |
| 265.000 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 |
| 266.000 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 |
| 267.000 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 |
| 268.000 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 |
| 269.000 | 4.22 | 4.23 | 4.23 | 4.23 | 4.23 |
| 270.000 | 4.23 | 4.23 | 4.23 | 4.23 | 4.23 |
| 271.000 | 4.23 | 4.23 | 4.23 | 4.23 | 4.23 |
| 272.000 | 4.23 | 4.23 | 4.23 | 4.23 | 4.23 |
| 273.000 | 4.23 | 4.23 | 4.23 | 4.24 | 4.24 |
| 274.000 | 4.24 | 4.24 | 4.24 | 4.24 | 4.24 |
| 275.000 | 4.24 | 4.24 | 4.24 | 4.24 | 4.24 |
| 276.000 | 4.24 | 4.24 | 4.24 | 4.24 | 4.24 |
| 277.000 | 4.24 | 4.24 | 4.24 | 4.24 | 4.24 |
| 278.000 | 4.25 | 4.25 | 4.25 | 4.25 | 4.25 |
| 279.000 | 4.25 | 4.25 | 4.25 | 4.25 | 4.25 |
| 280.000 | 4.25 | 4.25 | 4.25 | 4.25 | 4.25 |
| 281.000 | 4.25 | 4.25 | 4.25 | 4.25 | 4.25 |
| 282.000 | 4.25 | 4.25 | 4.26 | 4.26 | 4.26 |
| 283.000 | 4.26 | 4.26 | 4.26 | 4.26 | 4.26 |
| 284.000 | 4.26 | 4.26 | 4.26 | 4.26 | 4.26 |
| 285.000 | 4.26 | 4.26 | 4.26 | 4.26 | 4.26 |
| 286.000 | 4.26 | 4.26 | 4.26 | 4.26 | 4.27 |
| 287.000 | 4.27 | 4.27 | 4.27 | 4.27 | 4.27 |
| 288.000 | 4.27 | 4.27 | 4.27 | 4.27 | 4.27 |
| 289.000 | 4.27 | 4.27 | 4.27 | 4.27 | 4.27 |
| 290.000 | 4.27 | 4.27 | 4.27 | 4.27 | 4.27 |
| 291.000 | 4.27 | 4.28 | 4.28 | 4.28 | 4.28 |
| 292.000 | 4.28 | 4.28 | 4.28 | 4.28 | 4.28 |
| 293.000 | 4.28 | 4.28 | 4.28 | 4.28 | 4.28 |
| 294.000 | 4.28 | 4.28 | 4.28 | 4.28 | 4.28 |
| 295.000 | 4.28 | 4.28 | 4.29 | 4.29 | 4.29 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 296.000 | 4.29 | 4.29 | 4.29 | 4.29 | 4.29 |
| 297.000 | 4.29 | 4.29 | 4.29 | 4.29 | 4.29 |
| 298.000 | 4.29 | 4.29 | 4.29 | 4.29 | 4.29 |
| 299.000 | 4.29 | 4.29 | 4.29 | 4.29 | 4.30 |
| 300.000 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 |
| 301.000 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 |
| 302.000 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 |
| 303.000 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 |
| 304.000 | 4.31 | 4.31 | 4.31 | 4.31 | 4.31 |
| 305.000 | 4.31 | 4.31 | 4.31 | 4.31 | 4.31 |
| 306.000 | 4.31 | 4.31 | 4.31 | 4.31 | 4.31 |
| 307.000 | 4.31 | 4.31 | 4.31 | 4.31 | 4.31 |
| 308.000 | 4.31 | 4.32 | 4.32 | 4.32 | 4.32 |
| 309.000 | 4.32 | 4.32 | 4.32 | 4.32 | 4.32 |
| 310.000 | 4.32 | 4.32 | 4.32 | 4.32 | 4.32 |
| 311.000 | 4.32 | 4.32 | 4.32 | 4.32 | 4.32 |
| 312.000 | 4.32 | 4.32 | 4.33 | 4.33 | 4.33 |
| 313.000 | 4.33 | 4.33 | 4.33 | 4.33 | 4.33 |
| 314.000 | 4.33 | 4.33 | 4.33 | 4.33 | 4.33 |
| 315.000 | 4.33 | 4.33 | 4.33 | 4.33 | 4.33 |
| 316.000 | 4.33 | 4.33 | 4.33 | 4.34 | 4.34 |
| 317.000 | 4.34 | 4.34 | 4.34 | 4.34 | 4.34 |
| 318.000 | 4.34 | 4.34 | 4.34 | 4.34 | 4.34 |
| 319.000 | 4.34 | 4.34 | 4.34 | 4.34 | 4.34 |
| 320.000 | 4.34 | 4.34 | 4.34 | 4.35 | 4.35 |
| 321.000 | 4.35 | 4.35 | 4.35 | 4.35 | 4.35 |
| 322.000 | 4.35 | 4.35 | 4.35 | 4.35 | 4.35 |
| 323.000 | 4.35 | 4.35 | 4.35 | 4.35 | 4.35 |
| 324.000 | 4.35 | 4.35 | 4.35 | 4.35 | 4.36 |
| 325.000 | 4.36 | 4.36 | 4.36 | 4.36 | 4.36 |
| 326.000 | 4.36 | 4.36 | 4.36 | 4.36 | 4.36 |
| 327.000 | 4.36 | 4.36 | 4.36 | 4.36 | 4.36 |
| 328.000 | 4.36 | 4.36 | 4.36 | 4.36 | 4.37 |
| 329.000 | 4.37 | 4.37 | 4.37 | 4.37 | 4.37 |
| 330.000 | 4.37 | 4.37 | 4.37 | 4.37 | 4.37 |
| 331.000 | 4.37 | 4.37 | 4.37 | 4.37 | 4.37 |
| 332.000 | 4.37 | 4.37 | 4.37 | 4.37 | 4.38 |
| 333.000 | 4.38 | 4.38 | 4.38 | 4.38 | 4.38 |
| 334.000 | 4.38 | 4.38 | 4.38 | 4.38 | 4.38 |
| 335.000 | 4.38 | 4.38 | 4.38 | 4.38 | 4.38 |
| 336.000 | 4.38 | 4.38 | 4.38 | 4.38 | 4.39 |
| 337.000 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 |
| 338.000 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 339.000 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 |
| 340.000 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 |
| 341.000 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| 342.000 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| 343.000 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| 344.000 | 4.40 | 4.40 | 4.40 | 4.40 | 4.41 |
| 345.000 | 4.41 | 4.41 | 4.41 | 4.41 | 4.41 |
| 346.000 | 4.41 | 4.41 | 4.41 | 4.41 | 4.41 |
| 347.000 | 4.41 | 4.41 | 4.41 | 4.41 | 4.41 |
| 348.000 | 4.41 | 4.41 | 4.41 | 4.42 | 4.42 |
| 349.000 | 4.42 | 4.42 | 4.42 | 4.42 | 4.42 |
| 350.000 | 4.42 | 4.42 | 4.42 | 4.42 | 4.42 |
| 351.000 | 4.42 | 4.42 | 4.42 | 4.42 | 4.42 |
| 352.000 | 4.42 | 4.42 | 4.42 | 4.43 | 4.43 |
| 353.000 | 4.43 | 4.43 | 4.43 | 4.43 | 4.43 |
| 354.000 | 4.43 | 4.43 | 4.43 | 4.43 | 4.43 |
| 355.000 | 4.43 | 4.43 | 4.43 | 4.43 | 4.43 |
| 356.000 | 4.43 | 4.43 | 4.44 | 4.44 | 4.44 |
| 357.000 | 4.44 | 4.44 | 4.44 | 4.44 | 4.44 |
| 358.000 | 4.44 | 4.44 | 4.44 | 4.44 | 4.44 |
| 359.000 | 4.44 | 4.44 | 4.44 | 4.44 | 4.44 |
| 360.000 | 4.44 | 4.45 | 4.45 | 4.45 | 4.45 |
| 361.000 | 4.45 | 4.45 | 4.45 | 4.45 | 4.45 |
| 362.000 | 4.45 | 4.45 | 4.45 | 4.45 | 4.45 |
| 363.000 | 4.45 | 4.45 | 4.45 | 4.45 | 4.45 |
| 364.000 | 4.46 | 4.46 | 4.46 | 4.46 | 4.46 |
| 365.000 | 4.46 | 4.46 | 4.46 | 4.46 | 4.46 |
| 366.000 | 4.46 | 4.46 | 4.46 | 4.46 | 4.46 |
| 367.000 | 4.46 | 4.46 | 4.46 | 4.46 | 4.47 |
| 368.000 | 4.47 | 4.47 | 4.47 | 4.47 | 4.47 |
| 369.000 | 4.47 | 4.47 | 4.47 | 4.47 | 4.47 |
| 370.000 | 4.47 | 4.47 | 4.47 | 4.47 | 4.47 |
| 371.000 | 4.47 | 4.47 | 4.47 | 4.48 | 4.48 |
| 372.000 | 4.48 | 4.48 | 4.48 | 4.48 | 4.48 |
| 373.000 | 4.48 | 4.48 | 4.48 | 4.48 | 4.48 |
| 374.000 | 4.48 | 4.48 | 4.48 | 4.48 | 4.48 |
| 375.000 | 4.48 | 4.48 | 4.49 | 4.49 | 4.49 |
| 376.000 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 |
| 377.000 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 |
| 378.000 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 |
| 379.000 | 4.50 | 4.50 | 4.50 | 4.50 | 4.50 |
| 380.000 | 4.50 | 4.50 | 4.50 | 4.50 | 4.50 |
| 381.000 | 4.50 | 4.50 | 4.50 | 4.50 | 4.50 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 382.000 | 4.50 | 4.50 | 4.50 | 4.51 | 4.51 |
| 383.000 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 |
| 384.000 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 |
| 385.000 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 |
| 386.000 | 4.51 | 4.51 | 4.52 | 4.52 | 4.52 |
| 387.000 | 4.52 | 4.52 | 4.52 | 4.52 | 4.52 |
| 388.000 | 4.52 | 4.52 | 4.52 | 4.52 | 4.52 |
| 389.000 | 4.52 | 4.52 | 4.52 | 4.52 | 4.52 |
| 390.000 | 4.53 | 4.53 | 4.53 | 4.53 | 4.53 |
| 391.000 | 4.53 | 4.53 | 4.53 | 4.53 | 4.53 |
| 392.000 | 4.53 | 4.53 | 4.53 | 4.53 | 4.53 |
| 393.000 | 4.53 | 4.53 | 4.53 | 4.54 | 4.54 |
| 394.000 | 4.54 | 4.54 | 4.54 | 4.54 | 4.54 |
| 395.000 | 4.54 | 4.54 | 4.54 | 4.54 | 4.54 |
| 396.000 | 4.54 | 4.54 | 4.54 | 4.54 | 4.54 |
| 397.000 | 4.54 | 4.55 | 4.55 | 4.55 | 4.55 |
| 398.000 | 4.55 | 4.55 | 4.55 | 4.55 | 4.55 |
| 399.000 | 4.55 | 4.55 | 4.55 | 4.55 | 4.55 |
| 400.000 | 4.55 | 4.55 | 4.55 | 4.56 | 4.56 |
| 401.000 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 |
| 402.000 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 |
| 403.000 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 |
| 404.000 | 4.56 | 4.57 | 4.57 | 4.57 | 4.57 |
| 405.000 | 4.57 | 4.57 | 4.57 | 4.57 | 4.57 |
| 406.000 | 4.57 | 4.57 | 4.57 | 4.57 | 4.57 |
| 407.000 | 4.57 | 4.57 | 4.57 | 4.57 | 4.58 |
| 408.000 | 4.58 | 4.58 | 4.58 | 4.58 | 4.58 |
| 409.000 | 4.58 | 4.58 | 4.58 | 4.58 | 4.58 |
| 410.000 | 4.58 | 4.58 | 4.58 | 4.58 | 4.58 |
| 411.000 | 4.58 | 4.59 | 4.59 | 4.59 | 4.59 |
| 412.000 | 4.59 | 4.59 | 4.59 | 4.59 | 4.59 |
| 413.000 | 4.59 | 4.59 | 4.59 | 4.59 | 4.59 |
| 414.000 | 4.59 | 4.59 | 4.59 | 4.60 | 4.60 |
| 415.000 | 4.60 | 4.60 | 4.60 | 4.60 | 4.60 |
| 416.000 | 4.60 | 4.60 | 4.60 | 4.60 | 4.60 |
| 417.000 | 4.60 | 4.60 | 4.60 | 4.60 | 4.60 |
| 418.000 | 4.61 | 4.61 | 4.61 | 4.61 | 4.61 |
| 419.000 | 4.61 | 4.61 | 4.61 | 4.61 | 4.61 |
| 420.000 | 4.61 | 4.61 | 4.61 | 4.61 | 4.61 |
| 421.000 | 4.61 | 4.61 | 4.61 | 4.62 | 4.62 |
| 422.000 | 4.62 | 4.62 | 4.62 | 4.62 | 4.62 |
| 423.000 | 4.62 | 4.62 | 4.62 | 4.62 | 4.62 |
| 424.000 | 4.62 | 4.62 | 4.62 | 4.62 | 4.63 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 425.000 | 4.63 | 4.63 | 4.63 | 4.63 | 4.63 |
| 426.000 | 4.63 | 4.63 | 4.63 | 4.63 | 4.63 |
| 427.000 | 4.63 | 4.63 | 4.63 | 4.63 | 4.63 |
| 428.000 | 4.63 | 4.64 | 4.64 | 4.64 | 4.64 |
| 429.000 | 4.64 | 4.64 | 4.64 | 4.64 | 4.64 |
| 430.000 | 4.64 | 4.64 | 4.64 | 4.64 | 4.64 |
| 431.000 | 4.64 | 4.64 | 4.64 | 4.65 | 4.65 |
| 432.000 | 4.65 | 4.65 | 4.65 | 4.65 | 4.65 |
| 433.000 | 4.65 | 4.65 | 4.65 | 4.65 | 4.65 |
| 434.000 | 4.65 | 4.65 | 4.65 | 4.65 | 4.65 |
| 435.000 | 4.66 | 4.66 | 4.66 | 4.66 | 4.66 |
| 436.000 | 4.66 | 4.66 | 4.66 | 4.66 | 4.66 |
| 437.000 | 4.66 | 4.66 | 4.66 | 4.66 | 4.66 |
| 438.000 | 4.66 | 4.67 | 4.67 | 4.67 | 4.67 |
| 439.000 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 |
| 440.000 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 |
| 441.000 | 4.67 | 4.67 | 4.68 | 4.68 | 4.68 |
| 442.000 | 4.68 | 4.68 | 4.68 | 4.68 | 4.68 |
| 443.000 | 4.68 | 4.68 | 4.68 | 4.68 | 4.68 |
| 444.000 | 4.68 | 4.68 | 4.68 | 4.68 | 4.69 |
| 445.000 | 4.69 | 4.69 | 4.69 | 4.69 | 4.69 |
| 446.000 | 4.69 | 4.69 | 4.69 | 4.69 | 4.69 |
| 447.000 | 4.69 | 4.69 | 4.69 | 4.69 | 4.69 |
| 448.000 | 4.70 | 4.70 | 4.70 | 4.70 | 4.70 |
| 449.000 | 4.70 | 4.70 | 4.70 | 4.70 | 4.70 |
| 450.000 | 4.70 | 4.70 | 4.70 | 4.70 | 4.70 |
| 451.000 | 4.70 | 4.71 | 4.71 | 4.71 | 4.71 |
| 452.000 | 4.71 | 4.71 | 4.71 | 4.71 | 4.71 |
| 453.000 | 4.71 | 4.71 | 4.71 | 4.71 | 4.71 |
| 454.000 | 4.71 | 4.71 | 4.72 | 4.72 | 4.72 |
| 455.000 | 4.72 | 4.72 | 4.72 | 4.72 | 4.72 |
| 456.000 | 4.72 | 4.72 | 4.72 | 4.72 | 4.72 |
| 457.000 | 4.72 | 4.72 | 4.72 | 4.73 | 4.73 |
| 458.000 | 4.73 | 4.73 | 4.73 | 4.73 | 4.73 |
| 459.000 | 4.73 | 4.73 | 4.73 | 4.73 | 4.73 |
| 460.000 | 4.73 | 4.73 | 4.73 | 4.74 | 4.74 |
| 461.000 | 4.74 | 4.74 | 4.74 | 4.74 | 4.74 |
| 462.000 | 4.74 | 4.74 | 4.74 | 4.74 | 4.74 |
| 463.000 | 4.74 | 4.74 | 4.74 | 4.74 | 4.75 |
| 464.000 | 4.75 | 4.75 | 4.75 | 4.75 | 4.75 |
| 465.000 | 4.75 | 4.75 | 4.75 | 4.75 | 4.75 |
| 466.000 | 4.75 | 4.75 | 4.75 | 4.75 | 4.75 |
| 467.000 | 4.76 | 4.76 | 4.76 | 4.76 | 4.76 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 468.000 | 4.76 | 4.76 | 4.76 | 4.76 | 4.76 |
| 469.000 | 4.76 | 4.76 | 4.76 | 4.76 | 4.76 |
| 470.000 | 4.77 | 4.77 | 4.77 | 4.77 | 4.77 |
| 471.000 | 4.77 | 4.77 | 4.77 | 4.77 | 4.77 |
| 472.000 | 4.77 | 4.77 | 4.77 | 4.77 | 4.77 |
| 473.000 | 4.78 | 4.78 | 4.78 | 4.78 | 4.78 |
| 474.000 | 4.78 | 4.78 | 4.78 | 4.78 | 4.78 |
| 475.000 | 4.78 | 4.78 | 4.78 | 4.78 | 4.78 |
| 476.000 | 4.78 | 4.79 | 4.79 | 4.79 | 4.79 |
| 477.000 | 4.79 | 4.79 | 4.79 | 4.79 | 4.79 |
| 478.000 | 4.79 | 4.79 | 4.79 | 4.79 | 4.79 |
| 479.000 | 4.79 | 4.80 | 4.80 | 4.80 | 4.80 |
| 480.000 | 4.80 | 4.80 | 4.80 | 4.80 | 4.80 |
| 481.000 | 4.80 | 4.80 | 4.80 | 4.80 | 4.80 |
| 482.000 | 4.80 | 4.81 | 4.81 | 4.81 | 4.81 |
| 483.000 | 4.81 | 4.81 | 4.81 | 4.81 | 4.81 |
| 484.000 | 4.81 | 4.81 | 4.81 | 4.81 | 4.81 |
| 485.000 | 4.81 | 4.82 | 4.82 | 4.82 | 4.82 |
| 486.000 | 4.82 | 4.82 | 4.82 | 4.82 | 4.82 |
| 487.000 | 4.82 | 4.82 | 4.82 | 4.82 | 4.82 |
| 488.000 | 4.83 | 4.83 | 4.83 | 4.83 | 4.83 |
| 489.000 | 4.83 | 4.83 | 4.83 | 4.83 | 4.83 |
| 490.000 | 4.83 | 4.83 | 4.83 | 4.83 | 4.83 |
| 491.000 | 4.84 | 4.84 | 4.84 | 4.84 | 4.84 |
| 492.000 | 4.84 | 4.84 | 4.84 | 4.84 | 4.84 |
| 493.000 | 4.84 | 4.84 | 4.84 | 4.84 | 4.84 |
| 494.000 | 4.85 | 4.85 | 4.85 | 4.85 | 4.85 |
| 495.000 | 4.85 | 4.85 | 4.85 | 4.85 | 4.85 |
| 496.000 | 4.85 | 4.85 | 4.85 | 4.85 | 4.86 |
| 497.000 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 |
| 498.000 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 |
| 499.000 | 4.86 | 4.86 | 4.86 | 4.86 | 4.87 |
| 500.000 | 4.87 | 4.87 | 4.87 | 4.87 | 4.87 |
| 501.000 | 4.87 | 4.87 | 4.87 | 4.87 | 4.87 |
| 502.000 | 4.87 | 4.87 | 4.87 | 4.88 | 4.88 |
| 503.000 | 4.88 | 4.88 | 4.88 | 4.88 | 4.88 |
| 504.000 | 4.88 | 4.88 | 4.88 | 4.88 | 4.88 |
| 505.000 | 4.88 | 4.88 | 4.89 | 4.89 | 4.89 |
| 506.000 | 4.89 | 4.89 | 4.89 | 4.89 | 4.89 |
| 507.000 | 4.89 | 4.89 | 4.89 | 4.89 | 4.89 |
| 508.000 | 4.89 | 4.89 | 4.90 | 4.90 | 4.90 |
| 509.000 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 |
| 510.000 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 511.000 | 4.90 | 4.91 | 4.91 | 4.91 | 4.91 |
| 512.000 | 4.91 | 4.91 | 4.91 | 4.91 | 4.91 |
| 513.000 | 4.91 | 4.91 | 4.91 | 4.91 | 4.91 |
| 514.000 | 4.92 | 4.92 | 4.92 | 4.92 | 4.92 |
| 515.000 | 4.92 | 4.92 | 4.92 | 4.92 | 4.92 |
| 516.000 | 4.92 | 4.92 | 4.92 | 4.92 | 4.93 |
| 517.000 | 4.93 | 4.93 | 4.93 | 4.93 | 4.93 |
| 518.000 | 4.93 | 4.93 | 4.93 | 4.93 | 4.93 |
| 519.000 | 4.93 | 4.93 | 4.94 | 4.94 | 4.94 |
| 520.000 | 4.94 | 4.94 | 4.94 | 4.94 | 4.94 |
| 521.000 | 4.94 | 4.94 | 4.94 | 4.94 | 4.94 |
| 522.000 | 4.94 | 4.95 | 4.95 | 4.95 | 4.95 |
| 523.000 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 |
| 524.000 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 |
| 525.000 | 4.96 | 4.96 | 4.96 | 4.96 | 4.96 |
| 526.000 | 4.96 | 4.96 | 4.96 | 4.96 | 4.96 |
| 527.000 | 4.96 | 4.96 | 4.96 | 4.97 | 4.97 |
| 528.000 | 4.97 | 4.97 | 4.97 | 4.97 | 4.97 |
| 529.000 | 4.97 | 4.97 | 4.97 | 4.97 | 4.97 |
| 530.000 | 4.97 | 4.97 | 4.98 | 4.98 | 4.98 |
| 531.000 | 4.98 | 4.98 | 4.98 | 4.98 | 4.98 |
| 532.000 | 4.98 | 4.98 | 4.98 | 4.98 | 4.98 |
| 533.000 | 4.99 | 4.99 | 4.99 | 4.99 | 4.99 |
| 534.000 | 4.99 | 4.99 | 4.99 | 4.99 | 4.99 |
| 535.000 | 4.99 | 4.99 | 4.99 | 5.00 | 5.00 |
| 536.000 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| 537.000 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| 538.000 | 5.00 | 5.01 | 5.01 | 5.01 | 5.01 |
| 539.000 | 5.01 | 5.01 | 5.01 | 5.01 | 5.01 |
| 540.000 | 5.01 | 5.01 | 5.01 | 5.02 | 5.02 |
| 541.000 | 5.02 | 5.02 | 5.02 | 5.02 | 5.02 |
| 542.000 | 5.02 | 5.02 | 5.02 | 5.02 | 5.02 |
| 543.000 | 5.02 | 5.03 | 5.03 | 5.03 | 5.03 |
| 544.000 | 5.03 | 5.03 | 5.03 | 5.03 | 5.03 |
| 545.000 | 5.03 | 5.03 | 5.03 | 5.04 | 5.04 |
| 546.000 | 5.04 | 5.04 | 5.04 | 5.04 | 5.04 |
| 547.000 | 5.04 | 5.04 | 5.04 | 5.04 | 5.04 |
| 548.000 | 5.04 | 5.05 | 5.05 | 5.05 | 5.05 |
| 549.000 | 5.05 | 5.05 | 5.05 | 5.05 | 5.05 |
| 550.000 | 5.05 | 5.05 | 5.05 | 5.06 | 5.06 |
| 551.000 | 5.06 | 5.06 | 5.06 | 5.06 | 5.06 |
| 552.000 | 5.06 | 5.06 | 5.06 | 5.06 | 5.06 |
| 553.000 | 5.07 | 5.07 | 5.07 | 5.07 | 5.07 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 554.000 | 5.07 | 5.07 | 5.07 | 5.07 | 5.07 |
| 555.000 | 5.07 | 5.07 | 5.07 | 5.08 | 5.08 |
| 556.000 | 5.08 | 5.08 | 5.08 | 5.08 | 5.08 |
| 557.000 | 5.08 | 5.08 | 5.08 | 5.08 | 5.08 |
| 558.000 | 5.09 | 5.09 | 5.09 | 5.09 | 5.09 |
| 559.000 | 5.09 | 5.09 | 5.09 | 5.09 | 5.09 |
| 560.000 | 5.09 | 5.09 | 5.10 | 5.10 | 5.10 |
| 561.000 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 |
| 562.000 | 5.10 | 5.10 | 5.10 | 5.10 | 5.11 |
| 563.000 | 5.11 | 5.11 | 5.11 | 5.11 | 5.11 |
| 564.000 | 5.11 | 5.11 | 5.11 | 5.11 | 5.11 |
| 565.000 | 5.11 | 5.12 | 5.12 | 5.12 | 5.12 |
| 566.000 | 5.12 | 5.12 | 5.12 | 5.12 | 5.12 |
| 567.000 | 5.12 | 5.12 | 5.12 | 5.13 | 5.13 |
| 568.000 | 5.13 | 5.13 | 5.13 | 5.13 | 5.13 |
| 569.000 | 5.13 | 5.13 | 5.13 | 5.13 | 5.14 |
| 570.000 | 5.14 | 5.14 | 5.14 | 5.14 | 5.14 |
| 571.000 | 5.14 | 5.14 | 5.14 | 5.14 | 5.14 |
| 572.000 | 5.14 | 5.15 | 5.15 | 5.15 | 5.15 |
| 573.000 | 5.15 | 5.15 | 5.15 | 5.15 | 5.15 |
| 574.000 | 5.15 | 5.15 | 5.15 | 5.16 | 5.16 |
| 575.000 | 5.16 | 5.16 | 5.16 | 5.16 | 5.16 |
| 576.000 | 5.16 | 5.16 | 5.16 | 5.16 | 5.17 |
| 577.000 | 5.17 | 5.17 | 5.17 | 5.17 | 5.17 |
| 578.000 | 5.17 | 5.17 | 5.17 | 5.17 | 5.17 |
| 579.000 | 5.17 | 5.18 | 5.18 | 5.18 | 5.18 |
| 580.000 | 5.18 | 5.18 | 5.18 | 5.18 | 5.18 |
| 581.000 | 5.18 | 5.18 | 5.19 | 5.19 | 5.19 |
| 582.000 | 5.19 | 5.19 | 5.19 | 5.19 | 5.19 |
| 583.000 | 5.19 | 5.19 | 5.19 | 5.20 | 5.20 |
| 584.000 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 |
| 585.000 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 |
| 586.000 | 5.21 | 5.21 | 5.21 | 5.21 | 5.21 |
| 587.000 | 5.21 | 5.21 | 5.21 | 5.21 | 5.21 |
| 588.000 | 5.21 | 5.22 | 5.22 | 5.22 | 5.22 |
| 589.000 | 5.22 | 5.22 | 5.22 | 5.22 | 5.22 |
| 590.000 | 5.22 | 5.22 | 5.23 | 5.23 | 5.23 |
| 591.000 | 5.23 | 5.23 | 5.23 | 5.23 | 5.23 |
| 592.000 | 5.23 | 5.23 | 5.23 | 5.24 | 5.24 |
| 593.000 | 5.24 | 5.24 | 5.24 | 5.24 | 5.24 |
| 594.000 | 5.24 | 5.24 | 5.24 | 5.24 | 5.25 |
| 595.000 | 5.25 | 5.25 | 5.25 | 5.25 | 5.25 |
| 596.000 | 5.25 | 5.25 | 5.25 | 5.25 | 5.25 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 597.000 | 5.26 | 5.26 | 5.26 | 5.26 | 5.26 |
| 598.000 | 5.26 | 5.26 | 5.26 | 5.26 | 5.26 |
| 599.000 | 5.26 | 5.27 | 5.27 | 5.27 | 5.27 |
| 600.000 | 5.27 | 5.27 | 5.27 | 5.27 | 5.27 |
| 601.000 | 5.27 | 5.27 | 5.28 | 5.28 | 5.28 |
| 602.000 | 5.28 | 5.28 | 5.28 | 5.28 | 5.28 |
| 603.000 | 5.28 | 5.28 | 5.28 | 5.29 | 5.29 |
| 604.000 | 5.29 | 5.29 | 5.29 | 5.29 | 5.29 |
| 605.000 | 5.29 | 5.29 | 5.29 | 5.30 | 5.30 |
| 606.000 | 5.30 | 5.30 | 5.30 | 5.30 | 5.30 |
| 607.000 | 5.30 | 5.30 | 5.30 | 5.30 | 5.31 |
| 608.000 | 5.31 | 5.31 | 5.31 | 5.31 | 5.31 |
| 609.000 | 5.31 | 5.31 | 5.31 | 5.31 | 5.32 |
| 610.000 | 5.32 | 5.32 | 5.32 | 5.32 | 5.32 |
| 611.000 | 5.32 | 5.32 | 5.32 | 5.32 | 5.32 |
| 612.000 | 5.33 | 5.33 | 5.33 | 5.33 | 5.33 |
| 613.000 | 5.33 | 5.33 | 5.33 | 5.33 | 5.33 |
| 614.000 | 5.34 | 5.34 | 5.34 | 5.34 | 5.34 |
| 615.000 | 5.34 | 5.34 | 5.34 | 5.34 | 5.34 |
| 616.000 | 5.34 | 5.35 | 5.35 | 5.35 | 5.35 |
| 617.000 | 5.35 | 5.35 | 5.35 | 5.35 | 5.35 |
| 618.000 | 5.35 | 5.36 | 5.36 | 5.36 | 5.36 |
| 619.000 | 5.36 | 5.36 | 5.36 | 5.36 | 5.36 |
| 620.000 | 5.36 | 5.37 | 5.37 | 5.37 | 5.37 |
| 621.000 | 5.37 | 5.37 | 5.37 | 5.37 | 5.37 |
| 622.000 | 5.37 | 5.37 | 5.38 | 5.38 | 5.38 |
| 623.000 | 5.38 | 5.38 | 5.38 | 5.38 | 5.38 |
| 624.000 | 5.38 | 5.38 | 5.39 | 5.39 | 5.39 |
| 625.000 | 5.39 | 5.39 | 5.39 | 5.39 | 5.39 |
| 626.000 | 5.39 | 5.39 | 5.40 | 5.40 | 5.40 |
| 627.000 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| 628.000 | 5.40 | 5.40 | 5.41 | 5.41 | 5.41 |
| 629.000 | 5.41 | 5.41 | 5.41 | 5.41 | 5.41 |
| 630.000 | 5.41 | 5.41 | 5.42 | 5.42 | 5.42 |
| 631.000 | 5.42 | 5.42 | 5.42 | 5.42 | 5.42 |
| 632.000 | 5.42 | 5.42 | 5.43 | 5.43 | 5.43 |
| 633.000 | 5.43 | 5.43 | 5.43 | 5.43 | 5.43 |
| 634.000 | 5.43 | 5.43 | 5.44 | 5.44 | 5.44 |
| 635.000 | 5.44 | 5.44 | 5.44 | 5.44 | 5.44 |
| 636.000 | 5.44 | 5.44 | 5.45 | 5.45 | 5.45 |
| 637.000 | 5.45 | 5.45 | 5.45 | 5.45 | 5.45 |
| 638.000 | 5.45 | 5.46 | 5.46 | 5.46 | 5.46 |
| 639.000 | 5.46 | 5.46 | 5.46 | 5.46 | 5.46 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 640.000 | 5.46 | 5.47 | 5.47 | 5.47 | 5.47 |
| 641.000 | 5.47 | 5.47 | 5.47 | 5.47 | 5.47 |
| 642.000 | 5.47 | 5.48 | 5.48 | 5.48 | 5.48 |
| 643.000 | 5.48 | 5.48 | 5.48 | 5.48 | 5.48 |
| 644.000 | 5.49 | 5.49 | 5.49 | 5.49 | 5.49 |
| 645.000 | 5.49 | 5.49 | 5.49 | 5.49 | 5.49 |
| 646.000 | 5.50 | 5.50 | 5.50 | 5.50 | 5.50 |
| 647.000 | 5.50 | 5.50 | 5.50 | 5.50 | 5.51 |
| 648.000 | 5.51 | 5.51 | 5.51 | 5.51 | 5.51 |
| 649.000 | 5.51 | 5.51 | 5.51 | 5.51 | 5.52 |
| 650.000 | 5.52 | 5.52 | 5.52 | 5.52 | 5.52 |
| 651.000 | 5.52 | 5.52 | 5.52 | 5.53 | 5.53 |
| 652.000 | 5.53 | 5.53 | 5.53 | 5.53 | 5.53 |
| 653.000 | 5.53 | 5.53 | 5.54 | 5.54 | 5.54 |
| 654.000 | 5.54 | 5.54 | 5.54 | 5.54 | 5.54 |
| 655.000 | 5.54 | 5.54 | 5.55 | 5.55 | 5.55 |
| 656.000 | 5.55 | 5.55 | 5.55 | 5.55 | 5.55 |
| 657.000 | 5.55 | 5.56 | 5.56 | 5.56 | 5.56 |
| 658.000 | 5.56 | 5.56 | 5.56 | 5.56 | 5.56 |
| 659.000 | 5.57 | 5.57 | 5.57 | 5.57 | 5.57 |
| 660.000 | 5.57 | 5.57 | 5.57 | 5.57 | 5.58 |
| 661.000 | 5.58 | 5.58 | 5.58 | 5.58 | 5.58 |
| 662.000 | 5.58 | 5.58 | 5.58 | 5.59 | 5.59 |
| 663.000 | 5.59 | 5.59 | 5.59 | 5.59 | 5.59 |
| 664.000 | 5.59 | 5.59 | 5.60 | 5.60 | 5.60 |
| 665.000 | 5.60 | 5.60 | 5.60 | 5.60 | 5.60 |
| 666.000 | 5.60 | 5.61 | 5.61 | 5.61 | 5.61 |
| 667.000 | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 |
| 668.000 | 5.62 | 5.62 | 5.62 | 5.62 | 5.62 |
| 669.000 | 5.62 | 5.62 | 5.62 | 5.62 | 5.63 |
| 670.000 | 5.63 | 5.63 | 5.63 | 5.63 | 5.63 |
| 671.000 | 5.63 | 5.63 | 5.63 | 5.64 | 5.64 |
| 672.000 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 |
| 673.000 | 5.64 | 5.64 | 5.65 | 5.65 | 5.65 |
| 674.000 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 |
| 675.000 | 5.65 | 5.66 | 5.66 | 5.66 | 5.66 |
| 676.000 | 5.66 | 5.66 | 5.66 | 5.66 | 5.67 |
| 677.000 | 5.67 | 5.67 | 5.67 | 5.67 | 5.67 |
| 678.000 | 5.67 | 5.67 | 5.67 | 5.68 | 5.68 |
| 679.000 | 5.68 | 5.68 | 5.68 | 5.68 | 5.68 |
| 680.000 | 5.68 | 5.69 | 5.69 | 5.69 | 5.69 |
| 681.000 | 5.69 | 5.69 | 5.69 | 5.69 | 5.69 |
| 682.000 | 5.70 | 5.70 | 5.70 | 5.70 | 5.70 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 683.000 | 5.70 | 5.70 | 5.70 | 5.71 | 5.71 |
| 684.000 | 5.71 | 5.71 | 5.71 | 5.71 | 5.71 |
| 685.000 | 5.71 | 5.71 | 5.72 | 5.72 | 5.72 |
| 686.000 | 5.72 | 5.72 | 5.72 | 5.72 | 5.72 |
| 687.000 | 5.73 | 5.73 | 5.73 | 5.73 | 5.73 |
| 688.000 | 5.73 | 5.73 | 5.73 | 5.73 | 5.74 |
| 689.000 | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 |
| 690.000 | 5.74 | 5.74 | 5.75 | 5.75 | 5.75 |
| 691.000 | 5.75 | 5.75 | 5.75 | 5.75 | 5.75 |
| 692.000 | 5.76 | 5.76 | 5.76 | 5.76 | 5.76 |
| 693.000 | 5.76 | 5.76 | 5.76 | 5.76 | 5.77 |
| 694.000 | 5.77 | 5.77 | 5.77 | 5.77 | 5.77 |
| 695.000 | 5.77 | 5.77 | 5.78 | 5.78 | 5.78 |
| 696.000 | 5.78 | 5.78 | 5.78 | 5.78 | 5.78 |
| 697.000 | 5.79 | 5.79 | 5.79 | 5.79 | 5.79 |
| 698.000 | 5.79 | 5.79 | 5.79 | 5.80 | 5.80 |
| 699.000 | 5.80 | 5.80 | 5.80 | 5.80 | 5.80 |
| 700.000 | 5.80 | 5.81 | 5.81 | 5.81 | 5.81 |
| 701.000 | 5.81 | 5.81 | 5.81 | 5.81 | 5.82 |
| 702.000 | 5.82 | 5.82 | 5.82 | 5.82 | 5.82 |
| 703.000 | 5.82 | 5.82 | 5.83 | 5.83 | 5.83 |
| 704.000 | 5.83 | 5.83 | 5.83 | 5.83 | 5.83 |
| 705.000 | 5.84 | 5.84 | 5.84 | 5.84 | 5.84 |
| 706.000 | 5.84 | 5.84 | 5.84 | 5.85 | 5.85 |
| 707.000 | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 |
| 708.000 | 5.85 | 5.86 | 5.86 | 5.86 | 5.86 |
| 709.000 | 5.86 | 5.86 | 5.86 | 5.86 | 5.87 |
| 710.000 | 5.87 | 5.87 | 5.87 | 5.87 | 5.87 |
| 711.000 | 5.87 | 5.88 | 5.88 | 5.88 | 5.88 |
| 712.000 | 5.88 | 5.88 | 5.88 | 5.88 | 5.89 |
| 713.000 | 5.89 | 5.89 | 5.89 | 5.89 | 5.89 |
| 714.000 | 5.89 | 5.89 | 5.90 | 5.90 | 5.90 |
| 715.000 | 5.90 | 5.90 | 5.90 | 5.90 | 5.91 |
| 716.000 | 5.91 | 5.91 | 5.91 | 5.91 | 5.91 |
| 717.000 | 5.91 | 5.91 | 5.92 | 5.92 | 5.92 |
| 718.000 | 5.92 | 5.92 | 5.92 | 5.92 | 5.92 |
| 719.000 | 5.93 | 5.93 | 5.93 | 5.93 | 5.93 |
| 720.000 | 5.93 | 5.93 | 5.94 | 5.94 | 5.94 |
| 721.000 | 5.94 | 5.94 | 5.94 | 5.94 | 5.94 |
| 722.000 | 5.95 | 5.95 | 5.95 | 5.95 | 5.95 |
| 723.000 | 5.95 | 5.95 | 5.96 | 5.96 | 5.96 |
| 724.000 | 5.96 | 5.96 | 5.96 | 5.96 | 5.97 |
| 725.000 | 5.97 | 5.97 | 5.97 | 5.97 | 5.97 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 726.000 | 5.97 | 5.97 | 5.98 | 5.98 | 5.98 |
| 727.000 | 5.98 | 5.98 | 5.98 | 5.98 | 5.99 |
| 728.000 | 5.99 | 5.99 | 5.99 | 5.99 | 5.99 |
| 729.000 | 5.99 | 6.00 | 6.00 | 6.00 | 6.00 |
| 730.000 | 6.00 | 6.00 | 6.00 | 6.00 | 6.01 |
| 731.000 | 6.01 | 6.01 | 6.01 | 6.01 | 6.01 |
| 732.000 | 6.01 | 6.02 | 6.02 | 6.02 | 6.02 |
| 733.000 | 6.02 | 6.02 | 6.02 | 6.03 | 6.03 |
| 734.000 | 6.03 | 6.03 | 6.03 | 6.03 | 6.03 |
| 735.000 | 6.04 | 6.04 | 6.04 | 6.04 | 6.04 |
| 736.000 | 6.04 | 6.04 | 6.05 | 6.05 | 6.05 |
| 737.000 | 6.05 | 6.05 | 6.05 | 6.05 | 6.06 |
| 738.000 | 6.06 | 6.06 | 6.06 | 6.06 | 6.06 |
| 739.000 | 6.06 | 6.07 | 6.07 | 6.07 | 6.07 |
| 740.000 | 6.07 | 6.07 | 6.07 | 6.08 | 6.08 |
| 741.000 | 6.08 | 6.08 | 6.08 | 6.08 | 6.08 |
| 742.000 | 6.09 | 6.09 | 6.09 | 6.09 | 6.09 |
| 743.000 | 6.09 | 6.09 | 6.10 | 6.10 | 6.10 |
| 744.000 | 6.10 | 6.10 | 6.10 | 6.10 | 6.11 |
| 745.000 | 6.11 | 6.11 | 6.11 | 6.11 | 6.11 |
| 746.000 | 6.11 | 6.12 | 6.12 | 6.12 | 6.12 |
| 747.000 | 6.12 | 6.12 | 6.12 | 6.13 | 6.13 |
| 748.000 | 6.13 | 6.13 | 6.13 | 6.13 | 6.13 |
| 749.000 | 6.14 | 6.14 | 6.14 | 6.14 | 6.14 |
| 750.000 | 6.14 | 6.14 | 6.15 | 6.15 | 6.15 |
| 751.000 | 6.15 | 6.15 | 6.15 | 6.16 | 6.16 |
| 752.000 | 6.16 | 6.16 | 6.16 | 6.16 | 6.16 |
| 753.000 | 6.17 | 6.17 | 6.17 | 6.17 | 6.17 |
| 754.000 | 6.17 | 6.17 | 6.18 | 6.18 | 6.18 |
| 755.000 | 6.18 | 6.18 | 6.18 | 6.19 | 6.19 |
| 756.000 | 6.19 | 6.19 | 6.19 | 6.19 | 6.19 |
| 757.000 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 |
| 758.000 | 6.20 | 6.21 | 6.21 | 6.21 | 6.21 |
| 759.000 | 6.21 | 6.21 | 6.21 | 6.22 | 6.22 |
| 760.000 | 6.22 | 6.22 | 6.22 | 6.22 | 6.23 |
| 761.000 | 6.23 | 6.23 | 6.23 | 6.23 | 6.23 |
| 762.000 | 6.23 | 6.24 | 6.24 | 6.24 | 6.24 |
| 763.000 | 6.24 | 6.24 | 6.25 | 6.25 | 6.25 |
| 764.000 | 6.25 | 6.25 | 6.25 | 6.25 | 6.26 |
| 765.000 | 6.26 | 6.26 | 6.26 | 6.26 | 6.26 |
| 766.000 | 6.27 | 6.27 | 6.27 | 6.27 | 6.27 |
| 767.000 | 6.27 | 6.27 | 6.28 | 6.28 | 6.28 |
| 768.000 | 6.28 | 6.28 | 6.28 | 6.29 | 6.29 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 769.000 | 6.29 | 6.29 | 6.29 | 6.29 | 6.30 |
| 770.000 | 6.30 | 6.30 | 6.30 | 6.30 | 6.30 |
| 771.000 | 6.31 | 6.31 | 6.31 | 6.31 | 6.31 |
| 772.000 | 6.31 | 6.31 | 6.32 | 6.32 | 6.32 |
| 773.000 | 6.32 | 6.32 | 6.32 | 6.33 | 6.33 |
| 774.000 | 6.33 | 6.33 | 6.33 | 6.33 | 6.34 |
| 775.000 | 6.34 | 6.34 | 6.34 | 6.34 | 6.34 |
| 776.000 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 |
| 777.000 | 6.35 | 6.36 | 6.36 | 6.36 | 6.36 |
| 778.000 | 6.36 | 6.36 | 6.37 | 6.37 | 6.37 |
| 779.000 | 6.37 | 6.37 | 6.37 | 6.38 | 6.38 |
| 780.000 | 6.38 | 6.38 | 6.38 | 6.38 | 6.39 |
| 781.000 | 6.39 | 6.39 | 6.39 | 6.39 | 6.39 |
| 782.000 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| 783.000 | 6.40 | 6.41 | 6.41 | 6.41 | 6.41 |
| 784.000 | 6.41 | 6.41 | 6.42 | 6.42 | 6.42 |
| 785.000 | 6.42 | 6.42 | 6.42 | 6.43 | 6.43 |
| 786.000 | 6.43 | 6.43 | 6.43 | 6.43 | 6.44 |
| 787.000 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 |
| 788.000 | 6.45 | 6.45 | 6.45 | 6.45 | 6.45 |
| 789.000 | 6.45 | 6.46 | 6.46 | 6.46 | 6.46 |
| 790.000 | 6.46 | 6.47 | 6.47 | 6.47 | 6.47 |
| 791.000 | 6.47 | 6.47 | 6.48 | 6.48 | 6.48 |
| 792.000 | 6.48 | 6.48 | 6.48 | 6.49 | 6.49 |
| 793.000 | 6.49 | 6.49 | 6.49 | 6.49 | 6.50 |
| 794.000 | 6.50 | 6.50 | 6.50 | 6.50 | 6.51 |
| 795.000 | 6.51 | 6.51 | 6.51 | 6.51 | 6.51 |
| 796.000 | 6.52 | 6.52 | 6.52 | 6.52 | 6.52 |
| 797.000 | 6.52 | 6.53 | 6.53 | 6.53 | 6.53 |
| 798.000 | 6.53 | 6.54 | 6.54 | 6.54 | 6.54 |
| 799.000 | 6.54 | 6.54 | 6.55 | 6.55 | 6.55 |
| 800.000 | 6.55 | 6.55 | 6.56 | 6.56 | 6.56 |
| 801.000 | 6.56 | 6.56 | 6.56 | 6.57 | 6.57 |
| 802.000 | 6.57 | 6.57 | 6.57 | 6.58 | 6.58 |
| 803.000 | 6.58 | 6.58 | 6.58 | 6.58 | 6.59 |
| 804.000 | 6.59 | 6.59 | 6.59 | 6.59 | 6.60 |
| 805.000 | 6.60 | 6.60 | 6.60 | 6.60 | 6.60 |
| 806.000 | 6.61 | 6.61 | 6.61 | 6.61 | 6.61 |
| 807.000 | 6.62 | 6.62 | 6.62 | 6.62 | 6.62 |
| 808.000 | 6.63 | 6.63 | 6.63 | 6.63 | 6.63 |
| 809.000 | 6.63 | 6.64 | 6.64 | 6.64 | 6.64 |
| 810.000 | 6.64 | 6.65 | 6.65 | 6.65 | 6.65 |
| 811.000 | 6.65 | 6.66 | 6.66 | 6.66 | 6.66 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 812.000 | 6.66 | 6.66 | 6.67 | 6.67 | 6.67 |
| 813.000 | 6.67 | 6.67 | 6.68 | 6.68 | 6.68 |
| 814.000 | 6.68 | 6.68 | 6.69 | 6.69 | 6.69 |
| 815.000 | 6.69 | 6.69 | 6.70 | 6.70 | 6.70 |
| 816.000 | 6.70 | 6.70 | 6.71 | 6.71 | 6.71 |
| 817.000 | 6.71 | 6.71 | 6.71 | 6.72 | 6.72 |
| 818.000 | 6.72 | 6.72 | 6.72 | 6.73 | 6.73 |
| 819.000 | 6.73 | 6.73 | 6.73 | 6.74 | 6.74 |
| 820.000 | 6.74 | 6.74 | 6.74 | 6.75 | 6.75 |
| 821.000 | 6.75 | 6.75 | 6.75 | 6.76 | 6.76 |
| 822.000 | 6.76 | 6.76 | 6.76 | 6.77 | 6.77 |
| 823.000 | 6.77 | 6.77 | 6.77 | 6.78 | 6.78 |
| 824.000 | 6.78 | 6.78 | 6.78 | 6.79 | 6.79 |
| 825.000 | 6.79 | 6.79 | 6.79 | 6.80 | 6.80 |
| 826.000 | 6.80 | 6.80 | 6.80 | 6.81 | 6.81 |
| 827.000 | 6.81 | 6.81 | 6.81 | 6.82 | 6.82 |
| 828.000 | 6.82 | 6.82 | 6.82 | 6.83 | 6.83 |
| 829.000 | 6.83 | 6.83 | 6.83 | 6.84 | 6.84 |
| 830.000 | 6.84 | 6.84 | 6.85 | 6.85 | 6.85 |
| 831.000 | 6.85 | 6.85 | 6.86 | 6.86 | 6.86 |
| 832.000 | 6.86 | 6.86 | 6.87 | 6.87 | 6.87 |
| 833.000 | 6.87 | 6.87 | 6.88 | 6.88 | 6.88 |
| 834.000 | 6.88 | 6.88 | 6.89 | 6.89 | 6.89 |
| 835.000 | 6.89 | 6.90 | 6.90 | 6.90 | 6.90 |
| 836.000 | 6.90 | 6.91 | 6.91 | 6.91 | 6.91 |
| 837.000 | 6.91 | 6.92 | 6.92 | 6.92 | 6.92 |
| 838.000 | 6.92 | 6.93 | 6.93 | 6.93 | 6.93 |
| 839.000 | 6.94 | 6.94 | 6.94 | 6.94 | 6.94 |
| 840.000 | 6.95 | 6.95 | 6.95 | 6.95 | 6.96 |
| 841.000 | 6.96 | 6.96 | 6.96 | 6.96 | 6.97 |
| 842.000 | 6.97 | 6.97 | 6.97 | 6.97 | 6.98 |
| 843.000 | 6.98 | 6.98 | 6.98 | 6.99 | 6.99 |
| 844.000 | 6.99 | 6.99 | 6.99 | 7.00 | 7.00 |
| 845.000 | 7.00 | 7.00 | 7.01 | 7.01 | 7.01 |
| 846.000 | 7.01 | 7.01 | 7.02 | 7.02 | 7.02 |
| 847.000 | 7.02 | 7.03 | 7.03 | 7.03 | 7.03 |
| 848.000 | 7.03 | 7.04 | 7.04 | 7.04 | 7.04 |
| 849.000 | 7.05 | 7.05 | 7.05 | 7.05 | 7.05 |
| 850.000 | 7.06 | 7.06 | 7.06 | 7.06 | 7.07 |
| 851.000 | 7.07 | 7.07 | 7.07 | 7.08 | 7.08 |
| 852.000 | 7.08 | 7.08 | 7.08 | 7.09 | 7.09 |
| 853.000 | 7.09 | 7.09 | 7.10 | 7.10 | 7.10 |
| 854.000 | 7.10 | 7.11 | 7.11 | 7.11 | 7.11 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 855.000 | 7.11 | 7.12 | 7.12 | 7.12 | 7.12 |
| 856.000 | 7.13 | 7.13 | 7.13 | 7.13 | 7.14 |
| 857.000 | 7.14 | 7.14 | 7.14 | 7.14 | 7.15 |
| 858.000 | 7.15 | 7.15 | 7.15 | 7.16 | 7.16 |
| 859.000 | 7.16 | 7.16 | 7.17 | 7.17 | 7.17 |
| 860.000 | 7.17 | 7.18 | 7.18 | 7.18 | 7.18 |
| 861.000 | 7.19 | 7.19 | 7.19 | 7.19 | 7.19 |
| 862.000 | 7.20 | 7.20 | 7.20 | 7.20 | 7.21 |
| 863.000 | 7.21 | 7.21 | 7.21 | 7.22 | 7.22 |
| 864.000 | 7.22 | 7.22 | 7.23 | 7.23 | 7.23 |
| 865.000 | 7.23 | 7.24 | 7.24 | 7.24 | 7.24 |
| 866.000 | 7.25 | 7.25 | 7.25 | 7.25 | 7.26 |
| 867.000 | 7.26 | 7.26 | 7.26 | 7.27 | 7.27 |
| 868.000 | 7.27 | 7.27 | 7.28 | 7.28 | 7.28 |
| 869.000 | 7.28 | 7.29 | 7.29 | 7.29 | 7.29 |
| 870.000 | 7.30 | 7.30 | 7.30 | 7.30 | 7.31 |
| 871.000 | 7.31 | 7.31 | 7.31 | 7.32 | 7.32 |
| 872.000 | 7.32 | 7.32 | 7.33 | 7.33 | 7.33 |
| 873.000 | 7.33 | 7.34 | 7.34 | 7.34 | 7.34 |
| 874.000 | 7.35 | 7.35 | 7.35 | 7.35 | 7.36 |
| 875.000 | 7.36 | 7.36 | 7.36 | 7.37 | 7.37 |
| 876.000 | 7.37 | 7.37 | 7.38 | 7.38 | 7.38 |
| 877.000 | 7.38 | 7.39 | 7.39 | 7.39 | 7.40 |
| 878.000 | 7.40 | 7.40 | 7.40 | 7.41 | 7.41 |
| 879.000 | 7.41 | 7.41 | 7.42 | 7.42 | 7.42 |
| 880.000 | 7.42 | 7.43 | 7.43 | 7.43 | 7.43 |
| 881.000 | 7.44 | 7.44 | 7.44 | 7.45 | 7.45 |
| 882.000 | 7.45 | 7.45 | 7.46 | 7.46 | 7.46 |
| 883.000 | 7.46 | 7.47 | 7.47 | 7.47 | 7.48 |
| 884.000 | 7.48 | 7.48 | 7.48 | 7.49 | 7.49 |
| 885.000 | 7.49 | 7.49 | 7.50 | 7.50 | 7.50 |
| 886.000 | 7.51 | 7.51 | 7.51 | 7.51 | 7.52 |
| 887.000 | 7.52 | 7.52 | 7.52 | 7.53 | 7.53 |
| 888.000 | 7.53 | 7.54 | 7.54 | 7.54 | 7.54 |
| 889.000 | 7.55 | 7.55 | 7.55 | 7.55 | 7.56 |
| 890.000 | 7.56 | 7.56 | 7.57 | 7.57 | 7.57 |
| 891.000 | 7.57 | 7.58 | 7.58 | 7.58 | 7.59 |
| 892.000 | 7.59 | 7.59 | 7.59 | 7.60 | 7.60 |
| 893.000 | 7.60 | 7.61 | 7.61 | 7.61 | 7.61 |
| 894.000 | 7.62 | 7.62 | 7.62 | 7.63 | 7.63 |
| 895.000 | 7.63 | 7.63 | 7.64 | 7.64 | 7.64 |
| 896.000 | 7.64 | 7.65 | 7.65 | 7.65 | 7.66 |
| 897.000 | 7.66 | 7.66 | 7.66 | 7.67 | 7.67 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 898.000 | 7.67 | 7.68 | 7.68 | 7.68 | 7.68 |
| 899.000 | 7.69 | 7.69 | 7.69 | 7.70 | 7.70 |
| 900.000 | 7.70 | 7.70 | 7.71 | 7.71 | 7.71 |
| 901.000 | 7.72 | 7.72 | 7.72 | 7.72 | 7.73 |
| 902.000 | 7.73 | 7.73 | 7.74 | 7.74 | 7.74 |
| 903.000 | 7.74 | 7.75 | 7.75 | 7.75 | 7.76 |
| 904.000 | 7.76 | 7.76 | 7.76 | 7.77 | 7.77 |
| 905.000 | 7.77 | 7.78 | 7.78 | 7.78 | 7.79 |
| 906.000 | 7.79 | 7.79 | 7.79 | 7.80 | 7.80 |
| 907.000 | 7.80 | 7.81 | 7.81 | 7.81 | 7.81 |
| 908.000 | 7.82 | 7.82 | 7.82 | 7.83 | 7.83 |
| 909.000 | 7.83 | 7.84 | 7.84 | 7.84 | 7.84 |
| 910.000 | 7.85 | 7.85 | 7.85 | 7.86 | 7.86 |
| 911.000 | 7.86 | 7.87 | 7.87 | 7.87 | 7.88 |
| 912.000 | 7.88 | 7.88 | 7.88 | 7.89 | 7.89 |
| 913.000 | 7.89 | 7.90 | 7.90 | 7.90 | 7.91 |
| 914.000 | 7.91 | 7.91 | 7.92 | 7.92 | 7.92 |
| 915.000 | 7.92 | 7.93 | 7.93 | 7.93 | 7.94 |
| 916.000 | 7.94 | 7.94 | 7.95 | 7.95 | 7.95 |
| 917.000 | 7.96 | 7.96 | 7.96 | 7.97 | 7.97 |
| 918.000 | 7.97 | 7.97 | 7.98 | 7.98 | 7.98 |
| 919.000 | 7.99 | 7.99 | 7.99 | 8.00 | 8.00 |
| 920.000 | 8.00 | 8.01 | 8.01 | 8.01 | 8.02 |
| 921.000 | 8.02 | 8.02 | 8.03 | 8.03 | 8.03 |
| 922.000 | 8.04 | 8.04 | 8.04 | 8.05 | 8.05 |
| 923.000 | 8.05 | 8.06 | 8.06 | 8.06 | 8.07 |
| 924.000 | 8.07 | 8.07 | 8.08 | 8.08 | 8.08 |
| 925.000 | 8.09 | 8.09 | 8.09 | 8.10 | 8.10 |
| 926.000 | 8.10 | 8.11 | 8.11 | 8.11 | 8.12 |
| 927.000 | 8.12 | 8.12 | 8.13 | 8.13 | 8.13 |
| 928.000 | 8.14 | 8.14 | 8.14 | 8.15 | 8.15 |
| 929.000 | 8.15 | 8.16 | 8.16 | 8.16 | 8.17 |
| 930.000 | 8.17 | 8.17 | 8.18 | 8.18 | 8.18 |
| 931.000 | 8.19 | 8.19 | 8.19 | 8.20 | 8.20 |
| 932.000 | 8.20 | 8.21 | 8.21 | 8.21 | 8.22 |
| 933.000 | 8.22 | 8.22 | 8.23 | 8.23 | 8.24 |
| 934.000 | 8.24 | 8.24 | 8.25 | 8.25 | 8.25 |
| 935.000 | 8.26 | 8.26 | 8.26 | 8.27 | 8.27 |
| 936.000 | 8.27 | 8.28 | 8.28 | 8.28 | 8.29 |
| 937.000 | 8.29 | 8.30 | 8.30 | 8.30 | 8.31 |
| 938.000 | 8.31 | 8.31 | 8.32 | 8.32 | 8.32 |
| 939.000 | 8.33 | 8.33 | 8.34 | 8.34 | 8.34 |
| 940.000 | 8.35 | 8.35 | 8.35 | 8.36 | 8.36 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 941.000 | 8.36 | 8.37 | 8.37 | 8.38 | 8.38 |
| 942.000 | 8.38 | 8.39 | 8.39 | 8.39 | 8.40 |
| 943.000 | 8.40 | 8.41 | 8.41 | 8.41 | 8.42 |
| 944.000 | 8.42 | 8.42 | 8.43 | 8.43 | 8.44 |
| 945.000 | 8.44 | 8.44 | 8.45 | 8.45 | 8.45 |
| 946.000 | 8.46 | 8.46 | 8.47 | 8.47 | 8.47 |
| 947.000 | 8.48 | 8.48 | 8.49 | 8.49 | 8.49 |
| 948.000 | 8.50 | 8.50 | 8.50 | 8.51 | 8.51 |
| 949.000 | 8.52 | 8.52 | 8.52 | 8.53 | 8.53 |
| 950.000 | 8.54 | 8.54 | 8.54 | 8.55 | 8.55 |
| 951.000 | 8.56 | 8.56 | 8.56 | 8.57 | 8.57 |
| 952.000 | 8.58 | 8.58 | 8.58 | 8.59 | 8.59 |
| 953.000 | 8.60 | 8.60 | 8.60 | 8.61 | 8.61 |
| 954.000 | 8.62 | 8.62 | 8.62 | 8.63 | 8.63 |
| 955.000 | 8.64 | 8.64 | 8.64 | 8.65 | 8.65 |
| 956.000 | 8.66 | 8.66 | 8.66 | 8.67 | 8.67 |
| 957.000 | 8.68 | 8.68 | 8.68 | 8.69 | 8.69 |
| 958.000 | 8.70 | 8.70 | 8.71 | 8.71 | 8.71 |
| 959.000 | 8.72 | 8.72 | 8.73 | 8.73 | 8.73 |
| 960.000 | 8.74 | 8.74 | 8.75 | 8.75 | 8.76 |
| 961.000 | 8.76 | 8.76 | 8.77 | 8.77 | 8.78 |
| 962.000 | 8.78 | 8.79 | 8.79 | 8.79 | 8.80 |
| 963.000 | 8.80 | 8.81 | 8.81 | 8.82 | 8.82 |
| 964.000 | 8.82 | 8.83 | 8.83 | 8.84 | 8.84 |
| 965.000 | 8.85 | 8.85 | 8.86 | 8.86 | 8.86 |
| 966.000 | 8.87 | 8.87 | 8.88 | 8.88 | 8.89 |
| 967.000 | 8.89 | 8.90 | 8.90 | 8.90 | 8.91 |
| 968.000 | 8.91 | 8.92 | 8.92 | 8.93 | 8.93 |
| 969.000 | 8.94 | 8.94 | 8.94 | 8.95 | 8.95 |
| 970.000 | 8.96 | 8.96 | 8.97 | 8.97 | 8.98 |
| 971.000 | 8.98 | 8.99 | 8.99 | 9.00 | 9.00 |
| 972.000 | 9.00 | 9.01 | 9.01 | 9.02 | 9.02 |
| 973.000 | 9.03 | 9.03 | 9.04 | 9.04 | 9.05 |
| 974.000 | 9.05 | 9.06 | 9.06 | 9.07 | 9.07 |
| 975.000 | 9.07 | 9.08 | 9.08 | 9.09 | 9.09 |
| 976.000 | 9.10 | 9.10 | 9.11 | 9.11 | 9.12 |
| 977.000 | 9.12 | 9.13 | 9.13 | 9.14 | 9.14 |
| 978.000 | 9.15 | 9.15 | 9.16 | 9.16 | 9.17 |
| 979.000 | 9.17 | 9.18 | 9.18 | 9.19 | 9.19 |
| 980.000 | 9.20 | 9.20 | 9.21 | 9.21 | 9.22 |
| 981.000 | 9.22 | 9.23 | 9.23 | 9.24 | 9.24 |
| 982.000 | 9.25 | 9.25 | 9.26 | 9.26 | 9.27 |
| 983.000 | 9.27 | 9.28 | 9.28 | 9.29 | 9.29 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 984.000 | 9.30 | 9.30 | 9.31 | 9.31 | 9.32 |
| 985.000 | 9.32 | 9.33 | 9.33 | 9.34 | 9.34 |
| 986.000 | 9.35 | 9.35 | 9.36 | 9.36 | 9.37 |
| 987.000 | 9.37 | 9.38 | 9.38 | 9.39 | 9.40 |
| 988.000 | 9.40 | 9.41 | 9.41 | 9.42 | 9.42 |
| 989.000 | 9.43 | 9.43 | 9.44 | 9.44 | 9.45 |
| 990.000 | 9.45 | 9.46 | 9.46 | 9.47 | 9.48 |
| 991.000 | 9.48 | 9.49 | 9.49 | 9.50 | 9.50 |
| 992.000 | 9.51 | 9.51 | 9.52 | 9.52 | 9.53 |
| 993.000 | 9.54 | 9.54 | 9.55 | 9.55 | 9.56 |
| 994.000 | 9.56 | 9.57 | 9.57 | 9.58 | 9.59 |
| 995.000 | 9.59 | 9.60 | 9.60 | 9.61 | 9.61 |
| 996.000 | 9.62 | 9.63 | 9.63 | 9.64 | 9.64 |
| 997.000 | 9.65 | 9.65 | 9.66 | 9.67 | 9.67 |
| 998.000 | 9.68 | 9.68 | 9.69 | 9.69 | 9.70 |
| 999.000 | 9.71 | 9.71 | 9.72 | 9.72 | 9.73 |
| 1,000.000 | 9.74 | 9.74 | 9.75 | 9.75 | 9.76 |
| 1,001.000 | 9.77 | 9.77 | 9.78 | 9.78 | 9.79 |
| 1,002.000 | 9.80 | 9.80 | 9.81 | 9.81 | 9.82 |
| 1,003.000 | 9.83 | 9.83 | 9.84 | 9.84 | 9.85 |
| 1,004.000 | 9.86 | 9.86 | 9.87 | 9.87 | 9.88 |
| 1,005.000 | 9.89 | 9.89 | 9.90 | 9.91 | 9.91 |
| 1,006.000 | 9.92 | 9.92 | 9.93 | 9.94 | 9.94 |
| 1,007.000 | 9.95 | 9.96 | 9.96 | 9.97 | 9.97 |
| 1,008.000 | 9.98 | 9.99 | 9.99 | 10.00 | 10.01 |
| 1,009.000 | 10.01 | 10.02 | 10.03 | 10.03 | 10.04 |
| 1,010.000 | 10.05 | 10.05 | 10.06 | 10.07 | 10.07 |
| 1,011.000 | 10.08 | 10.08 | 10.09 | 10.10 | 10.10 |
| 1,012.000 | 10.11 | 10.12 | 10.12 | 10.13 | 10.14 |
| 1,013.000 | 10.14 | 10.15 | 10.16 | 10.16 | 10.17 |
| 1,014.000 | 10.18 | 10.19 | 10.19 | 10.20 | 10.21 |
| 1,015.000 | 10.21 | 10.22 | 10.23 | 10.23 | 10.24 |
| 1,016.000 | 10.25 | 10.25 | 10.26 | 10.27 | 10.27 |
| 1,017.000 | 10.28 | 10.29 | 10.30 | 10.30 | 10.31 |
| 1,018.000 | 10.32 | 10.32 | 10.33 | 10.34 | 10.35 |
| 1,019.000 | 10.35 | 10.36 | 10.37 | 10.37 | 10.38 |
| 1,020.000 | 10.39 | 10.40 | 10.40 | 10.41 | 10.42 |
| 1,021.000 | 10.42 | 10.43 | 10.44 | 10.45 | 10.45 |
| 1,022.000 | 10.46 | 10.47 | 10.48 | 10.48 | 10.49 |
| 1,023.000 | 10.50 | 10.51 | 10.51 | 10.52 | 10.53 |
| 1,024.000 | 10.54 | 10.54 | 10.55 | 10.56 | 10.57 |
| 1,025.000 | 10.57 | 10.58 | 10.59 | 10.60 | 10.60 |
| 1,026.000 | 10.61 | 10.62 | 10.63 | 10.64 | 10.64 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,027.000 | 10.65 | 10.66 | 10.67 | 10.67 | 10.68 |
| 1,028.000 | 10.69 | 10.70 | 10.71 | 10.71 | 10.72 |
| 1,029.000 | 10.73 | 10.74 | 10.75 | 10.75 | 10.76 |
| 1,030.000 | 10.77 | 10.78 | 10.79 | 10.79 | 10.80 |
| 1,031.000 | 10.81 | 10.82 | 10.83 | 10.84 | 10.84 |
| 1,032.000 | 10.85 | 10.86 | 10.87 | 10.88 | 10.88 |
| 1,033.000 | 10.89 | 10.90 | 10.91 | 10.92 | 10.93 |
| 1,034.000 | 10.94 | 10.94 | 10.95 | 10.96 | 10.97 |
| 1,035.000 | 10.98 | 10.99 | 11.00 | 11.00 | 11.01 |
| 1,036.000 | 11.02 | 11.03 | 11.04 | 11.05 | 11.06 |
| 1,037.000 | 11.06 | 11.07 | 11.08 | 11.09 | 11.10 |
| 1,038.000 | 11.11 | 11.12 | 11.13 | 11.14 | 11.14 |
| 1,039.000 | 11.15 | 11.16 | 11.17 | 11.18 | 11.19 |
| 1,040.000 | 11.20 | 11.21 | 11.22 | 11.23 | 11.24 |
| 1,041.000 | 11.24 | 11.25 | 11.26 | 11.27 | 11.28 |
| 1,042.000 | 11.29 | 11.30 | 11.31 | 11.32 | 11.33 |
| 1,043.000 | 11.34 | 11.35 | 11.36 | 11.37 | 11.38 |
| 1,044.000 | 11.39 | 11.40 | 11.41 | 11.41 | 11.42 |
| 1,045.000 | 11.43 | 11.44 | 11.45 | 11.46 | 11.47 |
| 1,046.000 | 11.48 | 11.49 | 11.50 | 11.51 | 11.52 |
| 1,047.000 | 11.53 | 11.54 | 11.55 | 11.56 | 11.57 |
| 1,048.000 | 11.58 | 11.59 | 11.60 | 11.61 | 11.62 |
| 1,049.000 | 11.63 | 11.64 | 11.65 | 11.66 | 11.68 |
| 1,050.000 | 11.69 | 11.70 | 11.71 | 11.72 | 11.73 |
| 1,051.000 | 11.74 | 11.75 | 11.76 | 11.77 | 11.78 |
| 1,052.000 | 11.79 | 11.80 | 11.81 | 11.82 | 11.83 |
| 1,053.000 | 11.85 | 11.86 | 11.87 | 11.88 | 11.89 |
| 1,054.000 | 11.90 | 11.91 | 11.92 | 11.93 | 11.94 |
| 1,055.000 | 11.96 | 11.97 | 11.98 | 11.99 | 12.00 |
| 1,056.000 | 12.01 | 12.02 | 12.03 | 12.05 | 12.06 |
| 1,057.000 | 12.07 | 12.08 | 12.09 | 12.10 | 12.11 |
| 1,058.000 | 12.13 | 12.14 | 12.15 | 12.16 | 12.17 |
| 1,059.000 | 12.19 | 12.20 | 12.21 | 12.22 | 12.23 |
| 1,060.000 | 12.24 | 12.26 | 12.27 | 12.28 | 12.29 |
| 1,061.000 | 12.31 | 12.32 | 12.33 | 12.34 | 12.35 |
| 1,062.000 | 12.37 | 12.38 | 12.39 | 12.40 | 12.42 |
| 1,063.000 | 12.43 | 12.44 | 12.45 | 12.47 | 12.48 |
| 1,064.000 | 12.49 | 12.51 | 12.52 | 12.53 | 12.54 |
| 1,065.000 | 12.56 | 12.57 | 12.58 | 12.60 | 12.61 |
| 1,066.000 | 12.62 | 12.64 | 12.65 | 12.66 | 12.68 |
| 1,067.000 | 12.69 | 12.70 | 12.72 | 12.73 | 12.74 |
| 1,068.000 | 12.76 | 12.77 | 12.78 | 12.80 | 12.81 |
| 1,069.000 | 12.83 | 12.84 | 12.85 | 12.87 | 12.88 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,070.000 | 12.90 | 12.91 | 12.92 | 12.94 | 12.95 |
| 1,071.000 | 12.97 | 12.98 | 12.99 | 13.01 | 13.02 |
| 1,072.000 | 13.04 | 13.05 | 13.07 | 13.08 | 13.09 |
| 1,073.000 | 13.11 | 13.12 | 13.14 | 13.15 | 13.17 |
| 1,074.000 | 13.18 | 13.20 | 13.21 | 13.23 | 13.24 |
| 1,075.000 | 13.26 | 13.27 | 13.29 | 13.30 | 13.32 |
| 1,076.000 | 13.33 | 13.35 | 13.37 | 13.38 | 13.40 |
| 1,077.000 | 13.41 | 13.43 | 13.44 | 13.46 | 13.48 |
| 1,078.000 | 13.49 | 13.51 | 13.52 | 13.54 | 13.56 |
| 1,079.000 | 13.57 | 13.59 | 13.60 | 13.62 | 13.64 |
| 1,080.000 | 13.65 | 13.67 | 13.69 | 13.70 | 13.72 |
| 1,081.000 | 13.74 | 13.75 | 13.77 | 13.79 | 13.81 |
| 1,082.000 | 13.82 | 13.84 | 13.86 | 13.88 | 13.89 |
| 1,083.000 | 13.91 | 13.93 | 13.95 | 13.96 | 13.98 |
| 1,084.000 | 14.00 | 14.02 | 14.04 | 14.05 | 14.07 |
| 1,085.000 | 14.09 | 14.11 | 14.13 | 14.15 | 14.16 |
| 1,086.000 | 14.18 | 14.20 | 14.22 | 14.24 | 14.26 |
| 1,087.000 | 14.28 | 14.30 | 14.32 | 14.33 | 14.35 |
| 1,088.000 | 14.37 | 14.39 | 14.41 | 14.43 | 14.45 |
| 1,089.000 | 14.47 | 14.49 | 14.51 | 14.53 | 14.55 |
| 1,090.000 | 14.57 | 14.59 | 14.61 | 14.63 | 14.65 |
| 1,091.000 | 14.68 | 14.70 | 14.72 | 14.74 | 14.76 |
| 1,092.000 | 14.78 | 14.80 | 14.82 | 14.85 | 14.87 |
| 1,093.000 | 14.89 | 14.91 | 14.93 | 14.95 | 14.98 |
| 1,094.000 | 15.00 | 15.02 | 15.04 | 15.07 | 15.09 |
| 1,095.000 | 15.11 | 15.13 | 15.16 | 15.18 | 15.20 |
| 1,096.000 | 15.23 | 15.25 | 15.27 | 15.30 | 15.32 |
| 1,097.000 | 15.34 | 15.37 | 15.39 | 15.42 | 15.44 |
| 1,098.000 | 15.47 | 15.49 | 15.51 | 15.54 | 15.56 |
| 1,099.000 | 15.59 | 15.61 | 15.64 | 15.67 | 15.69 |
| 1,100.000 | 15.72 | 15.74 | 15.77 | 15.79 | 15.82 |
| 1,101.000 | 15.85 | 15.87 | 15.90 | 15.93 | 15.95 |
| 1,102.000 | 15.98 | 16.01 | 16.04 | 16.06 | 16.09 |
| 1,103.000 | 16.12 | 16.15 | 16.17 | 16.20 | 16.23 |
| 1,104.000 | 16.26 | 16.29 | 16.32 | 16.35 | 16.38 |
| 1,105.000 | 16.41 | 16.43 | 16.46 | 16.49 | 16.52 |
| 1,106.000 | 16.55 | 16.59 | 16.62 | 16.65 | 16.68 |
| 1,107.000 | 16.71 | 16.74 | 16.77 | 16.80 | 16.83 |
| 1,108.000 | 16.87 | 16.90 | 16.93 | 16.96 | 17.00 |
| 1,109.000 | 17.03 | 17.06 | 17.10 | 17.13 | 17.16 |
| 1,110.000 | 17.20 | 17.23 | 17.27 | 17.30 | 17.34 |
| 1,111.000 | 17.37 | 17.41 | 17.44 | 17.48 | 17.51 |
| 1,112.000 | 17.55 | 17.59 | 17.62 | 17.66 | 17.70 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,113.000 | 17.74 | 17.77 | 17.81 | 17.85 | 17.89 |
| 1,114.000 | 17.93 | 17.97 | 18.00 | 18.04 | 18.08 |
| 1,115.000 | 18.12 | 18.16 | 18.21 | 18.25 | 18.29 |
| 1,116.000 | 18.33 | 18.37 | 18.41 | 18.46 | 18.50 |
| 1,117.000 | 18.54 | 18.58 | 18.63 | 18.67 | 18.72 |
| 1,118.000 | 18.76 | 18.81 | 18.85 | 18.90 | 18.94 |
| 1,119.000 | 18.99 | 19.04 | 19.08 | 19.13 | 19.18 |
| 1,120.000 | 19.23 | 19.28 | 19.32 | 19.37 | 19.42 |
| 1,121.000 | 19.47 | 19.52 | 19.58 | 19.63 | 19.68 |
| 1,122.000 | 19.73 | 19.78 | 19.84 | 19.89 | 19.95 |
| 1,123.000 | 20.00 | 20.05 | 20.11 | 20.17 | 20.22 |
| 1,124.000 | 20.28 | 20.34 | 20.40 | 20.45 | 20.51 |
| 1,125.000 | 20.57 | 20.63 | 20.69 | 20.75 | 20.82 |
| 1,126.000 | 20.88 | 20.94 | 21.00 | 21.07 | 21.13 |
| 1,127.000 | 21.20 | 21.26 | 21.33 | 21.40 | 21.46 |
| 1,128.000 | 21.53 | 21.60 | 21.67 | 21.74 | 21.81 |
| 1,129.000 | 21.88 | 21.96 | 22.03 | 22.10 | 22.18 |
| 1,130.000 | 22.25 | 22.33 | 22.41 | 22.49 | 22.56 |
| 1,131.000 | 22.64 | 22.73 | 22.81 | 22.89 | 22.97 |
| 1,132.000 | 23.06 | 23.14 | 23.23 | 23.32 | 23.41 |
| 1,133.000 | 23.50 | 23.59 | 23.68 | 23.78 | 23.87 |
| 1,134.000 | 23.97 | 24.06 | 24.16 | 24.26 | 24.36 |
| 1,135.000 | 24.46 | 24.57 | 24.67 | 24.78 | 24.89 |
| 1,136.000 | 25.00 | 25.11 | 25.22 | 25.33 | 25.45 |
| 1,137.000 | 25.57 | 25.69 | 25.81 | 25.93 | 26.06 |
| 1,138.000 | 26.18 | 26.31 | 26.44 | 26.57 | 26.71 |
| 1,139.000 | 26.85 | 26.98 | 27.13 | 27.27 | 27.42 |
| 1,140.000 | 27.57 | 27.72 | 27.87 | 28.03 | 28.19 |
| 1,141.000 | 28.35 | 28.52 | 28.69 | 28.86 | 29.04 |
| 1,142.000 | 29.22 | 29.41 | 29.59 | 29.79 | 29.98 |
| 1,143.000 | 30.18 | 30.39 | 30.60 | 30.81 | 31.03 |
| 1,144.000 | 31.26 | 31.49 | 31.73 | 31.97 | 32.22 |
| 1,145.000 | 32.47 | 32.74 | 33.01 | 33.29 | 33.57 |
| 1,146.000 | 33.87 | 34.17 | 34.49 | 34.81 | 35.15 |
| 1,147.000 | 35.49 | 35.85 | 36.23 | 36.62 | 37.02 |
| 1,148.000 | 37.44 | 37.88 | 38.34 | 38.82 | 39.32 |
| 1,149.000 | 39.84 | 40.40 | 40.98 | 41.61 | 42.27 |
| 1,150.000 | 42.98 | 43.74 | 44.57 | 45.47 | 46.47 |
| 1,151.000 | 47.58 | 48.85 | 50.33 | 52.16 | 54.63 |
| 1,152.000 | 60.79 | 63.76 | 64.80 | 65.49 | 66.01 |
| 1,153.000 | 66.40 | 66.71 | 66.95 | 67.14 | 67.28 |
| 1,154.000 | 67.39 | 67.46 | 67.50 | 67.51 | 67.50 |
| 1,155.000 | 67.46 | 67.41 | 67.33 | 67.23 | 67.12 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,156.000 | 66.99 | 66.84 | 66.68 | 66.50 | 66.30 |
| 1,157.000 | 66.09 | 65.87 | 65.63 | 65.37 | 65.10 |
| 1,158.000 | 64.82 | 64.52 | 64.20 | 63.88 | 63.53 |
| 1,159.000 | 63.17 | 62.80 | 62.41 | 62.00 | 61.57 |
| 1,160.000 | 61.13 | 60.67 | 60.19 | 59.69 | 59.17 |
| 1,161.000 | 58.62 | 58.05 | 57.46 | 56.84 | 56.20 |
| 1,162.000 | 55.52 | 54.80 | 54.05 | 53.26 | 52.43 |
| 1,163.000 | 51.53 | 50.58 | 49.56 | 48.46 | 47.26 |
| 1,164.000 | 45.94 | 44.45 | 42.75 | 40.70 | 37.99 |
| 1,165.000 | 31.56 | 28.34 | 27.05 | 26.10 | 25.33 |
| 1,166.000 | 24.67 | 24.09 | 23.57 | 23.10 | 22.67 |
| 1,167.000 | 22.27 | 21.90 | 21.56 | 21.23 | 20.93 |
| 1,168.000 | 20.64 | 20.36 | 20.10 | 19.85 | 19.61 |
| 1,169.000 | 19.38 | 19.16 | 18.95 | 18.75 | 18.56 |
| 1,170.000 | 18.37 | 18.19 | 18.01 | 17.85 | 17.68 |
| 1,171.000 | 17.52 | 17.37 | 17.22 | 17.07 | 16.93 |
| 1,172.000 | 16.80 | 16.66 | 16.53 | 16.41 | 16.28 |
| 1,173.000 | 16.16 | 16.05 | 15.93 | 15.82 | 15.71 |
| 1,174.000 | 15.61 | 15.50 | 15.40 | 15.30 | 15.20 |
| 1,175.000 | 15.11 | 15.01 | 14.92 | 14.83 | 14.74 |
| 1,176.000 | 14.65 | 14.57 | 14.49 | 14.40 | 14.32 |
| 1,177.000 | 14.25 | 14.17 | 14.09 | 14.02 | 13.94 |
| 1,178.000 | 13.87 | 13.80 | 13.73 | 13.66 | 13.59 |
| 1,179.000 | 13.53 | 13.46 | 13.40 | 13.33 | 13.27 |
| 1,180.000 | 13.21 | 13.15 | 13.09 | 13.03 | 12.97 |
| 1,181.000 | 12.91 | 12.86 | 12.80 | 12.74 | 12.69 |
| 1,182.000 | 12.63 | 12.58 | 12.53 | 12.48 | 12.42 |
| 1,183.000 | 12.37 | 12.32 | 12.27 | 12.23 | 12.18 |
| 1,184.000 | 12.13 | 12.08 | 12.04 | 11.99 | 11.94 |
| 1,185.000 | 11.90 | 11.85 | 11.81 | 11.77 | 11.72 |
| 1,186.000 | 11.68 | 11.64 | 11.60 | 11.56 | 11.52 |
| 1,187.000 | 11.48 | 11.44 | 11.40 | 11.36 | 11.32 |
| 1,188.000 | 11.28 | 11.25 | 11.21 | 11.17 | 11.14 |
| 1,189.000 | 11.10 | 11.06 | 11.03 | 10.99 | 10.96 |
| 1,190.000 | 10.92 | 10.89 | 10.86 | 10.82 | 10.79 |
| 1,191.000 | 10.76 | 10.73 | 10.69 | 10.66 | 10.63 |
| 1,192.000 | 10.60 | 10.57 | 10.54 | 10.51 | 10.48 |
| 1,193.000 | 10.45 | 10.42 | 10.39 | 10.36 | 10.33 |
| 1,194.000 | 10.30 | 10.27 | 10.25 | 10.22 | 10.19 |
| 1,195.000 | 10.16 | 10.14 | 10.11 | 10.08 | 10.06 |
| 1,196.000 | 10.03 | 10.00 | 9.98 | 9.95 | 9.93 |
| 1,197.000 | 9.90 | 9.88 | 9.85 | 9.83 | 9.80 |
| 1,198.000 | 9.78 | 9.76 | 9.73 | 9.71 | 9.69 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,199.000 | 9.66 | 9.64 | 9.62 | 9.59 | 9.57 |
| 1,200.000 | 9.55 | 9.53 | 9.50 | 9.48 | 9.46 |
| 1,201.000 | 9.44 | 9.42 | 9.40 | 9.37 | 9.35 |
| 1,202.000 | 9.33 | 9.31 | 9.29 | 9.27 | 9.25 |
| 1,203.000 | 9.23 | 9.21 | 9.19 | 9.17 | 9.15 |
| 1,204.000 | 9.13 | 9.11 | 9.09 | 9.07 | 9.05 |
| 1,205.000 | 9.04 | 9.02 | 9.00 | 8.98 | 8.96 |
| 1,206.000 | 8.94 | 8.92 | 8.91 | 8.89 | 8.87 |
| 1,207.000 | 8.85 | 8.84 | 8.82 | 8.80 | 8.78 |
| 1,208.000 | 8.77 | 8.75 | 8.73 | 8.72 | 8.70 |
| 1,209.000 | 8.68 | 8.67 | 8.65 | 8.63 | 8.62 |
| 1,210.000 | 8.60 | 8.58 | 8.57 | 8.55 | 8.54 |
| 1,211.000 | 8.52 | 8.51 | 8.49 | 8.47 | 8.46 |
| 1,212.000 | 8.44 | 8.43 | 8.41 | 8.40 | 8.38 |
| 1,213.000 | 8.37 | 8.35 | 8.34 | 8.32 | 8.31 |
| 1,214.000 | 8.30 | 8.28 | 8.27 | 8.25 | 8.24 |
| 1,215.000 | 8.22 | 8.21 | 8.20 | 8.18 | 8.17 |
| 1,216.000 | 8.16 | 8.14 | 8.13 | 8.11 | 8.10 |
| 1,217.000 | 8.09 | 8.07 | 8.06 | 8.05 | 8.04 |
| 1,218.000 | 8.02 | 8.01 | 8.00 | 7.98 | 7.97 |
| 1,219.000 | 7.96 | 7.95 | 7.93 | 7.92 | 7.91 |
| 1,220.000 | 7.90 | 7.88 | 7.87 | 7.86 | 7.85 |
| 1,221.000 | 7.83 | 7.82 | 7.81 | 7.80 | 7.79 |
| 1,222.000 | 7.78 | 7.76 | 7.75 | 7.74 | 7.73 |
| 1,223.000 | 7.72 | 7.71 | 7.69 | 7.68 | 7.67 |
| 1,224.000 | 7.66 | 7.65 | 7.64 | 7.63 | 7.62 |
| 1,225.000 | 7.60 | 7.59 | 7.58 | 7.57 | 7.56 |
| 1,226.000 | 7.55 | 7.54 | 7.53 | 7.51 | 7.50 |
| 1,227.000 | 7.49 | 7.48 | 7.47 | 7.46 | 7.45 |
| 1,228.000 | 7.44 | 7.43 | 7.42 | 7.41 | 7.40 |
| 1,229.000 | 7.39 | 7.38 | 7.36 | 7.35 | 7.34 |
| 1,230.000 | 7.33 | 7.32 | 7.31 | 7.30 | 7.29 |
| 1,231.000 | 7.28 | 7.27 | 7.26 | 7.25 | 7.24 |
| 1,232.000 | 7.23 | 7.22 | 7.21 | 7.20 | 7.19 |
| 1,233.000 | 7.19 | 7.18 | 7.17 | 7.16 | 7.15 |
| 1,234.000 | 7.14 | 7.13 | 7.12 | 7.11 | 7.10 |
| 1,235.000 | 7.09 | 7.08 | 7.07 | 7.06 | 7.05 |
| 1,236.000 | 7.05 | 7.04 | 7.03 | 7.02 | 7.01 |
| 1,237.000 | 7.00 | 6.99 | 6.98 | 6.97 | 6.97 |
| 1,238.000 | 6.96 | 6.95 | 6.94 | 6.93 | 6.92 |
| 1,239.000 | 6.91 | 6.91 | 6.90 | 6.89 | 6.88 |
| 1,240.000 | 6.87 | 6.86 | 6.86 | 6.85 | 6.84 |
| 1,241.000 | 6.83 | 6.82 | 6.81 | 6.81 | 6.80 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,242.000 | 6.79 | 6.78 | 6.77 | 6.77 | 6.76 |
| 1,243.000 | 6.75 | 6.74 | 6.73 | 6.73 | 6.72 |
| 1,244.000 | 6.71 | 6.70 | 6.70 | 6.69 | 6.68 |
| 1,245.000 | 6.67 | 6.66 | 6.66 | 6.65 | 6.64 |
| 1,246.000 | 6.63 | 6.63 | 6.62 | 6.61 | 6.60 |
| 1,247.000 | 6.60 | 6.59 | 6.58 | 6.57 | 6.57 |
| 1,248.000 | 6.56 | 6.55 | 6.55 | 6.54 | 6.53 |
| 1,249.000 | 6.52 | 6.52 | 6.51 | 6.50 | 6.50 |
| 1,250.000 | 6.49 | 6.48 | 6.47 | 6.47 | 6.46 |
| 1,251.000 | 6.45 | 6.45 | 6.44 | 6.43 | 6.43 |
| 1,252.000 | 6.42 | 6.41 | 6.41 | 6.40 | 6.39 |
| 1,253.000 | 6.39 | 6.38 | 6.37 | 6.37 | 6.36 |
| 1,254.000 | 6.35 | 6.35 | 6.34 | 6.33 | 6.33 |
| 1,255.000 | 6.32 | 6.31 | 6.31 | 6.30 | 6.29 |
| 1,256.000 | 6.29 | 6.28 | 6.28 | 6.27 | 6.26 |
| 1,257.000 | 6.26 | 6.25 | 6.24 | 6.24 | 6.23 |
| 1,258.000 | 6.23 | 6.22 | 6.21 | 6.21 | 6.20 |
| 1,259.000 | 6.20 | 6.19 | 6.18 | 6.18 | 6.17 |
| 1,260.000 | 6.16 | 6.16 | 6.15 | 6.15 | 6.14 |
| 1,261.000 | 6.14 | 6.13 | 6.12 | 6.12 | 6.11 |
| 1,262.000 | 6.11 | 6.10 | 6.09 | 6.09 | 6.08 |
| 1,263.000 | 6.08 | 6.07 | 6.07 | 6.06 | 6.05 |
| 1,264.000 | 6.05 | 6.04 | 6.04 | 6.03 | 6.03 |
| 1,265.000 | 6.02 | 6.01 | 6.01 | 6.00 | 6.00 |
| 1,266.000 | 5.99 | 5.99 | 5.98 | 5.98 | 5.97 |
| 1,267.000 | 5.97 | 5.96 | 5.95 | 5.95 | 5.94 |
| 1,268.000 | 5.94 | 5.93 | 5.93 | 5.92 | 5.92 |
| 1,269.000 | 5.91 | 5.91 | 5.90 | 5.90 | 5.89 |
| 1,270.000 | 5.89 | 5.88 | 5.88 | 5.87 | 5.87 |
| 1,271.000 | 5.86 | 5.86 | 5.85 | 5.84 | 5.84 |
| 1,272.000 | 5.83 | 5.83 | 5.82 | 5.82 | 5.81 |
| 1,273.000 | 5.81 | 5.80 | 5.80 | 5.79 | 5.79 |
| 1,274.000 | 5.78 | 5.78 | 5.77 | 5.77 | 5.77 |
| 1,275.000 | 5.76 | 5.76 | 5.75 | 5.75 | 5.74 |
| 1,276.000 | 5.74 | 5.73 | 5.73 | 5.72 | 5.72 |
| 1,277.000 | 5.71 | 5.71 | 5.70 | 5.70 | 5.69 |
| 1,278.000 | 5.69 | 5.68 | 5.68 | 5.67 | 5.67 |
| 1,279.000 | 5.67 | 5.66 | 5.66 | 5.65 | 5.65 |
| 1,280.000 | 5.64 | 5.64 | 5.63 | 5.63 | 5.62 |
| 1,281.000 | 5.62 | 5.62 | 5.61 | 5.61 | 5.60 |
| 1,282.000 | 5.60 | 5.59 | 5.59 | 5.58 | 5.58 |
| 1,283.000 | 5.58 | 5.57 | 5.57 | 5.56 | 5.56 |
| 1,284.000 | 5.55 | 5.55 | 5.54 | 5.54 | 5.54 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,285.000 | 5.53 | 5.53 | 5.52 | 5.52 | 5.51 |
| 1,286.000 | 5.51 | 5.51 | 5.50 | 5.50 | 5.49 |
| 1,287.000 | 5.49 | 5.49 | 5.48 | 5.48 | 5.47 |
| 1,288.000 | 5.47 | 5.46 | 5.46 | 5.46 | 5.45 |
| 1,289.000 | 5.45 | 5.44 | 5.44 | 5.44 | 5.43 |
| 1,290.000 | 5.43 | 5.42 | 5.42 | 5.42 | 5.41 |
| 1,291.000 | 5.41 | 5.40 | 5.40 | 5.40 | 5.39 |
| 1,292.000 | 5.39 | 5.38 | 5.38 | 5.38 | 5.37 |
| 1,293.000 | 5.37 | 5.36 | 5.36 | 5.36 | 5.35 |
| 1,294.000 | 5.35 | 5.34 | 5.34 | 5.34 | 5.33 |
| 1,295.000 | 5.33 | 5.33 | 5.32 | 5.32 | 5.31 |
| 1,296.000 | 5.31 | 5.31 | 5.30 | 5.30 | 5.30 |
| 1,297.000 | 5.29 | 5.29 | 5.28 | 5.28 | 5.28 |
| 1,298.000 | 5.27 | 5.27 | 5.27 | 5.26 | 5.26 |
| 1,299.000 | 5.25 | 5.25 | 5.25 | 5.24 | 5.24 |
| 1,300.000 | 5.24 | 5.23 | 5.23 | 5.23 | 5.22 |
| 1,301.000 | 5.22 | 5.21 | 5.21 | 5.21 | 5.20 |
| 1,302.000 | 5.20 | 5.20 | 5.19 | 5.19 | 5.19 |
| 1,303.000 | 5.18 | 5.18 | 5.18 | 5.17 | 5.17 |
| 1,304.000 | 5.17 | 5.16 | 5.16 | 5.15 | 5.15 |
| 1,305.000 | 5.15 | 5.14 | 5.14 | 5.14 | 5.13 |
| 1,306.000 | 5.13 | 5.13 | 5.12 | 5.12 | 5.12 |
| 1,307.000 | 5.11 | 5.11 | 5.11 | 5.10 | 5.10 |
| 1,308.000 | 5.10 | 5.09 | 5.09 | 5.09 | 5.08 |
| 1,309.000 | 5.08 | 5.08 | 5.07 | 5.07 | 5.07 |
| 1,310.000 | 5.06 | 5.06 | 5.06 | 5.05 | 5.05 |
| 1,311.000 | 5.05 | 5.04 | 5.04 | 5.04 | 5.03 |
| 1,312.000 | 5.03 | 5.03 | 5.03 | 5.02 | 5.02 |
| 1,313.000 | 5.02 | 5.01 | 5.01 | 5.01 | 5.00 |
| 1,314.000 | 5.00 | 5.00 | 4.99 | 4.99 | 4.99 |
| 1,315.000 | 4.98 | 4.98 | 4.98 | 4.98 | 4.97 |
| 1,316.000 | 4.97 | 4.97 | 4.96 | 4.96 | 4.96 |
| 1,317.000 | 4.95 | 4.95 | 4.95 | 4.95 | 4.94 |
| 1,318.000 | 4.94 | 4.94 | 4.93 | 4.93 | 4.93 |
| 1,319.000 | 4.93 | 4.92 | 4.92 | 4.92 | 4.91 |
| 1,320.000 | 4.91 | 4.91 | 4.91 | 4.90 | 4.90 |
| 1,321.000 | 4.90 | 4.89 | 4.89 | 4.89 | 4.89 |
| 1,322.000 | 4.88 | 4.88 | 4.88 | 4.87 | 4.87 |
| 1,323.000 | 4.87 | 4.87 | 4.86 | 4.86 | 4.86 |
| 1,324.000 | 4.85 | 4.85 | 4.85 | 4.85 | 4.84 |
| 1,325.000 | 4.84 | 4.84 | 4.84 | 4.83 | 4.83 |
| 1,326.000 | 4.83 | 4.82 | 4.82 | 4.82 | 4.82 |
| 1,327.000 | 4.81 | 4.81 | 4.81 | 4.81 | 4.80 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,328.000 | 4.80 | 4.80 | 4.80 | 4.79 | 4.79 |
| 1,329.000 | 4.79 | 4.78 | 4.78 | 4.78 | 4.78 |
| 1,330.000 | 4.77 | 4.77 | 4.77 | 4.77 | 4.76 |
| 1,331.000 | 4.76 | 4.76 | 4.76 | 4.75 | 4.75 |
| 1,332.000 | 4.75 | 4.75 | 4.74 | 4.74 | 4.74 |
| 1,333.000 | 4.74 | 4.73 | 4.73 | 4.73 | 4.73 |
| 1,334.000 | 4.72 | 4.72 | 4.72 | 4.72 | 4.71 |
| 1,335.000 | 4.71 | 4.71 | 4.71 | 4.70 | 4.70 |
| 1,336.000 | 4.70 | 4.70 | 4.69 | 4.69 | 4.69 |
| 1,337.000 | 4.69 | 4.68 | 4.68 | 4.68 | 4.68 |
| 1,338.000 | 4.67 | 4.67 | 4.67 | 4.67 | 4.66 |
| 1,339.000 | 4.66 | 4.66 | 4.66 | 4.65 | 4.65 |
| 1,340.000 | 4.65 | 4.65 | 4.64 | 4.64 | 4.64 |
| 1,341.000 | 4.64 | 4.63 | 4.63 | 4.63 | 4.63 |
| 1,342.000 | 4.62 | 4.62 | 4.62 | 4.62 | 4.62 |
| 1,343.000 | 4.61 | 4.61 | 4.61 | 4.61 | 4.60 |
| 1,344.000 | 4.60 | 4.60 | 4.60 | 4.59 | 4.59 |
| 1,345.000 | 4.59 | 4.59 | 4.58 | 4.58 | 4.58 |
| 1,346.000 | 4.58 | 4.58 | 4.57 | 4.57 | 4.57 |
| 1,347.000 | 4.57 | 4.56 | 4.56 | 4.56 | 4.56 |
| 1,348.000 | 4.56 | 4.55 | 4.55 | 4.55 | 4.55 |
| 1,349.000 | 4.54 | 4.54 | 4.54 | 4.54 | 4.54 |
| 1,350.000 | 4.53 | 4.53 | 4.53 | 4.53 | 4.52 |
| 1,351.000 | 4.52 | 4.52 | 4.52 | 4.52 | 4.51 |
| 1,352.000 | 4.51 | 4.51 | 4.51 | 4.50 | 4.50 |
| 1,353.000 | 4.50 | 4.50 | 4.50 | 4.49 | 4.49 |
| 1,354.000 | 4.49 | 4.49 | 4.48 | 4.48 | 4.48 |
| 1,355.000 | 4.48 | 4.48 | 4.47 | 4.47 | 4.47 |
| 1,356.000 | 4.47 | 4.47 | 4.46 | 4.46 | 4.46 |
| 1,357.000 | 4.46 | 4.45 | 4.45 | 4.45 | 4.45 |
| 1,358.000 | 4.45 | 4.44 | 4.44 | 4.44 | 4.44 |
| 1,359.000 | 4.44 | 4.43 | 4.43 | 4.43 | 4.43 |
| 1,360.000 | 4.43 | 4.42 | 4.42 | 4.42 | 4.42 |
| 1,361.000 | 4.42 | 4.41 | 4.41 | 4.41 | 4.41 |
| 1,362.000 | 4.41 | 4.40 | 4.40 | 4.40 | 4.40 |
| 1,363.000 | 4.40 | 4.39 | 4.39 | 4.39 | 4.39 |
| 1,364.000 | 4.38 | 4.38 | 4.38 | 4.38 | 4.38 |
| 1,365.000 | 4.37 | 4.37 | 4.37 | 4.37 | 4.37 |
| 1,366.000 | 4.37 | 4.36 | 4.36 | 4.36 | 4.36 |
| 1,367.000 | 4.36 | 4.35 | 4.35 | 4.35 | 4.35 |
| 1,368.000 | 4.35 | 4.34 | 4.34 | 4.34 | 4.34 |
| 1,369.000 | 4.34 | 4.33 | 4.33 | 4.33 | 4.33 |
| 1,370.000 | 4.33 | 4.32 | 4.32 | 4.32 | 4.32 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,371.000 | 4.32 | 4.31 | 4.31 | 4.31 | 4.31 |
| 1,372.000 | 4.31 | 4.30 | 4.30 | 4.30 | 4.30 |
| 1,373.000 | 4.30 | 4.30 | 4.29 | 4.29 | 4.29 |
| 1,374.000 | 4.29 | 4.29 | 4.28 | 4.28 | 4.28 |
| 1,375.000 | 4.28 | 4.28 | 4.28 | 4.27 | 4.27 |
| 1,376.000 | 4.27 | 4.27 | 4.27 | 4.26 | 4.26 |
| 1,377.000 | 4.26 | 4.26 | 4.26 | 4.25 | 4.25 |
| 1,378.000 | 4.25 | 4.25 | 4.25 | 4.25 | 4.24 |
| 1,379.000 | 4.24 | 4.24 | 4.24 | 4.24 | 4.23 |
| 1,380.000 | 4.23 | 4.23 | 4.23 | 4.23 | 4.23 |
| 1,381.000 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 |
| 1,382.000 | 4.22 | 4.21 | 4.21 | 4.21 | 4.21 |
| 1,383.000 | 4.21 | 4.20 | 4.20 | 4.20 | 4.20 |
| 1,384.000 | 4.20 | 4.20 | 4.19 | 4.19 | 4.19 |
| 1,385.000 | 4.19 | 4.19 | 4.19 | 4.18 | 4.18 |
| 1,386.000 | 4.18 | 4.18 | 4.18 | 4.18 | 4.17 |
| 1,387.000 | 4.17 | 4.17 | 4.17 | 4.17 | 4.16 |
| 1,388.000 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 |
| 1,389.000 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
| 1,390.000 | 4.15 | 4.14 | 4.14 | 4.14 | 4.14 |
| 1,391.000 | 4.14 | 4.14 | 4.13 | 4.13 | 4.13 |
| 1,392.000 | 4.13 | 4.13 | 4.13 | 4.12 | 4.12 |
| 1,393.000 | 4.12 | 4.12 | 4.12 | 4.12 | 4.11 |
| 1,394.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 |
| 1,395.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| 1,396.000 | 4.10 | 4.09 | 4.09 | 4.09 | 4.09 |
| 1,397.000 | 4.09 | 4.09 | 4.09 | 4.08 | 4.08 |
| 1,398.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.07 |
| 1,399.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |
| 1,400.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 |
| 1,401.000 | 4.06 | 4.05 | 4.05 | 4.05 | 4.05 |
| 1,402.000 | 4.05 | 4.05 | 4.05 | 4.04 | 4.04 |
| 1,403.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.03 |
| 1,404.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 |
| 1,405.000 | 4.03 | 4.02 | 4.02 | 4.02 | 4.02 |
| 1,406.000 | 4.02 | 4.02 | 4.01 | 4.01 | 4.01 |
| 1,407.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.00 |
| 1,408.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 1,409.000 | 4.00 | 3.99 | 3.99 | 3.99 | 3.99 |
| 1,410.000 | 3.99 | 3.99 | 3.98 | 3.98 | 3.98 |
| 1,411.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.97 |
| 1,412.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 1,413.000 | 3.97 | 3.96 | 3.96 | 3.96 | 3.96 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,414.000 | 3.96 | 3.96 | 3.96 | 3.95 | 3.95 |
| 1,415.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 1,416.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| 1,417.000 | 3.94 | 3.94 | 3.93 | 3.93 | 3.93 |
| 1,418.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.92 |
| 1,419.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 1,420.000 | 3.92 | 3.91 | 3.91 | 3.91 | 3.91 |
| 1,421.000 | 3.91 | 3.91 | 3.91 | 3.90 | 3.90 |
| 1,422.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 1,423.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 1,424.000 | 3.89 | 3.89 | 3.88 | 3.88 | 3.88 |
| 1,425.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 1,426.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.87 |
| 1,427.000 | 3.87 | 3.87 | 3.86 | 3.86 | 3.86 |
| 1,428.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.85 |
| 1,429.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 1,430.000 | 3.85 | 3.85 | 3.84 | 3.84 | 3.84 |
| 1,431.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.83 |
| 1,432.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 1,433.000 | 3.83 | 3.83 | 3.82 | 3.82 | 3.82 |
| 1,434.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 1,435.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 1,436.000 | 3.81 | 3.81 | 3.80 | 3.80 | 3.80 |
| 1,437.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 1,438.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 1,439.000 | 3.79 | 3.79 | 3.79 | 3.78 | 3.78 |
| 1,440.000 | 3.78 | 3.72 | 3.66 | 3.61 | 3.55 |
| 1,441.000 | 3.49 | 3.43 | 3.37 | 3.31 | 3.25 |
| 1,442.000 | 3.19 | 3.14 | 3.08 | 3.02 | 2.96 |
| 1,443.000 | 2.90 | 2.84 | 2.78 | 2.73 | 2.67 |
| 1,444.000 | 2.61 | 2.55 | 2.49 | 2.43 | 2.38 |
| 1,445.000 | 2.32 | 2.26 | 2.20 | 2.14 | 2.08 |
| 1,446.000 | 2.03 | 1.97 | 1.91 | 1.85 | 1.79 |
| 1,447.000 | 1.74 | 1.68 | 1.62 | 1.56 | 1.50 |
| 1,448.000 | 1.44 | 1.39 | 1.33 | 1.27 | 1.21 |
| 1,449.000 | 1.15 | 1.10 | 1.04 | 0.98 | 0.92 |
| 1,450.000 | 0.87 | 0.81 | 0.75 | 0.69 | 0.63 |
| 1,451.000 | 0.58 | 0.52 | 0.46 | 0.40 | 0.35 |
| 1,452.000 | 0.29 | 0.23 | 0.17 | 0.12 | 0.06 |
| 1,453.000 | 0.00 | (N/A) | (N/A) | (N/A) | (N/A) |

| | |
|---|---|
| Peak Discharge | 58.25 ft³/s |
| Time to Peak | 1,155.000 min |
| Hydrograph Volume | 13.552 ac-ft |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 0.000 | 0.00 | 0.04 | 0.09 | 0.13 | 0.18 |
| 1.000 | 0.22 | 0.27 | 0.31 | 0.36 | 0.40 |
| 2.000 | 0.45 | 0.49 | 0.54 | 0.58 | 0.62 |
| 3.000 | 0.67 | 0.71 | 0.76 | 0.80 | 0.85 |
| 4.000 | 0.89 | 0.94 | 0.98 | 1.03 | 1.07 |
| 5.000 | 1.12 | 1.16 | 1.21 | 1.25 | 1.29 |
| 6.000 | 1.34 | 1.38 | 1.43 | 1.47 | 1.52 |
| 7.000 | 1.56 | 1.61 | 1.65 | 1.70 | 1.74 |
| 8.000 | 1.79 | 1.83 | 1.87 | 1.92 | 1.96 |
| 9.000 | 2.01 | 2.05 | 2.10 | 2.14 | 2.19 |
| 10.000 | 2.23 | 2.28 | 2.32 | 2.37 | 2.41 |
| 11.000 | 2.45 | 2.50 | 2.54 | 2.59 | 2.63 |
| 12.000 | 2.68 | 2.72 | 2.77 | 2.81 | 2.86 |
| 13.000 | 2.90 | 2.95 | 2.99 | 3.04 | 3.08 |
| 14.000 | 3.12 | 3.17 | 3.21 | 3.26 | 3.30 |
| 15.000 | 3.35 | 3.39 | 3.44 | 3.48 | 3.53 |
| 16.000 | 3.57 | 3.57 | 3.57 | 3.57 | 3.57 |
| 17.000 | 3.57 | 3.57 | 3.57 | 3.57 | 3.57 |
| 18.000 | 3.57 | 3.57 | 3.57 | 3.57 | 3.58 |
| 19.000 | 3.58 | 3.58 | 3.58 | 3.58 | 3.58 |
| 20.000 | 3.58 | 3.58 | 3.58 | 3.58 | 3.58 |
| 21.000 | 3.58 | 3.58 | 3.58 | 3.58 | 3.58 |
| 22.000 | 3.58 | 3.58 | 3.58 | 3.58 | 3.58 |
| 23.000 | 3.58 | 3.58 | 3.58 | 3.58 | 3.58 |
| 24.000 | 3.58 | 3.58 | 3.58 | 3.58 | 3.58 |
| 25.000 | 3.58 | 3.58 | 3.58 | 3.59 | 3.59 |
| 26.000 | 3.59 | 3.59 | 3.59 | 3.59 | 3.59 |
| 27.000 | 3.59 | 3.59 | 3.59 | 3.59 | 3.59 |
| 28.000 | 3.59 | 3.59 | 3.59 | 3.59 | 3.59 |
| 29.000 | 3.59 | 3.59 | 3.59 | 3.59 | 3.59 |
| 30.000 | 3.59 | 3.59 | 3.59 | 3.59 | 3.59 |
| 31.000 | 3.59 | 3.59 | 3.59 | 3.59 | 3.59 |
| 32.000 | 3.59 | 3.59 | 3.60 | 3.60 | 3.60 |
| 33.000 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| 34.000 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| 35.000 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| 36.000 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| 37.000 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 38.000 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| 39.000 | 3.61 | 3.61 | 3.61 | 3.61 | 3.61 |
| 40.000 | 3.61 | 3.61 | 3.61 | 3.61 | 3.61 |
| 41.000 | 3.61 | 3.61 | 3.61 | 3.61 | 3.61 |
| 42.000 | 3.61 | 3.61 | 3.61 | 3.61 | 3.61 |
| 43.000 | 3.61 | 3.61 | 3.61 | 3.61 | 3.61 |
| 44.000 | 3.61 | 3.61 | 3.61 | 3.61 | 3.61 |
| 45.000 | 3.61 | 3.61 | 3.61 | 3.62 | 3.62 |
| 46.000 | 3.62 | 3.62 | 3.62 | 3.62 | 3.62 |
| 47.000 | 3.62 | 3.62 | 3.62 | 3.62 | 3.62 |
| 48.000 | 3.62 | 3.62 | 3.62 | 3.62 | 3.62 |
| 49.000 | 3.62 | 3.62 | 3.62 | 3.62 | 3.62 |
| 50.000 | 3.62 | 3.62 | 3.62 | 3.62 | 3.62 |
| 51.000 | 3.62 | 3.62 | 3.62 | 3.62 | 3.62 |
| 52.000 | 3.62 | 3.63 | 3.63 | 3.63 | 3.63 |
| 53.000 | 3.63 | 3.63 | 3.63 | 3.63 | 3.63 |
| 54.000 | 3.63 | 3.63 | 3.63 | 3.63 | 3.63 |
| 55.000 | 3.63 | 3.63 | 3.63 | 3.63 | 3.63 |
| 56.000 | 3.63 | 3.63 | 3.63 | 3.63 | 3.63 |
| 57.000 | 3.63 | 3.63 | 3.63 | 3.63 | 3.63 |
| 58.000 | 3.63 | 3.63 | 3.63 | 3.64 | 3.64 |
| 59.000 | 3.64 | 3.64 | 3.64 | 3.64 | 3.64 |
| 60.000 | 3.64 | 3.64 | 3.64 | 3.64 | 3.64 |
| 61.000 | 3.64 | 3.64 | 3.64 | 3.64 | 3.64 |
| 62.000 | 3.64 | 3.64 | 3.64 | 3.64 | 3.64 |
| 63.000 | 3.64 | 3.64 | 3.64 | 3.64 | 3.64 |
| 64.000 | 3.64 | 3.64 | 3.64 | 3.64 | 3.64 |
| 65.000 | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 |
| 66.000 | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 |
| 67.000 | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 |
| 68.000 | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 |
| 69.000 | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 |
| 70.000 | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 |
| 71.000 | 3.65 | 3.65 | 3.66 | 3.66 | 3.66 |
| 72.000 | 3.66 | 3.66 | 3.66 | 3.66 | 3.66 |
| 73.000 | 3.66 | 3.66 | 3.66 | 3.66 | 3.66 |
| 74.000 | 3.66 | 3.66 | 3.66 | 3.66 | 3.66 |
| 75.000 | 3.66 | 3.66 | 3.66 | 3.66 | 3.66 |
| 76.000 | 3.66 | 3.66 | 3.66 | 3.66 | 3.66 |
| 77.000 | 3.66 | 3.66 | 3.66 | 3.67 | 3.67 |
| 78.000 | 3.67 | 3.67 | 3.67 | 3.67 | 3.67 |
| 79.000 | 3.67 | 3.67 | 3.67 | 3.67 | 3.67 |
| 80.000 | 3.67 | 3.67 | 3.67 | 3.67 | 3.67 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 81.000 | 3.67 | 3.67 | 3.67 | 3.67 | 3.67 |
| 82.000 | 3.67 | 3.67 | 3.67 | 3.67 | 3.67 |
| 83.000 | 3.67 | 3.67 | 3.67 | 3.67 | 3.67 |
| 84.000 | 3.68 | 3.68 | 3.68 | 3.68 | 3.68 |
| 85.000 | 3.68 | 3.68 | 3.68 | 3.68 | 3.68 |
| 86.000 | 3.68 | 3.68 | 3.68 | 3.68 | 3.68 |
| 87.000 | 3.68 | 3.68 | 3.68 | 3.68 | 3.68 |
| 88.000 | 3.68 | 3.68 | 3.68 | 3.68 | 3.68 |
| 89.000 | 3.68 | 3.68 | 3.68 | 3.68 | 3.68 |
| 90.000 | 3.68 | 3.69 | 3.69 | 3.69 | 3.69 |
| 91.000 | 3.69 | 3.69 | 3.69 | 3.69 | 3.69 |
| 92.000 | 3.69 | 3.69 | 3.69 | 3.69 | 3.69 |
| 93.000 | 3.69 | 3.69 | 3.69 | 3.69 | 3.69 |
| 94.000 | 3.69 | 3.69 | 3.69 | 3.69 | 3.69 |
| 95.000 | 3.69 | 3.69 | 3.69 | 3.69 | 3.69 |
| 96.000 | 3.69 | 3.69 | 3.70 | 3.70 | 3.70 |
| 97.000 | 3.70 | 3.70 | 3.70 | 3.70 | 3.70 |
| 98.000 | 3.70 | 3.70 | 3.70 | 3.70 | 3.70 |
| 99.000 | 3.70 | 3.70 | 3.70 | 3.70 | 3.70 |
| 100.000 | 3.70 | 3.70 | 3.70 | 3.70 | 3.70 |
| 101.000 | 3.70 | 3.70 | 3.70 | 3.70 | 3.70 |
| 102.000 | 3.70 | 3.70 | 3.71 | 3.71 | 3.71 |
| 103.000 | 3.71 | 3.71 | 3.71 | 3.71 | 3.71 |
| 104.000 | 3.71 | 3.71 | 3.71 | 3.71 | 3.71 |
| 105.000 | 3.71 | 3.71 | 3.71 | 3.71 | 3.71 |
| 106.000 | 3.71 | 3.71 | 3.71 | 3.71 | 3.71 |
| 107.000 | 3.71 | 3.71 | 3.71 | 3.71 | 3.71 |
| 108.000 | 3.71 | 3.71 | 3.72 | 3.72 | 3.72 |
| 109.000 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 |
| 110.000 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 |
| 111.000 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 |
| 112.000 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 |
| 113.000 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 |
| 114.000 | 3.72 | 3.72 | 3.73 | 3.73 | 3.73 |
| 115.000 | 3.73 | 3.73 | 3.73 | 3.73 | 3.73 |
| 116.000 | 3.73 | 3.73 | 3.73 | 3.73 | 3.73 |
| 117.000 | 3.73 | 3.73 | 3.73 | 3.73 | 3.73 |
| 118.000 | 3.73 | 3.73 | 3.73 | 3.73 | 3.73 |
| 119.000 | 3.73 | 3.73 | 3.73 | 3.73 | 3.73 |
| 120.000 | 3.73 | 3.73 | 3.74 | 3.74 | 3.74 |
| 121.000 | 3.74 | 3.74 | 3.74 | 3.74 | 3.74 |
| 122.000 | 3.74 | 3.74 | 3.74 | 3.74 | 3.74 |
| 123.000 | 3.74 | 3.74 | 3.74 | 3.74 | 3.74 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 124.000 | 3.74 | 3.74 | 3.74 | 3.74 | 3.74 |
| 125.000 | 3.74 | 3.74 | 3.74 | 3.74 | 3.74 |
| 126.000 | 3.74 | 3.74 | 3.75 | 3.75 | 3.75 |
| 127.000 | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 |
| 128.000 | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 |
| 129.000 | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 |
| 130.000 | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 |
| 131.000 | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 |
| 132.000 | 3.75 | 3.76 | 3.76 | 3.76 | 3.76 |
| 133.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 134.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 135.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 136.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 137.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 138.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 139.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 140.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 141.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 142.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 143.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.78 |
| 144.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 145.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 146.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 147.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 148.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 149.000 | 3.78 | 3.78 | 3.79 | 3.79 | 3.79 |
| 150.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 151.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 152.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 153.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 154.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 |
| 155.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 156.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 157.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 158.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 159.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 160.000 | 3.80 | 3.80 | 3.80 | 3.81 | 3.81 |
| 161.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 162.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 163.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 164.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 165.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 166.000 | 3.81 | 3.82 | 3.82 | 3.82 | 3.82 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 167.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 168.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 169.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 170.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 171.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.83 |
| 172.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 173.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 174.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 175.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 176.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 177.000 | 3.83 | 3.84 | 3.84 | 3.84 | 3.84 |
| 178.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| 179.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| 180.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| 181.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| 182.000 | 3.84 | 3.84 | 3.84 | 3.85 | 3.85 |
| 183.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 184.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 185.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 186.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 187.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 188.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |
| 189.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |
| 190.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |
| 191.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |
| 192.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |
| 193.000 | 3.86 | 3.86 | 3.87 | 3.87 | 3.87 |
| 194.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.87 |
| 195.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.87 |
| 196.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.87 |
| 197.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.87 |
| 198.000 | 3.87 | 3.87 | 3.87 | 3.88 | 3.88 |
| 199.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 200.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 201.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 202.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 203.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 204.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 205.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 206.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 207.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 208.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 209.000 | 3.89 | 3.90 | 3.90 | 3.90 | 3.90 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 210.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 211.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 212.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 213.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 214.000 | 3.90 | 3.90 | 3.91 | 3.91 | 3.91 |
| 215.000 | 3.91 | 3.91 | 3.91 | 3.91 | 3.91 |
| 216.000 | 3.91 | 3.91 | 3.91 | 3.91 | 3.91 |
| 217.000 | 3.91 | 3.91 | 3.91 | 3.91 | 3.91 |
| 218.000 | 3.91 | 3.91 | 3.91 | 3.91 | 3.91 |
| 219.000 | 3.91 | 3.91 | 3.92 | 3.92 | 3.92 |
| 220.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 221.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 222.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 223.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 224.000 | 3.92 | 3.92 | 3.92 | 3.93 | 3.93 |
| 225.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.93 |
| 226.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.93 |
| 227.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.93 |
| 228.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.93 |
| 229.000 | 3.93 | 3.93 | 3.93 | 3.94 | 3.94 |
| 230.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| 231.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| 232.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| 233.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| 234.000 | 3.94 | 3.94 | 3.94 | 3.95 | 3.95 |
| 235.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 236.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 237.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 238.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 239.000 | 3.95 | 3.95 | 3.95 | 3.96 | 3.96 |
| 240.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 241.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 242.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 243.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 244.000 | 3.96 | 3.96 | 3.96 | 3.97 | 3.97 |
| 245.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 246.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 247.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 248.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 249.000 | 3.97 | 3.97 | 3.98 | 3.98 | 3.98 |
| 250.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.98 |
| 251.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.98 |
| 252.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.98 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 253.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.98 |
| 254.000 | 3.98 | 3.99 | 3.99 | 3.99 | 3.99 |
| 255.000 | 3.99 | 3.99 | 3.99 | 3.99 | 3.99 |
| 256.000 | 3.99 | 3.99 | 3.99 | 3.99 | 3.99 |
| 257.000 | 3.99 | 3.99 | 3.99 | 3.99 | 3.99 |
| 258.000 | 3.99 | 3.99 | 3.99 | 3.99 | 3.99 |
| 259.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 260.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 261.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 262.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 263.000 | 4.00 | 4.00 | 4.00 | 4.00 | 4.01 |
| 264.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.01 |
| 265.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.01 |
| 266.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.01 |
| 267.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.01 |
| 268.000 | 4.01 | 4.01 | 4.01 | 4.02 | 4.02 |
| 269.000 | 4.02 | 4.02 | 4.02 | 4.02 | 4.02 |
| 270.000 | 4.02 | 4.02 | 4.02 | 4.02 | 4.02 |
| 271.000 | 4.02 | 4.02 | 4.02 | 4.02 | 4.02 |
| 272.000 | 4.02 | 4.02 | 4.02 | 4.02 | 4.02 |
| 273.000 | 4.02 | 4.02 | 4.03 | 4.03 | 4.03 |
| 274.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 |
| 275.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 |
| 276.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 |
| 277.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 |
| 278.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 |
| 279.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 |
| 280.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 |
| 281.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 |
| 282.000 | 4.04 | 4.04 | 4.04 | 4.05 | 4.05 |
| 283.000 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 |
| 284.000 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 |
| 285.000 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 |
| 286.000 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 |
| 287.000 | 4.05 | 4.06 | 4.06 | 4.06 | 4.06 |
| 288.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 |
| 289.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 |
| 290.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 |
| 291.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.07 |
| 292.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |
| 293.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |
| 294.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |
| 295.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 296.000 | 4.07 | 4.07 | 4.08 | 4.08 | 4.08 |
| 297.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.08 |
| 298.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.08 |
| 299.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.08 |
| 300.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.09 |
| 301.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 302.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 303.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 304.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 305.000 | 4.09 | 4.10 | 4.10 | 4.10 | 4.10 |
| 306.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| 307.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| 308.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| 309.000 | 4.10 | 4.10 | 4.10 | 4.11 | 4.11 |
| 310.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 |
| 311.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 |
| 312.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 |
| 313.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 |
| 314.000 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 |
| 315.000 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 |
| 316.000 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 |
| 317.000 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 |
| 318.000 | 4.12 | 4.12 | 4.13 | 4.13 | 4.13 |
| 319.000 | 4.13 | 4.13 | 4.13 | 4.13 | 4.13 |
| 320.000 | 4.13 | 4.13 | 4.13 | 4.13 | 4.13 |
| 321.000 | 4.13 | 4.13 | 4.13 | 4.13 | 4.13 |
| 322.000 | 4.13 | 4.13 | 4.13 | 4.13 | 4.14 |
| 323.000 | 4.14 | 4.14 | 4.14 | 4.14 | 4.14 |
| 324.000 | 4.14 | 4.14 | 4.14 | 4.14 | 4.14 |
| 325.000 | 4.14 | 4.14 | 4.14 | 4.14 | 4.14 |
| 326.000 | 4.14 | 4.14 | 4.14 | 4.14 | 4.14 |
| 327.000 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
| 328.000 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
| 329.000 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
| 330.000 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
| 331.000 | 4.15 | 4.15 | 4.16 | 4.16 | 4.16 |
| 332.000 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 |
| 333.000 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 |
| 334.000 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 |
| 335.000 | 4.16 | 4.16 | 4.16 | 4.17 | 4.17 |
| 336.000 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 |
| 337.000 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 |
| 338.000 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 339.000 | 4.17 | 4.17 | 4.17 | 4.17 | 4.18 |
| 340.000 | 4.18 | 4.18 | 4.18 | 4.18 | 4.18 |
| 341.000 | 4.18 | 4.18 | 4.18 | 4.18 | 4.18 |
| 342.000 | 4.18 | 4.18 | 4.18 | 4.18 | 4.18 |
| 343.000 | 4.18 | 4.18 | 4.18 | 4.18 | 4.18 |
| 344.000 | 4.19 | 4.19 | 4.19 | 4.19 | 4.19 |
| 345.000 | 4.19 | 4.19 | 4.19 | 4.19 | 4.19 |
| 346.000 | 4.19 | 4.19 | 4.19 | 4.19 | 4.19 |
| 347.000 | 4.19 | 4.19 | 4.19 | 4.19 | 4.19 |
| 348.000 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 |
| 349.000 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 |
| 350.000 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 |
| 351.000 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 |
| 352.000 | 4.20 | 4.21 | 4.21 | 4.21 | 4.21 |
| 353.000 | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 |
| 354.000 | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 |
| 355.000 | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 |
| 356.000 | 4.21 | 4.22 | 4.22 | 4.22 | 4.22 |
| 357.000 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 |
| 358.000 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 |
| 359.000 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 |
| 360.000 | 4.22 | 4.23 | 4.23 | 4.23 | 4.23 |
| 361.000 | 4.23 | 4.23 | 4.23 | 4.23 | 4.23 |
| 362.000 | 4.23 | 4.23 | 4.23 | 4.23 | 4.23 |
| 363.000 | 4.23 | 4.23 | 4.23 | 4.23 | 4.23 |
| 364.000 | 4.23 | 4.24 | 4.24 | 4.24 | 4.24 |
| 365.000 | 4.24 | 4.24 | 4.24 | 4.24 | 4.24 |
| 366.000 | 4.24 | 4.24 | 4.24 | 4.24 | 4.24 |
| 367.000 | 4.24 | 4.24 | 4.24 | 4.24 | 4.24 |
| 368.000 | 4.24 | 4.25 | 4.25 | 4.25 | 4.25 |
| 369.000 | 4.25 | 4.25 | 4.25 | 4.25 | 4.25 |
| 370.000 | 4.25 | 4.25 | 4.25 | 4.25 | 4.25 |
| 371.000 | 4.25 | 4.25 | 4.25 | 4.25 | 4.25 |
| 372.000 | 4.25 | 4.26 | 4.26 | 4.26 | 4.26 |
| 373.000 | 4.26 | 4.26 | 4.26 | 4.26 | 4.26 |
| 374.000 | 4.26 | 4.26 | 4.26 | 4.26 | 4.26 |
| 375.000 | 4.26 | 4.26 | 4.26 | 4.26 | 4.26 |
| 376.000 | 4.26 | 4.27 | 4.27 | 4.27 | 4.27 |
| 377.000 | 4.27 | 4.27 | 4.27 | 4.27 | 4.27 |
| 378.000 | 4.27 | 4.27 | 4.27 | 4.27 | 4.27 |
| 379.000 | 4.27 | 4.27 | 4.27 | 4.27 | 4.27 |
| 380.000 | 4.28 | 4.28 | 4.28 | 4.28 | 4.28 |
| 381.000 | 4.28 | 4.28 | 4.28 | 4.28 | 4.28 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 382.000 | 4.28 | 4.28 | 4.28 | 4.28 | 4.28 |
| 383.000 | 4.28 | 4.28 | 4.28 | 4.28 | 4.29 |
| 384.000 | 4.29 | 4.29 | 4.29 | 4.29 | 4.29 |
| 385.000 | 4.29 | 4.29 | 4.29 | 4.29 | 4.29 |
| 386.000 | 4.29 | 4.29 | 4.29 | 4.29 | 4.29 |
| 387.000 | 4.29 | 4.29 | 4.29 | 4.29 | 4.30 |
| 388.000 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 |
| 389.000 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 |
| 390.000 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 |
| 391.000 | 4.30 | 4.30 | 4.30 | 4.31 | 4.31 |
| 392.000 | 4.31 | 4.31 | 4.31 | 4.31 | 4.31 |
| 393.000 | 4.31 | 4.31 | 4.31 | 4.31 | 4.31 |
| 394.000 | 4.31 | 4.31 | 4.31 | 4.31 | 4.31 |
| 395.000 | 4.31 | 4.31 | 4.32 | 4.32 | 4.32 |
| 396.000 | 4.32 | 4.32 | 4.32 | 4.32 | 4.32 |
| 397.000 | 4.32 | 4.32 | 4.32 | 4.32 | 4.32 |
| 398.000 | 4.32 | 4.32 | 4.32 | 4.32 | 4.32 |
| 399.000 | 4.33 | 4.33 | 4.33 | 4.33 | 4.33 |
| 400.000 | 4.33 | 4.33 | 4.33 | 4.33 | 4.33 |
| 401.000 | 4.33 | 4.33 | 4.33 | 4.33 | 4.33 |
| 402.000 | 4.33 | 4.33 | 4.33 | 4.33 | 4.34 |
| 403.000 | 4.34 | 4.34 | 4.34 | 4.34 | 4.34 |
| 404.000 | 4.34 | 4.34 | 4.34 | 4.34 | 4.34 |
| 405.000 | 4.34 | 4.34 | 4.34 | 4.34 | 4.34 |
| 406.000 | 4.34 | 4.34 | 4.34 | 4.35 | 4.35 |
| 407.000 | 4.35 | 4.35 | 4.35 | 4.35 | 4.35 |
| 408.000 | 4.35 | 4.35 | 4.35 | 4.35 | 4.35 |
| 409.000 | 4.35 | 4.35 | 4.35 | 4.35 | 4.35 |
| 410.000 | 4.35 | 4.36 | 4.36 | 4.36 | 4.36 |
| 411.000 | 4.36 | 4.36 | 4.36 | 4.36 | 4.36 |
| 412.000 | 4.36 | 4.36 | 4.36 | 4.36 | 4.36 |
| 413.000 | 4.36 | 4.36 | 4.36 | 4.36 | 4.37 |
| 414.000 | 4.37 | 4.37 | 4.37 | 4.37 | 4.37 |
| 415.000 | 4.37 | 4.37 | 4.37 | 4.37 | 4.37 |
| 416.000 | 4.37 | 4.37 | 4.37 | 4.37 | 4.37 |
| 417.000 | 4.37 | 4.37 | 4.38 | 4.38 | 4.38 |
| 418.000 | 4.38 | 4.38 | 4.38 | 4.38 | 4.38 |
| 419.000 | 4.38 | 4.38 | 4.38 | 4.38 | 4.38 |
| 420.000 | 4.38 | 4.38 | 4.38 | 4.38 | 4.38 |
| 421.000 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 |
| 422.000 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 |
| 423.000 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 |
| 424.000 | 4.39 | 4.39 | 4.39 | 4.40 | 4.40 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 425.000 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| 426.000 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| 427.000 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| 428.000 | 4.40 | 4.41 | 4.41 | 4.41 | 4.41 |
| 429.000 | 4.41 | 4.41 | 4.41 | 4.41 | 4.41 |
| 430.000 | 4.41 | 4.41 | 4.41 | 4.41 | 4.41 |
| 431.000 | 4.41 | 4.41 | 4.41 | 4.41 | 4.42 |
| 432.000 | 4.42 | 4.42 | 4.42 | 4.42 | 4.42 |
| 433.000 | 4.42 | 4.42 | 4.42 | 4.42 | 4.42 |
| 434.000 | 4.42 | 4.42 | 4.42 | 4.42 | 4.42 |
| 435.000 | 4.42 | 4.43 | 4.43 | 4.43 | 4.43 |
| 436.000 | 4.43 | 4.43 | 4.43 | 4.43 | 4.43 |
| 437.000 | 4.43 | 4.43 | 4.43 | 4.43 | 4.43 |
| 438.000 | 4.43 | 4.43 | 4.43 | 4.44 | 4.44 |
| 439.000 | 4.44 | 4.44 | 4.44 | 4.44 | 4.44 |
| 440.000 | 4.44 | 4.44 | 4.44 | 4.44 | 4.44 |
| 441.000 | 4.44 | 4.44 | 4.44 | 4.44 | 4.44 |
| 442.000 | 4.44 | 4.45 | 4.45 | 4.45 | 4.45 |
| 443.000 | 4.45 | 4.45 | 4.45 | 4.45 | 4.45 |
| 444.000 | 4.45 | 4.45 | 4.45 | 4.45 | 4.45 |
| 445.000 | 4.45 | 4.45 | 4.45 | 4.46 | 4.46 |
| 446.000 | 4.46 | 4.46 | 4.46 | 4.46 | 4.46 |
| 447.000 | 4.46 | 4.46 | 4.46 | 4.46 | 4.46 |
| 448.000 | 4.46 | 4.46 | 4.46 | 4.46 | 4.46 |
| 449.000 | 4.47 | 4.47 | 4.47 | 4.47 | 4.47 |
| 450.000 | 4.47 | 4.47 | 4.47 | 4.47 | 4.47 |
| 451.000 | 4.47 | 4.47 | 4.47 | 4.47 | 4.47 |
| 452.000 | 4.47 | 4.47 | 4.48 | 4.48 | 4.48 |
| 453.000 | 4.48 | 4.48 | 4.48 | 4.48 | 4.48 |
| 454.000 | 4.48 | 4.48 | 4.48 | 4.48 | 4.48 |
| 455.000 | 4.48 | 4.48 | 4.48 | 4.49 | 4.49 |
| 456.000 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 |
| 457.000 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 |
| 458.000 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 |
| 459.000 | 4.50 | 4.50 | 4.50 | 4.50 | 4.50 |
| 460.000 | 4.50 | 4.50 | 4.50 | 4.50 | 4.50 |
| 461.000 | 4.50 | 4.50 | 4.50 | 4.50 | 4.50 |
| 462.000 | 4.50 | 4.50 | 4.51 | 4.51 | 4.51 |
| 463.000 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 |
| 464.000 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 |
| 465.000 | 4.51 | 4.51 | 4.51 | 4.52 | 4.52 |
| 466.000 | 4.52 | 4.52 | 4.52 | 4.52 | 4.52 |
| 467.000 | 4.52 | 4.52 | 4.52 | 4.52 | 4.52 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 468.000 | 4.52 | 4.52 | 4.52 | 4.52 | 4.53 |
| 469.000 | 4.53 | 4.53 | 4.53 | 4.53 | 4.53 |
| 470.000 | 4.53 | 4.53 | 4.53 | 4.53 | 4.53 |
| 471.000 | 4.53 | 4.53 | 4.53 | 4.53 | 4.53 |
| 472.000 | 4.53 | 4.54 | 4.54 | 4.54 | 4.54 |
| 473.000 | 4.54 | 4.54 | 4.54 | 4.54 | 4.54 |
| 474.000 | 4.54 | 4.54 | 4.54 | 4.54 | 4.54 |
| 475.000 | 4.54 | 4.54 | 4.55 | 4.55 | 4.55 |
| 476.000 | 4.55 | 4.55 | 4.55 | 4.55 | 4.55 |
| 477.000 | 4.55 | 4.55 | 4.55 | 4.55 | 4.55 |
| 478.000 | 4.55 | 4.55 | 4.55 | 4.56 | 4.56 |
| 479.000 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 |
| 480.000 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 |
| 481.000 | 4.56 | 4.56 | 4.56 | 4.57 | 4.57 |
| 482.000 | 4.57 | 4.57 | 4.57 | 4.57 | 4.57 |
| 483.000 | 4.57 | 4.57 | 4.57 | 4.57 | 4.57 |
| 484.000 | 4.57 | 4.57 | 4.57 | 4.57 | 4.58 |
| 485.000 | 4.58 | 4.58 | 4.58 | 4.58 | 4.58 |
| 486.000 | 4.58 | 4.58 | 4.58 | 4.58 | 4.58 |
| 487.000 | 4.58 | 4.58 | 4.58 | 4.58 | 4.58 |
| 488.000 | 4.59 | 4.59 | 4.59 | 4.59 | 4.59 |
| 489.000 | 4.59 | 4.59 | 4.59 | 4.59 | 4.59 |
| 490.000 | 4.59 | 4.59 | 4.59 | 4.59 | 4.59 |
| 491.000 | 4.60 | 4.60 | 4.60 | 4.60 | 4.60 |
| 492.000 | 4.60 | 4.60 | 4.60 | 4.60 | 4.60 |
| 493.000 | 4.60 | 4.60 | 4.60 | 4.60 | 4.60 |
| 494.000 | 4.60 | 4.61 | 4.61 | 4.61 | 4.61 |
| 495.000 | 4.61 | 4.61 | 4.61 | 4.61 | 4.61 |
| 496.000 | 4.61 | 4.61 | 4.61 | 4.61 | 4.61 |
| 497.000 | 4.61 | 4.62 | 4.62 | 4.62 | 4.62 |
| 498.000 | 4.62 | 4.62 | 4.62 | 4.62 | 4.62 |
| 499.000 | 4.62 | 4.62 | 4.62 | 4.62 | 4.62 |
| 500.000 | 4.62 | 4.63 | 4.63 | 4.63 | 4.63 |
| 501.000 | 4.63 | 4.63 | 4.63 | 4.63 | 4.63 |
| 502.000 | 4.63 | 4.63 | 4.63 | 4.63 | 4.63 |
| 503.000 | 4.63 | 4.63 | 4.64 | 4.64 | 4.64 |
| 504.000 | 4.64 | 4.64 | 4.64 | 4.64 | 4.64 |
| 505.000 | 4.64 | 4.64 | 4.64 | 4.64 | 4.64 |
| 506.000 | 4.64 | 4.64 | 4.65 | 4.65 | 4.65 |
| 507.000 | 4.65 | 4.65 | 4.65 | 4.65 | 4.65 |
| 508.000 | 4.65 | 4.65 | 4.65 | 4.65 | 4.65 |
| 509.000 | 4.65 | 4.66 | 4.66 | 4.66 | 4.66 |
| 510.000 | 4.66 | 4.66 | 4.66 | 4.66 | 4.66 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 511.000 | 4.66 | 4.66 | 4.66 | 4.66 | 4.66 |
| 512.000 | 4.66 | 4.67 | 4.67 | 4.67 | 4.67 |
| 513.000 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 |
| 514.000 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 |
| 515.000 | 4.67 | 4.68 | 4.68 | 4.68 | 4.68 |
| 516.000 | 4.68 | 4.68 | 4.68 | 4.68 | 4.68 |
| 517.000 | 4.68 | 4.68 | 4.68 | 4.68 | 4.68 |
| 518.000 | 4.68 | 4.69 | 4.69 | 4.69 | 4.69 |
| 519.000 | 4.69 | 4.69 | 4.69 | 4.69 | 4.69 |
| 520.000 | 4.69 | 4.69 | 4.69 | 4.69 | 4.69 |
| 521.000 | 4.70 | 4.70 | 4.70 | 4.70 | 4.70 |
| 522.000 | 4.70 | 4.70 | 4.70 | 4.70 | 4.70 |
| 523.000 | 4.70 | 4.70 | 4.70 | 4.70 | 4.70 |
| 524.000 | 4.71 | 4.71 | 4.71 | 4.71 | 4.71 |
| 525.000 | 4.71 | 4.71 | 4.71 | 4.71 | 4.71 |
| 526.000 | 4.71 | 4.71 | 4.71 | 4.71 | 4.72 |
| 527.000 | 4.72 | 4.72 | 4.72 | 4.72 | 4.72 |
| 528.000 | 4.72 | 4.72 | 4.72 | 4.72 | 4.72 |
| 529.000 | 4.72 | 4.72 | 4.72 | 4.73 | 4.73 |
| 530.000 | 4.73 | 4.73 | 4.73 | 4.73 | 4.73 |
| 531.000 | 4.73 | 4.73 | 4.73 | 4.73 | 4.73 |
| 532.000 | 4.73 | 4.73 | 4.74 | 4.74 | 4.74 |
| 533.000 | 4.74 | 4.74 | 4.74 | 4.74 | 4.74 |
| 534.000 | 4.74 | 4.74 | 4.74 | 4.74 | 4.74 |
| 535.000 | 4.74 | 4.75 | 4.75 | 4.75 | 4.75 |
| 536.000 | 4.75 | 4.75 | 4.75 | 4.75 | 4.75 |
| 537.000 | 4.75 | 4.75 | 4.75 | 4.75 | 4.75 |
| 538.000 | 4.76 | 4.76 | 4.76 | 4.76 | 4.76 |
| 539.000 | 4.76 | 4.76 | 4.76 | 4.76 | 4.76 |
| 540.000 | 4.76 | 4.76 | 4.76 | 4.77 | 4.77 |
| 541.000 | 4.77 | 4.77 | 4.77 | 4.77 | 4.77 |
| 542.000 | 4.77 | 4.77 | 4.77 | 4.77 | 4.77 |
| 543.000 | 4.77 | 4.78 | 4.78 | 4.78 | 4.78 |
| 544.000 | 4.78 | 4.78 | 4.78 | 4.78 | 4.78 |
| 545.000 | 4.78 | 4.78 | 4.78 | 4.78 | 4.79 |
| 546.000 | 4.79 | 4.79 | 4.79 | 4.79 | 4.79 |
| 547.000 | 4.79 | 4.79 | 4.79 | 4.79 | 4.79 |
| 548.000 | 4.79 | 4.79 | 4.80 | 4.80 | 4.80 |
| 549.000 | 4.80 | 4.80 | 4.80 | 4.80 | 4.80 |
| 550.000 | 4.80 | 4.80 | 4.80 | 4.80 | 4.80 |
| 551.000 | 4.81 | 4.81 | 4.81 | 4.81 | 4.81 |
| 552.000 | 4.81 | 4.81 | 4.81 | 4.81 | 4.81 |
| 553.000 | 4.81 | 4.81 | 4.81 | 4.82 | 4.82 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 554.000 | 4.82 | 4.82 | 4.82 | 4.82 | 4.82 |
| 555.000 | 4.82 | 4.82 | 4.82 | 4.82 | 4.82 |
| 556.000 | 4.82 | 4.83 | 4.83 | 4.83 | 4.83 |
| 557.000 | 4.83 | 4.83 | 4.83 | 4.83 | 4.83 |
| 558.000 | 4.83 | 4.83 | 4.83 | 4.83 | 4.84 |
| 559.000 | 4.84 | 4.84 | 4.84 | 4.84 | 4.84 |
| 560.000 | 4.84 | 4.84 | 4.84 | 4.84 | 4.84 |
| 561.000 | 4.84 | 4.84 | 4.85 | 4.85 | 4.85 |
| 562.000 | 4.85 | 4.85 | 4.85 | 4.85 | 4.85 |
| 563.000 | 4.85 | 4.85 | 4.85 | 4.85 | 4.86 |
| 564.000 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 |
| 565.000 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 |
| 566.000 | 4.86 | 4.86 | 4.87 | 4.87 | 4.87 |
| 567.000 | 4.87 | 4.87 | 4.87 | 4.87 | 4.87 |
| 568.000 | 4.87 | 4.87 | 4.87 | 4.87 | 4.88 |
| 569.000 | 4.88 | 4.88 | 4.88 | 4.88 | 4.88 |
| 570.000 | 4.88 | 4.88 | 4.88 | 4.88 | 4.88 |
| 571.000 | 4.88 | 4.88 | 4.89 | 4.89 | 4.89 |
| 572.000 | 4.89 | 4.89 | 4.89 | 4.89 | 4.89 |
| 573.000 | 4.89 | 4.89 | 4.89 | 4.89 | 4.90 |
| 574.000 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 |
| 575.000 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 |
| 576.000 | 4.90 | 4.91 | 4.91 | 4.91 | 4.91 |
| 577.000 | 4.91 | 4.91 | 4.91 | 4.91 | 4.91 |
| 578.000 | 4.91 | 4.91 | 4.91 | 4.92 | 4.92 |
| 579.000 | 4.92 | 4.92 | 4.92 | 4.92 | 4.92 |
| 580.000 | 4.92 | 4.92 | 4.92 | 4.92 | 4.92 |
| 581.000 | 4.93 | 4.93 | 4.93 | 4.93 | 4.93 |
| 582.000 | 4.93 | 4.93 | 4.93 | 4.93 | 4.93 |
| 583.000 | 4.93 | 4.93 | 4.94 | 4.94 | 4.94 |
| 584.000 | 4.94 | 4.94 | 4.94 | 4.94 | 4.94 |
| 585.000 | 4.94 | 4.94 | 4.94 | 4.94 | 4.95 |
| 586.000 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 |
| 587.000 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 |
| 588.000 | 4.95 | 4.96 | 4.96 | 4.96 | 4.96 |
| 589.000 | 4.96 | 4.96 | 4.96 | 4.96 | 4.96 |
| 590.000 | 4.96 | 4.96 | 4.96 | 4.97 | 4.97 |
| 591.000 | 4.97 | 4.97 | 4.97 | 4.97 | 4.97 |
| 592.000 | 4.97 | 4.97 | 4.97 | 4.97 | 4.98 |
| 593.000 | 4.98 | 4.98 | 4.98 | 4.98 | 4.98 |
| 594.000 | 4.98 | 4.98 | 4.98 | 4.98 | 4.98 |
| 595.000 | 4.98 | 4.99 | 4.99 | 4.99 | 4.99 |
| 596.000 | 4.99 | 4.99 | 4.99 | 4.99 | 4.99 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 597.000 | 4.99 | 4.99 | 4.99 | 5.00 | 5.00 |
| 598.000 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| 599.000 | 5.00 | 5.00 | 5.00 | 5.00 | 5.01 |
| 600.000 | 5.01 | 5.01 | 5.01 | 5.01 | 5.01 |
| 601.000 | 5.01 | 5.01 | 5.01 | 5.01 | 5.01 |
| 602.000 | 5.01 | 5.02 | 5.02 | 5.02 | 5.02 |
| 603.000 | 5.02 | 5.02 | 5.02 | 5.02 | 5.02 |
| 604.000 | 5.02 | 5.02 | 5.03 | 5.03 | 5.03 |
| 605.000 | 5.03 | 5.03 | 5.03 | 5.03 | 5.03 |
| 606.000 | 5.03 | 5.03 | 5.03 | 5.04 | 5.04 |
| 607.000 | 5.04 | 5.04 | 5.04 | 5.04 | 5.04 |
| 608.000 | 5.04 | 5.04 | 5.04 | 5.04 | 5.05 |
| 609.000 | 5.05 | 5.05 | 5.05 | 5.05 | 5.05 |
| 610.000 | 5.05 | 5.05 | 5.05 | 5.05 | 5.05 |
| 611.000 | 5.06 | 5.06 | 5.06 | 5.06 | 5.06 |
| 612.000 | 5.06 | 5.06 | 5.06 | 5.06 | 5.06 |
| 613.000 | 5.06 | 5.06 | 5.07 | 5.07 | 5.07 |
| 614.000 | 5.07 | 5.07 | 5.07 | 5.07 | 5.07 |
| 615.000 | 5.07 | 5.07 | 5.08 | 5.08 | 5.08 |
| 616.000 | 5.08 | 5.08 | 5.08 | 5.08 | 5.08 |
| 617.000 | 5.08 | 5.08 | 5.08 | 5.09 | 5.09 |
| 618.000 | 5.09 | 5.09 | 5.09 | 5.09 | 5.09 |
| 619.000 | 5.09 | 5.09 | 5.09 | 5.09 | 5.10 |
| 620.000 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 |
| 621.000 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 |
| 622.000 | 5.11 | 5.11 | 5.11 | 5.11 | 5.11 |
| 623.000 | 5.11 | 5.11 | 5.11 | 5.11 | 5.11 |
| 624.000 | 5.11 | 5.12 | 5.12 | 5.12 | 5.12 |
| 625.000 | 5.12 | 5.12 | 5.12 | 5.12 | 5.12 |
| 626.000 | 5.12 | 5.13 | 5.13 | 5.13 | 5.13 |
| 627.000 | 5.13 | 5.13 | 5.13 | 5.13 | 5.13 |
| 628.000 | 5.13 | 5.13 | 5.14 | 5.14 | 5.14 |
| 629.000 | 5.14 | 5.14 | 5.14 | 5.14 | 5.14 |
| 630.000 | 5.14 | 5.14 | 5.14 | 5.15 | 5.15 |
| 631.000 | 5.15 | 5.15 | 5.15 | 5.15 | 5.15 |
| 632.000 | 5.15 | 5.15 | 5.15 | 5.16 | 5.16 |
| 633.000 | 5.16 | 5.16 | 5.16 | 5.16 | 5.16 |
| 634.000 | 5.16 | 5.16 | 5.16 | 5.17 | 5.17 |
| 635.000 | 5.17 | 5.17 | 5.17 | 5.17 | 5.17 |
| 636.000 | 5.17 | 5.17 | 5.17 | 5.17 | 5.18 |
| 637.000 | 5.18 | 5.18 | 5.18 | 5.18 | 5.18 |
| 638.000 | 5.18 | 5.18 | 5.18 | 5.18 | 5.19 |
| 639.000 | 5.19 | 5.19 | 5.19 | 5.19 | 5.19 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 640.000 | 5.19 | 5.19 | 5.19 | 5.19 | 5.20 |
| 641.000 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 |
| 642.000 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 |
| 643.000 | 5.21 | 5.21 | 5.21 | 5.21 | 5.21 |
| 644.000 | 5.21 | 5.21 | 5.21 | 5.21 | 5.21 |
| 645.000 | 5.22 | 5.22 | 5.22 | 5.22 | 5.22 |
| 646.000 | 5.22 | 5.22 | 5.22 | 5.22 | 5.22 |
| 647.000 | 5.23 | 5.23 | 5.23 | 5.23 | 5.23 |
| 648.000 | 5.23 | 5.23 | 5.23 | 5.23 | 5.23 |
| 649.000 | 5.24 | 5.24 | 5.24 | 5.24 | 5.24 |
| 650.000 | 5.24 | 5.24 | 5.24 | 5.24 | 5.24 |
| 651.000 | 5.25 | 5.25 | 5.25 | 5.25 | 5.25 |
| 652.000 | 5.25 | 5.25 | 5.25 | 5.25 | 5.26 |
| 653.000 | 5.26 | 5.26 | 5.26 | 5.26 | 5.26 |
| 654.000 | 5.26 | 5.26 | 5.26 | 5.26 | 5.27 |
| 655.000 | 5.27 | 5.27 | 5.27 | 5.27 | 5.27 |
| 656.000 | 5.27 | 5.27 | 5.27 | 5.27 | 5.28 |
| 657.000 | 5.28 | 5.28 | 5.28 | 5.28 | 5.28 |
| 658.000 | 5.28 | 5.28 | 5.28 | 5.28 | 5.29 |
| 659.000 | 5.29 | 5.29 | 5.29 | 5.29 | 5.29 |
| 660.000 | 5.29 | 5.29 | 5.29 | 5.30 | 5.30 |
| 661.000 | 5.30 | 5.30 | 5.30 | 5.30 | 5.30 |
| 662.000 | 5.30 | 5.30 | 5.30 | 5.31 | 5.31 |
| 663.000 | 5.31 | 5.31 | 5.31 | 5.31 | 5.31 |
| 664.000 | 5.31 | 5.31 | 5.31 | 5.32 | 5.32 |
| 665.000 | 5.32 | 5.32 | 5.32 | 5.32 | 5.32 |
| 666.000 | 5.32 | 5.32 | 5.33 | 5.33 | 5.33 |
| 667.000 | 5.33 | 5.33 | 5.33 | 5.33 | 5.33 |
| 668.000 | 5.33 | 5.34 | 5.34 | 5.34 | 5.34 |
| 669.000 | 5.34 | 5.34 | 5.34 | 5.34 | 5.34 |
| 670.000 | 5.34 | 5.35 | 5.35 | 5.35 | 5.35 |
| 671.000 | 5.35 | 5.35 | 5.35 | 5.35 | 5.35 |
| 672.000 | 5.36 | 5.36 | 5.36 | 5.36 | 5.36 |
| 673.000 | 5.36 | 5.36 | 5.36 | 5.36 | 5.37 |
| 674.000 | 5.37 | 5.37 | 5.37 | 5.37 | 5.37 |
| 675.000 | 5.37 | 5.37 | 5.37 | 5.37 | 5.38 |
| 676.000 | 5.38 | 5.38 | 5.38 | 5.38 | 5.38 |
| 677.000 | 5.38 | 5.38 | 5.38 | 5.39 | 5.39 |
| 678.000 | 5.39 | 5.39 | 5.39 | 5.39 | 5.39 |
| 679.000 | 5.39 | 5.39 | 5.40 | 5.40 | 5.40 |
| 680.000 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| 681.000 | 5.40 | 5.41 | 5.41 | 5.41 | 5.41 |
| 682.000 | 5.41 | 5.41 | 5.41 | 5.41 | 5.41 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 683.000 | 5.42 | 5.42 | 5.42 | 5.42 | 5.42 |
| 684.000 | 5.42 | 5.42 | 5.42 | 5.42 | 5.43 |
| 685.000 | 5.43 | 5.43 | 5.43 | 5.43 | 5.43 |
| 686.000 | 5.43 | 5.43 | 5.43 | 5.44 | 5.44 |
| 687.000 | 5.44 | 5.44 | 5.44 | 5.44 | 5.44 |
| 688.000 | 5.44 | 5.44 | 5.45 | 5.45 | 5.45 |
| 689.000 | 5.45 | 5.45 | 5.45 | 5.45 | 5.45 |
| 690.000 | 5.46 | 5.46 | 5.46 | 5.46 | 5.46 |
| 691.000 | 5.46 | 5.46 | 5.46 | 5.46 | 5.47 |
| 692.000 | 5.47 | 5.47 | 5.47 | 5.47 | 5.47 |
| 693.000 | 5.47 | 5.47 | 5.47 | 5.48 | 5.48 |
| 694.000 | 5.48 | 5.48 | 5.48 | 5.48 | 5.48 |
| 695.000 | 5.48 | 5.48 | 5.49 | 5.49 | 5.49 |
| 696.000 | 5.49 | 5.49 | 5.49 | 5.49 | 5.49 |
| 697.000 | 5.50 | 5.50 | 5.50 | 5.50 | 5.50 |
| 698.000 | 5.50 | 5.50 | 5.50 | 5.50 | 5.51 |
| 699.000 | 5.51 | 5.51 | 5.51 | 5.51 | 5.51 |
| 700.000 | 5.51 | 5.51 | 5.52 | 5.52 | 5.52 |
| 701.000 | 5.52 | 5.52 | 5.52 | 5.52 | 5.52 |
| 702.000 | 5.52 | 5.53 | 5.53 | 5.53 | 5.53 |
| 703.000 | 5.53 | 5.53 | 5.53 | 5.53 | 5.54 |
| 704.000 | 5.54 | 5.54 | 5.54 | 5.54 | 5.54 |
| 705.000 | 5.54 | 5.54 | 5.55 | 5.55 | 5.55 |
| 706.000 | 5.55 | 5.55 | 5.55 | 5.55 | 5.55 |
| 707.000 | 5.55 | 5.56 | 5.56 | 5.56 | 5.56 |
| 708.000 | 5.56 | 5.56 | 5.56 | 5.56 | 5.57 |
| 709.000 | 5.57 | 5.57 | 5.57 | 5.57 | 5.57 |
| 710.000 | 5.57 | 5.57 | 5.58 | 5.58 | 5.58 |
| 711.000 | 5.58 | 5.58 | 5.58 | 5.58 | 5.58 |
| 712.000 | 5.59 | 5.59 | 5.59 | 5.59 | 5.59 |
| 713.000 | 5.59 | 5.59 | 5.59 | 5.59 | 5.60 |
| 714.000 | 5.60 | 5.60 | 5.60 | 5.60 | 5.60 |
| 715.000 | 5.60 | 5.60 | 5.61 | 5.61 | 5.61 |
| 716.000 | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 |
| 717.000 | 5.62 | 5.62 | 5.62 | 5.62 | 5.62 |
| 718.000 | 5.62 | 5.62 | 5.62 | 5.63 | 5.63 |
| 719.000 | 5.63 | 5.63 | 5.63 | 5.63 | 5.63 |
| 720.000 | 5.63 | 5.64 | 5.64 | 5.64 | 5.64 |
| 721.000 | 5.64 | 5.64 | 5.64 | 5.64 | 5.65 |
| 722.000 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 |
| 723.000 | 5.65 | 5.66 | 5.66 | 5.66 | 5.66 |
| 724.000 | 5.66 | 5.66 | 5.66 | 5.66 | 5.67 |
| 725.000 | 5.67 | 5.67 | 5.67 | 5.67 | 5.67 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 726.000 | 5.67 | 5.67 | 5.68 | 5.68 | 5.68 |
| 727.000 | 5.68 | 5.68 | 5.68 | 5.68 | 5.68 |
| 728.000 | 5.69 | 5.69 | 5.69 | 5.69 | 5.69 |
| 729.000 | 5.69 | 5.69 | 5.69 | 5.70 | 5.70 |
| 730.000 | 5.70 | 5.70 | 5.70 | 5.70 | 5.70 |
| 731.000 | 5.71 | 5.71 | 5.71 | 5.71 | 5.71 |
| 732.000 | 5.71 | 5.71 | 5.71 | 5.72 | 5.72 |
| 733.000 | 5.72 | 5.72 | 5.72 | 5.72 | 5.72 |
| 734.000 | 5.73 | 5.73 | 5.73 | 5.73 | 5.73 |
| 735.000 | 5.73 | 5.73 | 5.73 | 5.74 | 5.74 |
| 736.000 | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 |
| 737.000 | 5.75 | 5.75 | 5.75 | 5.75 | 5.75 |
| 738.000 | 5.75 | 5.75 | 5.75 | 5.76 | 5.76 |
| 739.000 | 5.76 | 5.76 | 5.76 | 5.76 | 5.76 |
| 740.000 | 5.77 | 5.77 | 5.77 | 5.77 | 5.77 |
| 741.000 | 5.77 | 5.77 | 5.77 | 5.78 | 5.78 |
| 742.000 | 5.78 | 5.78 | 5.78 | 5.78 | 5.78 |
| 743.000 | 5.79 | 5.79 | 5.79 | 5.79 | 5.79 |
| 744.000 | 5.79 | 5.79 | 5.80 | 5.80 | 5.80 |
| 745.000 | 5.80 | 5.80 | 5.80 | 5.80 | 5.80 |
| 746.000 | 5.81 | 5.81 | 5.81 | 5.81 | 5.81 |
| 747.000 | 5.81 | 5.81 | 5.82 | 5.82 | 5.82 |
| 748.000 | 5.82 | 5.82 | 5.82 | 5.82 | 5.83 |
| 749.000 | 5.83 | 5.83 | 5.83 | 5.83 | 5.83 |
| 750.000 | 5.83 | 5.84 | 5.84 | 5.84 | 5.84 |
| 751.000 | 5.84 | 5.84 | 5.84 | 5.85 | 5.85 |
| 752.000 | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 |
| 753.000 | 5.86 | 5.86 | 5.86 | 5.86 | 5.86 |
| 754.000 | 5.86 | 5.86 | 5.87 | 5.87 | 5.87 |
| 755.000 | 5.87 | 5.87 | 5.87 | 5.87 | 5.88 |
| 756.000 | 5.88 | 5.88 | 5.88 | 5.88 | 5.88 |
| 757.000 | 5.88 | 5.89 | 5.89 | 5.89 | 5.89 |
| 758.000 | 5.89 | 5.89 | 5.89 | 5.90 | 5.90 |
| 759.000 | 5.90 | 5.90 | 5.90 | 5.90 | 5.90 |
| 760.000 | 5.91 | 5.91 | 5.91 | 5.91 | 5.91 |
| 761.000 | 5.91 | 5.91 | 5.92 | 5.92 | 5.92 |
| 762.000 | 5.92 | 5.92 | 5.92 | 5.92 | 5.93 |
| 763.000 | 5.93 | 5.93 | 5.93 | 5.93 | 5.93 |
| 764.000 | 5.93 | 5.94 | 5.94 | 5.94 | 5.94 |
| 765.000 | 5.94 | 5.94 | 5.95 | 5.95 | 5.95 |
| 766.000 | 5.95 | 5.95 | 5.95 | 5.95 | 5.96 |
| 767.000 | 5.96 | 5.96 | 5.96 | 5.96 | 5.96 |
| 768.000 | 5.96 | 5.97 | 5.97 | 5.97 | 5.97 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 769.000 | 5.97 | 5.97 | 5.97 | 5.98 | 5.98 |
| 770.000 | 5.98 | 5.98 | 5.98 | 5.98 | 5.99 |
| 771.000 | 5.99 | 5.99 | 5.99 | 5.99 | 5.99 |
| 772.000 | 5.99 | 6.00 | 6.00 | 6.00 | 6.00 |
| 773.000 | 6.00 | 6.00 | 6.01 | 6.01 | 6.01 |
| 774.000 | 6.01 | 6.01 | 6.01 | 6.01 | 6.02 |
| 775.000 | 6.02 | 6.02 | 6.02 | 6.02 | 6.02 |
| 776.000 | 6.03 | 6.03 | 6.03 | 6.03 | 6.03 |
| 777.000 | 6.03 | 6.03 | 6.04 | 6.04 | 6.04 |
| 778.000 | 6.04 | 6.04 | 6.04 | 6.05 | 6.05 |
| 779.000 | 6.05 | 6.05 | 6.05 | 6.05 | 6.05 |
| 780.000 | 6.06 | 6.06 | 6.06 | 6.06 | 6.06 |
| 781.000 | 6.06 | 6.07 | 6.07 | 6.07 | 6.07 |
| 782.000 | 6.07 | 6.07 | 6.08 | 6.08 | 6.08 |
| 783.000 | 6.08 | 6.08 | 6.08 | 6.09 | 6.09 |
| 784.000 | 6.09 | 6.09 | 6.09 | 6.09 | 6.09 |
| 785.000 | 6.10 | 6.10 | 6.10 | 6.10 | 6.10 |
| 786.000 | 6.10 | 6.11 | 6.11 | 6.11 | 6.11 |
| 787.000 | 6.11 | 6.11 | 6.12 | 6.12 | 6.12 |
| 788.000 | 6.12 | 6.12 | 6.12 | 6.13 | 6.13 |
| 789.000 | 6.13 | 6.13 | 6.13 | 6.13 | 6.14 |
| 790.000 | 6.14 | 6.14 | 6.14 | 6.14 | 6.14 |
| 791.000 | 6.14 | 6.15 | 6.15 | 6.15 | 6.15 |
| 792.000 | 6.15 | 6.15 | 6.16 | 6.16 | 6.16 |
| 793.000 | 6.16 | 6.16 | 6.16 | 6.17 | 6.17 |
| 794.000 | 6.17 | 6.17 | 6.17 | 6.17 | 6.18 |
| 795.000 | 6.18 | 6.18 | 6.18 | 6.18 | 6.18 |
| 796.000 | 6.19 | 6.19 | 6.19 | 6.19 | 6.19 |
| 797.000 | 6.19 | 6.20 | 6.20 | 6.20 | 6.20 |
| 798.000 | 6.20 | 6.20 | 6.21 | 6.21 | 6.21 |
| 799.000 | 6.21 | 6.21 | 6.22 | 6.22 | 6.22 |
| 800.000 | 6.22 | 6.22 | 6.22 | 6.23 | 6.23 |
| 801.000 | 6.23 | 6.23 | 6.23 | 6.23 | 6.24 |
| 802.000 | 6.24 | 6.24 | 6.24 | 6.24 | 6.24 |
| 803.000 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 |
| 804.000 | 6.25 | 6.26 | 6.26 | 6.26 | 6.26 |
| 805.000 | 6.26 | 6.27 | 6.27 | 6.27 | 6.27 |
| 806.000 | 6.27 | 6.27 | 6.28 | 6.28 | 6.28 |
| 807.000 | 6.28 | 6.28 | 6.28 | 6.29 | 6.29 |
| 808.000 | 6.29 | 6.29 | 6.29 | 6.29 | 6.30 |
| 809.000 | 6.30 | 6.30 | 6.30 | 6.30 | 6.31 |
| 810.000 | 6.31 | 6.31 | 6.31 | 6.31 | 6.31 |
| 811.000 | 6.32 | 6.32 | 6.32 | 6.32 | 6.32 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 812.000 | 6.33 | 6.33 | 6.33 | 6.33 | 6.33 |
| 813.000 | 6.33 | 6.34 | 6.34 | 6.34 | 6.34 |
| 814.000 | 6.34 | 6.35 | 6.35 | 6.35 | 6.35 |
| 815.000 | 6.35 | 6.35 | 6.36 | 6.36 | 6.36 |
| 816.000 | 6.36 | 6.36 | 6.37 | 6.37 | 6.37 |
| 817.000 | 6.37 | 6.37 | 6.37 | 6.38 | 6.38 |
| 818.000 | 6.38 | 6.38 | 6.38 | 6.39 | 6.39 |
| 819.000 | 6.39 | 6.39 | 6.39 | 6.39 | 6.40 |
| 820.000 | 6.40 | 6.40 | 6.40 | 6.40 | 6.41 |
| 821.000 | 6.41 | 6.41 | 6.41 | 6.41 | 6.42 |
| 822.000 | 6.42 | 6.42 | 6.42 | 6.42 | 6.42 |
| 823.000 | 6.43 | 6.43 | 6.43 | 6.43 | 6.43 |
| 824.000 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 |
| 825.000 | 6.45 | 6.45 | 6.45 | 6.45 | 6.45 |
| 826.000 | 6.45 | 6.46 | 6.46 | 6.46 | 6.46 |
| 827.000 | 6.46 | 6.47 | 6.47 | 6.47 | 6.47 |
| 828.000 | 6.47 | 6.48 | 6.48 | 6.48 | 6.48 |
| 829.000 | 6.48 | 6.49 | 6.49 | 6.49 | 6.49 |
| 830.000 | 6.49 | 6.50 | 6.50 | 6.50 | 6.50 |
| 831.000 | 6.50 | 6.51 | 6.51 | 6.51 | 6.51 |
| 832.000 | 6.51 | 6.52 | 6.52 | 6.52 | 6.52 |
| 833.000 | 6.52 | 6.52 | 6.53 | 6.53 | 6.53 |
| 834.000 | 6.53 | 6.53 | 6.54 | 6.54 | 6.54 |
| 835.000 | 6.54 | 6.54 | 6.55 | 6.55 | 6.55 |
| 836.000 | 6.55 | 6.55 | 6.56 | 6.56 | 6.56 |
| 837.000 | 6.56 | 6.56 | 6.57 | 6.57 | 6.57 |
| 838.000 | 6.57 | 6.57 | 6.58 | 6.58 | 6.58 |
| 839.000 | 6.58 | 6.58 | 6.59 | 6.59 | 6.59 |
| 840.000 | 6.59 | 6.60 | 6.60 | 6.60 | 6.60 |
| 841.000 | 6.60 | 6.61 | 6.61 | 6.61 | 6.61 |
| 842.000 | 6.61 | 6.62 | 6.62 | 6.62 | 6.62 |
| 843.000 | 6.62 | 6.63 | 6.63 | 6.63 | 6.63 |
| 844.000 | 6.63 | 6.64 | 6.64 | 6.64 | 6.64 |
| 845.000 | 6.64 | 6.65 | 6.65 | 6.65 | 6.65 |
| 846.000 | 6.66 | 6.66 | 6.66 | 6.66 | 6.66 |
| 847.000 | 6.67 | 6.67 | 6.67 | 6.67 | 6.67 |
| 848.000 | 6.68 | 6.68 | 6.68 | 6.68 | 6.68 |
| 849.000 | 6.69 | 6.69 | 6.69 | 6.69 | 6.70 |
| 850.000 | 6.70 | 6.70 | 6.70 | 6.70 | 6.71 |
| 851.000 | 6.71 | 6.71 | 6.71 | 6.71 | 6.72 |
| 852.000 | 6.72 | 6.72 | 6.72 | 6.73 | 6.73 |
| 853.000 | 6.73 | 6.73 | 6.73 | 6.74 | 6.74 |
| 854.000 | 6.74 | 6.74 | 6.75 | 6.75 | 6.75 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 855.000 | 6.75 | 6.75 | 6.76 | 6.76 | 6.76 |
| 856.000 | 6.76 | 6.76 | 6.77 | 6.77 | 6.77 |
| 857.000 | 6.77 | 6.78 | 6.78 | 6.78 | 6.78 |
| 858.000 | 6.78 | 6.79 | 6.79 | 6.79 | 6.79 |
| 859.000 | 6.80 | 6.80 | 6.80 | 6.80 | 6.81 |
| 860.000 | 6.81 | 6.81 | 6.81 | 6.81 | 6.82 |
| 861.000 | 6.82 | 6.82 | 6.82 | 6.83 | 6.83 |
| 862.000 | 6.83 | 6.83 | 6.83 | 6.84 | 6.84 |
| 863.000 | 6.84 | 6.84 | 6.85 | 6.85 | 6.85 |
| 864.000 | 6.85 | 6.86 | 6.86 | 6.86 | 6.86 |
| 865.000 | 6.86 | 6.87 | 6.87 | 6.87 | 6.87 |
| 866.000 | 6.88 | 6.88 | 6.88 | 6.88 | 6.89 |
| 867.000 | 6.89 | 6.89 | 6.89 | 6.89 | 6.90 |
| 868.000 | 6.90 | 6.90 | 6.90 | 6.91 | 6.91 |
| 869.000 | 6.91 | 6.91 | 6.92 | 6.92 | 6.92 |
| 870.000 | 6.92 | 6.93 | 6.93 | 6.93 | 6.93 |
| 871.000 | 6.93 | 6.94 | 6.94 | 6.94 | 6.94 |
| 872.000 | 6.95 | 6.95 | 6.95 | 6.95 | 6.96 |
| 873.000 | 6.96 | 6.96 | 6.96 | 6.97 | 6.97 |
| 874.000 | 6.97 | 6.97 | 6.98 | 6.98 | 6.98 |
| 875.000 | 6.98 | 6.99 | 6.99 | 6.99 | 6.99 |
| 876.000 | 6.99 | 7.00 | 7.00 | 7.00 | 7.00 |
| 877.000 | 7.01 | 7.01 | 7.01 | 7.01 | 7.02 |
| 878.000 | 7.02 | 7.02 | 7.02 | 7.03 | 7.03 |
| 879.000 | 7.03 | 7.03 | 7.04 | 7.04 | 7.04 |
| 880.000 | 7.04 | 7.05 | 7.05 | 7.05 | 7.05 |
| 881.000 | 7.06 | 7.06 | 7.06 | 7.06 | 7.07 |
| 882.000 | 7.07 | 7.07 | 7.07 | 7.08 | 7.08 |
| 883.000 | 7.08 | 7.08 | 7.09 | 7.09 | 7.09 |
| 884.000 | 7.09 | 7.10 | 7.10 | 7.10 | 7.11 |
| 885.000 | 7.11 | 7.11 | 7.11 | 7.12 | 7.12 |
| 886.000 | 7.12 | 7.12 | 7.13 | 7.13 | 7.13 |
| 887.000 | 7.13 | 7.14 | 7.14 | 7.14 | 7.14 |
| 888.000 | 7.15 | 7.15 | 7.15 | 7.15 | 7.16 |
| 889.000 | 7.16 | 7.16 | 7.16 | 7.17 | 7.17 |
| 890.000 | 7.17 | 7.18 | 7.18 | 7.18 | 7.18 |
| 891.000 | 7.19 | 7.19 | 7.19 | 7.19 | 7.20 |
| 892.000 | 7.20 | 7.20 | 7.20 | 7.21 | 7.21 |
| 893.000 | 7.21 | 7.22 | 7.22 | 7.22 | 7.22 |
| 894.000 | 7.23 | 7.23 | 7.23 | 7.23 | 7.24 |
| 895.000 | 7.24 | 7.24 | 7.25 | 7.25 | 7.25 |
| 896.000 | 7.25 | 7.26 | 7.26 | 7.26 | 7.26 |
| 897.000 | 7.27 | 7.27 | 7.27 | 7.27 | 7.28 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 898.000 | 7.28 | 7.28 | 7.28 | 7.29 | 7.29 |
| 899.000 | 7.29 | 7.30 | 7.30 | 7.30 | 7.30 |
| 900.000 | 7.31 | 7.31 | 7.31 | 7.31 | 7.32 |
| 901.000 | 7.32 | 7.32 | 7.33 | 7.33 | 7.33 |
| 902.000 | 7.33 | 7.34 | 7.34 | 7.34 | 7.34 |
| 903.000 | 7.35 | 7.35 | 7.35 | 7.36 | 7.36 |
| 904.000 | 7.36 | 7.36 | 7.37 | 7.37 | 7.37 |
| 905.000 | 7.37 | 7.38 | 7.38 | 7.38 | 7.39 |
| 906.000 | 7.39 | 7.39 | 7.39 | 7.40 | 7.40 |
| 907.000 | 7.40 | 7.41 | 7.41 | 7.41 | 7.41 |
| 908.000 | 7.42 | 7.42 | 7.42 | 7.42 | 7.43 |
| 909.000 | 7.43 | 7.43 | 7.44 | 7.44 | 7.44 |
| 910.000 | 7.44 | 7.45 | 7.45 | 7.45 | 7.46 |
| 911.000 | 7.46 | 7.46 | 7.46 | 7.47 | 7.47 |
| 912.000 | 7.47 | 7.48 | 7.48 | 7.48 | 7.48 |
| 913.000 | 7.49 | 7.49 | 7.49 | 7.50 | 7.50 |
| 914.000 | 7.50 | 7.51 | 7.51 | 7.51 | 7.51 |
| 915.000 | 7.52 | 7.52 | 7.52 | 7.53 | 7.53 |
| 916.000 | 7.53 | 7.53 | 7.54 | 7.54 | 7.54 |
| 917.000 | 7.55 | 7.55 | 7.55 | 7.56 | 7.56 |
| 918.000 | 7.56 | 7.56 | 7.57 | 7.57 | 7.57 |
| 919.000 | 7.58 | 7.58 | 7.58 | 7.59 | 7.59 |
| 920.000 | 7.59 | 7.59 | 7.60 | 7.60 | 7.60 |
| 921.000 | 7.61 | 7.61 | 7.61 | 7.62 | 7.62 |
| 922.000 | 7.62 | 7.63 | 7.63 | 7.63 | 7.63 |
| 923.000 | 7.64 | 7.64 | 7.64 | 7.65 | 7.65 |
| 924.000 | 7.65 | 7.66 | 7.66 | 7.66 | 7.67 |
| 925.000 | 7.67 | 7.67 | 7.67 | 7.68 | 7.68 |
| 926.000 | 7.68 | 7.69 | 7.69 | 7.69 | 7.70 |
| 927.000 | 7.70 | 7.70 | 7.71 | 7.71 | 7.71 |
| 928.000 | 7.72 | 7.72 | 7.72 | 7.73 | 7.73 |
| 929.000 | 7.73 | 7.73 | 7.74 | 7.74 | 7.74 |
| 930.000 | 7.75 | 7.75 | 7.75 | 7.76 | 7.76 |
| 931.000 | 7.76 | 7.77 | 7.77 | 7.77 | 7.78 |
| 932.000 | 7.78 | 7.78 | 7.79 | 7.79 | 7.79 |
| 933.000 | 7.80 | 7.80 | 7.80 | 7.81 | 7.81 |
| 934.000 | 7.81 | 7.82 | 7.82 | 7.82 | 7.83 |
| 935.000 | 7.83 | 7.83 | 7.84 | 7.84 | 7.84 |
| 936.000 | 7.85 | 7.85 | 7.85 | 7.86 | 7.86 |
| 937.000 | 7.86 | 7.87 | 7.87 | 7.87 | 7.88 |
| 938.000 | 7.88 | 7.88 | 7.89 | 7.89 | 7.89 |
| 939.000 | 7.90 | 7.90 | 7.90 | 7.91 | 7.91 |
| 940.000 | 7.91 | 7.92 | 7.92 | 7.92 | 7.93 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 941.000 | 7.93 | 7.94 | 7.94 | 7.94 | 7.95 |
| 942.000 | 7.95 | 7.95 | 7.96 | 7.96 | 7.96 |
| 943.000 | 7.97 | 7.97 | 7.97 | 7.98 | 7.98 |
| 944.000 | 7.98 | 7.99 | 7.99 | 8.00 | 8.00 |
| 945.000 | 8.00 | 8.01 | 8.01 | 8.01 | 8.02 |
| 946.000 | 8.02 | 8.02 | 8.03 | 8.03 | 8.03 |
| 947.000 | 8.04 | 8.04 | 8.05 | 8.05 | 8.05 |
| 948.000 | 8.06 | 8.06 | 8.06 | 8.07 | 8.07 |
| 949.000 | 8.07 | 8.08 | 8.08 | 8.09 | 8.09 |
| 950.000 | 8.09 | 8.10 | 8.10 | 8.10 | 8.11 |
| 951.000 | 8.11 | 8.12 | 8.12 | 8.12 | 8.13 |
| 952.000 | 8.13 | 8.13 | 8.14 | 8.14 | 8.15 |
| 953.000 | 8.15 | 8.15 | 8.16 | 8.16 | 8.16 |
| 954.000 | 8.17 | 8.17 | 8.18 | 8.18 | 8.18 |
| 955.000 | 8.19 | 8.19 | 8.19 | 8.20 | 8.20 |
| 956.000 | 8.21 | 8.21 | 8.21 | 8.22 | 8.22 |
| 957.000 | 8.23 | 8.23 | 8.23 | 8.24 | 8.24 |
| 958.000 | 8.24 | 8.25 | 8.25 | 8.26 | 8.26 |
| 959.000 | 8.26 | 8.27 | 8.27 | 8.28 | 8.28 |
| 960.000 | 8.28 | 8.29 | 8.29 | 8.30 | 8.30 |
| 961.000 | 8.30 | 8.31 | 8.31 | 8.32 | 8.32 |
| 962.000 | 8.32 | 8.33 | 8.33 | 8.34 | 8.34 |
| 963.000 | 8.34 | 8.35 | 8.35 | 8.36 | 8.36 |
| 964.000 | 8.37 | 8.37 | 8.37 | 8.38 | 8.38 |
| 965.000 | 8.39 | 8.39 | 8.39 | 8.40 | 8.40 |
| 966.000 | 8.41 | 8.41 | 8.41 | 8.42 | 8.42 |
| 967.000 | 8.43 | 8.43 | 8.44 | 8.44 | 8.44 |
| 968.000 | 8.45 | 8.45 | 8.46 | 8.46 | 8.47 |
| 969.000 | 8.47 | 8.47 | 8.48 | 8.48 | 8.49 |
| 970.000 | 8.49 | 8.50 | 8.50 | 8.50 | 8.51 |
| 971.000 | 8.51 | 8.52 | 8.52 | 8.53 | 8.53 |
| 972.000 | 8.53 | 8.54 | 8.54 | 8.55 | 8.55 |
| 973.000 | 8.56 | 8.56 | 8.56 | 8.57 | 8.57 |
| 974.000 | 8.58 | 8.58 | 8.59 | 8.59 | 8.60 |
| 975.000 | 8.60 | 8.60 | 8.61 | 8.61 | 8.62 |
| 976.000 | 8.62 | 8.63 | 8.63 | 8.64 | 8.64 |
| 977.000 | 8.65 | 8.65 | 8.65 | 8.66 | 8.66 |
| 978.000 | 8.67 | 8.67 | 8.68 | 8.68 | 8.69 |
| 979.000 | 8.69 | 8.70 | 8.70 | 8.70 | 8.71 |
| 980.000 | 8.71 | 8.72 | 8.72 | 8.73 | 8.73 |
| 981.000 | 8.74 | 8.74 | 8.75 | 8.75 | 8.76 |
| 982.000 | 8.76 | 8.77 | 8.77 | 8.77 | 8.78 |
| 983.000 | 8.78 | 8.79 | 8.79 | 8.80 | 8.80 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 984.000 | 8.81 | 8.81 | 8.82 | 8.82 | 8.83 |
| 985.000 | 8.83 | 8.84 | 8.84 | 8.85 | 8.85 |
| 986.000 | 8.86 | 8.86 | 8.87 | 8.87 | 8.88 |
| 987.000 | 8.88 | 8.89 | 8.89 | 8.90 | 8.90 |
| 988.000 | 8.91 | 8.91 | 8.92 | 8.92 | 8.93 |
| 989.000 | 8.93 | 8.94 | 8.94 | 8.95 | 8.95 |
| 990.000 | 8.96 | 8.96 | 8.97 | 8.97 | 8.98 |
| 991.000 | 8.98 | 8.99 | 8.99 | 9.00 | 9.00 |
| 992.000 | 9.01 | 9.01 | 9.02 | 9.02 | 9.03 |
| 993.000 | 9.03 | 9.04 | 9.04 | 9.05 | 9.05 |
| 994.000 | 9.06 | 9.06 | 9.07 | 9.08 | 9.08 |
| 995.000 | 9.09 | 9.09 | 9.10 | 9.10 | 9.11 |
| 996.000 | 9.11 | 9.12 | 9.12 | 9.13 | 9.13 |
| 997.000 | 9.14 | 9.14 | 9.15 | 9.16 | 9.16 |
| 998.000 | 9.17 | 9.17 | 9.18 | 9.18 | 9.19 |
| 999.000 | 9.19 | 9.20 | 9.20 | 9.21 | 9.22 |
| 1,000.000 | 9.22 | 9.23 | 9.23 | 9.24 | 9.24 |
| 1,001.000 | 9.25 | 9.25 | 9.26 | 9.27 | 9.27 |
| 1,002.000 | 9.28 | 9.28 | 9.29 | 9.29 | 9.30 |
| 1,003.000 | 9.31 | 9.31 | 9.32 | 9.32 | 9.33 |
| 1,004.000 | 9.33 | 9.34 | 9.35 | 9.35 | 9.36 |
| 1,005.000 | 9.36 | 9.37 | 9.37 | 9.38 | 9.39 |
| 1,006.000 | 9.39 | 9.40 | 9.40 | 9.41 | 9.42 |
| 1,007.000 | 9.42 | 9.43 | 9.43 | 9.44 | 9.45 |
| 1,008.000 | 9.45 | 9.46 | 9.46 | 9.47 | 9.48 |
| 1,009.000 | 9.48 | 9.49 | 9.49 | 9.50 | 9.51 |
| 1,010.000 | 9.51 | 9.52 | 9.52 | 9.53 | 9.54 |
| 1,011.000 | 9.54 | 9.55 | 9.55 | 9.56 | 9.57 |
| 1,012.000 | 9.57 | 9.58 | 9.59 | 9.59 | 9.60 |
| 1,013.000 | 9.60 | 9.61 | 9.62 | 9.62 | 9.63 |
| 1,014.000 | 9.64 | 9.64 | 9.65 | 9.66 | 9.66 |
| 1,015.000 | 9.67 | 9.67 | 9.68 | 9.69 | 9.69 |
| 1,016.000 | 9.70 | 9.71 | 9.71 | 9.72 | 9.73 |
| 1,017.000 | 9.73 | 9.74 | 9.75 | 9.75 | 9.76 |
| 1,018.000 | 9.77 | 9.77 | 9.78 | 9.79 | 9.79 |
| 1,019.000 | 9.80 | 9.81 | 9.81 | 9.82 | 9.83 |
| 1,020.000 | 9.83 | 9.84 | 9.85 | 9.85 | 9.86 |
| 1,021.000 | 9.87 | 9.87 | 9.88 | 9.89 | 9.89 |
| 1,022.000 | 9.90 | 9.91 | 9.92 | 9.92 | 9.93 |
| 1,023.000 | 9.94 | 9.94 | 9.95 | 9.96 | 9.96 |
| 1,024.000 | 9.97 | 9.98 | 9.99 | 9.99 | 10.00 |
| 1,025.000 | 10.01 | 10.01 | 10.02 | 10.03 | 10.04 |
| 1,026.000 | 10.04 | 10.05 | 10.06 | 10.06 | 10.07 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,027.000 | 10.08 | 10.09 | 10.09 | 10.10 | 10.11 |
| 1,028.000 | 10.12 | 10.12 | 10.13 | 10.14 | 10.15 |
| 1,029.000 | 10.15 | 10.16 | 10.17 | 10.18 | 10.18 |
| 1,030.000 | 10.19 | 10.20 | 10.21 | 10.21 | 10.22 |
| 1,031.000 | 10.23 | 10.24 | 10.24 | 10.25 | 10.26 |
| 1,032.000 | 10.27 | 10.27 | 10.28 | 10.29 | 10.30 |
| 1,033.000 | 10.31 | 10.31 | 10.32 | 10.33 | 10.34 |
| 1,034.000 | 10.34 | 10.35 | 10.36 | 10.37 | 10.38 |
| 1,035.000 | 10.38 | 10.39 | 10.40 | 10.41 | 10.42 |
| 1,036.000 | 10.43 | 10.43 | 10.44 | 10.45 | 10.46 |
| 1,037.000 | 10.47 | 10.47 | 10.48 | 10.49 | 10.50 |
| 1,038.000 | 10.51 | 10.52 | 10.52 | 10.53 | 10.54 |
| 1,039.000 | 10.55 | 10.56 | 10.57 | 10.57 | 10.58 |
| 1,040.000 | 10.59 | 10.60 | 10.61 | 10.62 | 10.63 |
| 1,041.000 | 10.63 | 10.64 | 10.65 | 10.66 | 10.67 |
| 1,042.000 | 10.68 | 10.69 | 10.70 | 10.70 | 10.71 |
| 1,043.000 | 10.72 | 10.73 | 10.74 | 10.75 | 10.76 |
| 1,044.000 | 10.77 | 10.78 | 10.78 | 10.79 | 10.80 |
| 1,045.000 | 10.81 | 10.82 | 10.83 | 10.84 | 10.85 |
| 1,046.000 | 10.86 | 10.87 | 10.88 | 10.88 | 10.89 |
| 1,047.000 | 10.90 | 10.91 | 10.92 | 10.93 | 10.94 |
| 1,048.000 | 10.95 | 10.96 | 10.97 | 10.98 | 10.99 |
| 1,049.000 | 11.00 | 11.01 | 11.02 | 11.03 | 11.04 |
| 1,050.000 | 11.05 | 11.06 | 11.07 | 11.08 | 11.08 |
| 1,051.000 | 11.09 | 11.10 | 11.11 | 11.12 | 11.13 |
| 1,052.000 | 11.14 | 11.15 | 11.16 | 11.17 | 11.18 |
| 1,053.000 | 11.19 | 11.20 | 11.21 | 11.22 | 11.24 |
| 1,054.000 | 11.25 | 11.26 | 11.27 | 11.28 | 11.29 |
| 1,055.000 | 11.30 | 11.31 | 11.32 | 11.33 | 11.34 |
| 1,056.000 | 11.35 | 11.36 | 11.37 | 11.38 | 11.39 |
| 1,057.000 | 11.40 | 11.41 | 11.42 | 11.43 | 11.45 |
| 1,058.000 | 11.46 | 11.47 | 11.48 | 11.49 | 11.50 |
| 1,059.000 | 11.51 | 11.52 | 11.53 | 11.54 | 11.56 |
| 1,060.000 | 11.57 | 11.58 | 11.59 | 11.60 | 11.61 |
| 1,061.000 | 11.62 | 11.63 | 11.65 | 11.66 | 11.67 |
| 1,062.000 | 11.68 | 11.69 | 11.70 | 11.72 | 11.73 |
| 1,063.000 | 11.74 | 11.75 | 11.76 | 11.77 | 11.79 |
| 1,064.000 | 11.80 | 11.81 | 11.82 | 11.83 | 11.85 |
| 1,065.000 | 11.86 | 11.87 | 11.88 | 11.89 | 11.91 |
| 1,066.000 | 11.92 | 11.93 | 11.94 | 11.96 | 11.97 |
| 1,067.000 | 11.98 | 11.99 | 12.01 | 12.02 | 12.03 |
| 1,068.000 | 12.04 | 12.06 | 12.07 | 12.08 | 12.09 |
| 1,069.000 | 12.11 | 12.12 | 12.13 | 12.15 | 12.16 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,070.000 | 12.17 | 12.19 | 12.20 | 12.21 | 12.23 |
| 1,071.000 | 12.24 | 12.25 | 12.26 | 12.28 | 12.29 |
| 1,072.000 | 12.30 | 12.32 | 12.33 | 12.34 | 12.36 |
| 1,073.000 | 12.37 | 12.39 | 12.40 | 12.41 | 12.43 |
| 1,074.000 | 12.44 | 12.45 | 12.47 | 12.48 | 12.50 |
| 1,075.000 | 12.51 | 12.52 | 12.54 | 12.55 | 12.57 |
| 1,076.000 | 12.58 | 12.60 | 12.61 | 12.62 | 12.64 |
| 1,077.000 | 12.65 | 12.67 | 12.68 | 12.70 | 12.71 |
| 1,078.000 | 12.73 | 12.74 | 12.76 | 12.77 | 12.79 |
| 1,079.000 | 12.80 | 12.82 | 12.83 | 12.85 | 12.86 |
| 1,080.000 | 12.88 | 12.89 | 12.91 | 12.92 | 12.94 |
| 1,081.000 | 12.96 | 12.97 | 12.99 | 13.00 | 13.02 |
| 1,082.000 | 13.03 | 13.05 | 13.07 | 13.08 | 13.10 |
| 1,083.000 | 13.12 | 13.13 | 13.15 | 13.16 | 13.18 |
| 1,084.000 | 13.20 | 13.21 | 13.23 | 13.25 | 13.26 |
| 1,085.000 | 13.28 | 13.30 | 13.32 | 13.33 | 13.35 |
| 1,086.000 | 13.37 | 13.38 | 13.40 | 13.42 | 13.44 |
| 1,087.000 | 13.45 | 13.47 | 13.49 | 13.51 | 13.53 |
| 1,088.000 | 13.54 | 13.56 | 13.58 | 13.60 | 13.62 |
| 1,089.000 | 13.63 | 13.65 | 13.67 | 13.69 | 13.71 |
| 1,090.000 | 13.73 | 13.75 | 13.77 | 13.78 | 13.80 |
| 1,091.000 | 13.82 | 13.84 | 13.86 | 13.88 | 13.90 |
| 1,092.000 | 13.92 | 13.94 | 13.96 | 13.98 | 14.00 |
| 1,093.000 | 14.02 | 14.04 | 14.06 | 14.08 | 14.10 |
| 1,094.000 | 14.12 | 14.14 | 14.16 | 14.18 | 14.20 |
| 1,095.000 | 14.22 | 14.25 | 14.27 | 14.29 | 14.31 |
| 1,096.000 | 14.33 | 14.35 | 14.37 | 14.40 | 14.42 |
| 1,097.000 | 14.44 | 14.46 | 14.48 | 14.51 | 14.53 |
| 1,098.000 | 14.55 | 14.57 | 14.60 | 14.62 | 14.64 |
| 1,099.000 | 14.66 | 14.69 | 14.71 | 14.73 | 14.76 |
| 1,100.000 | 14.78 | 14.81 | 14.83 | 14.85 | 14.88 |
| 1,101.000 | 14.90 | 14.93 | 14.95 | 14.98 | 15.00 |
| 1,102.000 | 15.02 | 15.05 | 15.08 | 15.10 | 15.13 |
| 1,103.000 | 15.15 | 15.18 | 15.20 | 15.23 | 15.25 |
| 1,104.000 | 15.28 | 15.31 | 15.33 | 15.36 | 15.39 |
| 1,105.000 | 15.41 | 15.44 | 15.47 | 15.50 | 15.52 |
| 1,106.000 | 15.55 | 15.58 | 15.61 | 15.63 | 15.66 |
| 1,107.000 | 15.69 | 15.72 | 15.75 | 15.78 | 15.81 |
| 1,108.000 | 15.84 | 15.87 | 15.90 | 15.93 | 15.96 |
| 1,109.000 | 15.99 | 16.02 | 16.05 | 16.08 | 16.11 |
| 1,110.000 | 16.14 | 16.17 | 16.20 | 16.23 | 16.27 |
| 1,111.000 | 16.30 | 16.33 | 16.36 | 16.40 | 16.43 |
| 1,112.000 | 16.46 | 16.49 | 16.53 | 16.56 | 16.60 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,113.000 | 16.63 | 16.66 | 16.70 | 16.73 | 16.77 |
| 1,114.000 | 16.80 | 16.84 | 16.88 | 16.91 | 16.95 |
| 1,115.000 | 16.98 | 17.02 | 17.06 | 17.10 | 17.13 |
| 1,116.000 | 17.17 | 17.21 | 17.25 | 17.29 | 17.32 |
| 1,117.000 | 17.36 | 17.40 | 17.44 | 17.48 | 17.52 |
| 1,118.000 | 17.56 | 17.60 | 17.64 | 17.69 | 17.73 |
| 1,119.000 | 17.77 | 17.81 | 17.86 | 17.90 | 17.94 |
| 1,120.000 | 17.99 | 18.03 | 18.07 | 18.12 | 18.16 |
| 1,121.000 | 18.21 | 18.25 | 18.30 | 18.35 | 18.39 |
| 1,122.000 | 18.44 | 18.49 | 18.54 | 18.59 | 18.63 |
| 1,123.000 | 18.68 | 18.73 | 18.78 | 18.83 | 18.88 |
| 1,124.000 | 18.94 | 18.99 | 19.04 | 19.09 | 19.15 |
| 1,125.000 | 19.20 | 19.25 | 19.31 | 19.36 | 19.42 |
| 1,126.000 | 19.48 | 19.53 | 19.59 | 19.65 | 19.70 |
| 1,127.000 | 19.76 | 19.82 | 19.88 | 19.94 | 20.00 |
| 1,128.000 | 20.06 | 20.12 | 20.19 | 20.25 | 20.31 |
| 1,129.000 | 20.38 | 20.44 | 20.51 | 20.57 | 20.64 |
| 1,130.000 | 20.71 | 20.78 | 20.85 | 20.92 | 20.99 |
| 1,131.000 | 21.06 | 21.13 | 21.20 | 21.28 | 21.35 |
| 1,132.000 | 21.43 | 21.50 | 21.58 | 21.66 | 21.74 |
| 1,133.000 | 21.82 | 21.90 | 21.98 | 22.06 | 22.15 |
| 1,134.000 | 22.23 | 22.32 | 22.40 | 22.49 | 22.58 |
| 1,135.000 | 22.67 | 22.76 | 22.86 | 22.95 | 23.04 |
| 1,136.000 | 23.14 | 23.24 | 23.34 | 23.44 | 23.54 |
| 1,137.000 | 23.64 | 23.75 | 23.86 | 23.96 | 24.07 |
| 1,138.000 | 24.18 | 24.30 | 24.41 | 24.53 | 24.65 |
| 1,139.000 | 24.77 | 24.89 | 25.01 | 25.14 | 25.26 |
| 1,140.000 | 25.39 | 25.53 | 25.66 | 25.80 | 25.94 |
| 1,141.000 | 26.08 | 26.22 | 26.37 | 26.52 | 26.67 |
| 1,142.000 | 26.83 | 26.99 | 27.15 | 27.31 | 27.48 |
| 1,143.000 | 27.66 | 27.83 | 28.01 | 28.20 | 28.38 |
| 1,144.000 | 28.58 | 28.77 | 28.98 | 29.18 | 29.39 |
| 1,145.000 | 29.61 | 29.84 | 30.07 | 30.30 | 30.54 |
| 1,146.000 | 30.79 | 31.05 | 31.31 | 31.59 | 31.87 |
| 1,147.000 | 32.16 | 32.46 | 32.77 | 33.10 | 33.43 |
| 1,148.000 | 33.78 | 34.15 | 34.53 | 34.92 | 35.34 |
| 1,149.000 | 35.77 | 36.23 | 36.71 | 37.22 | 37.76 |
| 1,150.000 | 38.34 | 38.96 | 39.63 | 40.36 | 41.16 |
| 1,151.000 | 42.05 | 43.06 | 44.24 | 45.69 | 47.64 |
| 1,152.000 | 52.45 | 54.78 | 55.62 | 56.20 | 56.63 |
| 1,153.000 | 56.98 | 57.26 | 57.48 | 57.67 | 57.83 |
| 1,154.000 | 57.95 | 58.05 | 58.13 | 58.18 | 58.22 |
| 1,155.000 | 58.25 | 58.25 | 58.25 | 58.23 | 58.19 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,156.000 | 58.15 | 58.09 | 58.03 | 57.95 | 57.86 |
| 1,157.000 | 57.76 | 57.66 | 57.54 | 57.42 | 57.29 |
| 1,158.000 | 57.14 | 56.99 | 56.83 | 56.67 | 56.49 |
| 1,159.000 | 56.31 | 56.11 | 55.91 | 55.70 | 55.49 |
| 1,160.000 | 55.26 | 55.03 | 54.78 | 54.53 | 54.27 |
| 1,161.000 | 54.00 | 53.72 | 53.43 | 53.13 | 52.82 |
| 1,162.000 | 52.50 | 52.17 | 51.83 | 51.48 | 51.11 |
| 1,163.000 | 50.73 | 50.34 | 49.93 | 49.51 | 49.08 |
| 1,164.000 | 48.62 | 48.15 | 47.66 | 47.15 | 46.62 |
| 1,165.000 | 46.06 | 45.48 | 44.88 | 44.24 | 43.56 |
| 1,166.000 | 42.85 | 42.09 | 41.28 | 40.41 | 39.46 |
| 1,167.000 | 38.42 | 37.26 | 35.91 | 34.31 | 32.19 |
| 1,168.000 | 27.21 | 24.71 | 23.69 | 22.94 | 22.32 |
| 1,169.000 | 21.79 | 21.33 | 20.91 | 20.53 | 20.19 |
| 1,170.000 | 19.86 | 19.56 | 19.28 | 19.01 | 18.76 |
| 1,171.000 | 18.52 | 18.29 | 18.08 | 17.87 | 17.67 |
| 1,172.000 | 17.48 | 17.30 | 17.13 | 16.96 | 16.80 |
| 1,173.000 | 16.64 | 16.49 | 16.34 | 16.20 | 16.06 |
| 1,174.000 | 15.93 | 15.80 | 15.67 | 15.55 | 15.43 |
| 1,175.000 | 15.31 | 15.20 | 15.09 | 14.98 | 14.88 |
| 1,176.000 | 14.77 | 14.67 | 14.58 | 14.48 | 14.39 |
| 1,177.000 | 14.30 | 14.21 | 14.12 | 14.03 | 13.95 |
| 1,178.000 | 13.87 | 13.78 | 13.71 | 13.63 | 13.55 |
| 1,179.000 | 13.48 | 13.40 | 13.33 | 13.26 | 13.19 |
| 1,180.000 | 13.12 | 13.05 | 12.99 | 12.92 | 12.86 |
| 1,181.000 | 12.79 | 12.73 | 12.67 | 12.61 | 12.55 |
| 1,182.000 | 12.49 | 12.44 | 12.38 | 12.32 | 12.27 |
| 1,183.000 | 12.21 | 12.16 | 12.11 | 12.05 | 12.00 |
| 1,184.000 | 11.95 | 11.90 | 11.85 | 11.80 | 11.75 |
| 1,185.000 | 11.70 | 11.66 | 11.61 | 11.56 | 11.52 |
| 1,186.000 | 11.47 | 11.43 | 11.39 | 11.34 | 11.30 |
| 1,187.000 | 11.26 | 11.22 | 11.17 | 11.13 | 11.09 |
| 1,188.000 | 11.05 | 11.01 | 10.97 | 10.94 | 10.90 |
| 1,189.000 | 10.86 | 10.82 | 10.79 | 10.75 | 10.71 |
| 1,190.000 | 10.68 | 10.64 | 10.61 | 10.57 | 10.54 |
| 1,191.000 | 10.50 | 10.47 | 10.44 | 10.40 | 10.37 |
| 1,192.000 | 10.34 | 10.31 | 10.28 | 10.24 | 10.21 |
| 1,193.000 | 10.18 | 10.15 | 10.12 | 10.09 | 10.06 |
| 1,194.000 | 10.03 | 10.00 | 9.98 | 9.95 | 9.92 |
| 1,195.000 | 9.89 | 9.86 | 9.84 | 9.81 | 9.78 |
| 1,196.000 | 9.75 | 9.73 | 9.70 | 9.68 | 9.65 |
| 1,197.000 | 9.62 | 9.60 | 9.57 | 9.55 | 9.52 |
| 1,198.000 | 9.50 | 9.47 | 9.45 | 9.43 | 9.40 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,199.000 | 9.38 | 9.35 | 9.33 | 9.31 | 9.29 |
| 1,200.000 | 9.26 | 9.24 | 9.22 | 9.20 | 9.17 |
| 1,201.000 | 9.15 | 9.13 | 9.11 | 9.09 | 9.07 |
| 1,202.000 | 9.04 | 9.02 | 9.00 | 8.98 | 8.96 |
| 1,203.000 | 8.94 | 8.92 | 8.90 | 8.88 | 8.86 |
| 1,204.000 | 8.84 | 8.82 | 8.80 | 8.78 | 8.76 |
| 1,205.000 | 8.74 | 8.73 | 8.71 | 8.69 | 8.67 |
| 1,206.000 | 8.65 | 8.63 | 8.62 | 8.60 | 8.58 |
| 1,207.000 | 8.56 | 8.54 | 8.53 | 8.51 | 8.49 |
| 1,208.000 | 8.47 | 8.46 | 8.44 | 8.42 | 8.41 |
| 1,209.000 | 8.39 | 8.37 | 8.36 | 8.34 | 8.32 |
| 1,210.000 | 8.31 | 8.29 | 8.28 | 8.26 | 8.24 |
| 1,211.000 | 8.23 | 8.21 | 8.20 | 8.18 | 8.17 |
| 1,212.000 | 8.15 | 8.14 | 8.12 | 8.11 | 8.09 |
| 1,213.000 | 8.08 | 8.06 | 8.05 | 8.03 | 8.02 |
| 1,214.000 | 8.00 | 7.99 | 7.98 | 7.96 | 7.95 |
| 1,215.000 | 7.93 | 7.92 | 7.91 | 7.89 | 7.88 |
| 1,216.000 | 7.86 | 7.85 | 7.84 | 7.82 | 7.81 |
| 1,217.000 | 7.80 | 7.78 | 7.77 | 7.76 | 7.74 |
| 1,218.000 | 7.73 | 7.72 | 7.71 | 7.69 | 7.68 |
| 1,219.000 | 7.67 | 7.66 | 7.64 | 7.63 | 7.62 |
| 1,220.000 | 7.61 | 7.59 | 7.58 | 7.57 | 7.56 |
| 1,221.000 | 7.55 | 7.53 | 7.52 | 7.51 | 7.50 |
| 1,222.000 | 7.49 | 7.48 | 7.46 | 7.45 | 7.44 |
| 1,223.000 | 7.43 | 7.42 | 7.41 | 7.40 | 7.38 |
| 1,224.000 | 7.37 | 7.36 | 7.35 | 7.34 | 7.33 |
| 1,225.000 | 7.32 | 7.31 | 7.30 | 7.29 | 7.28 |
| 1,226.000 | 7.26 | 7.25 | 7.24 | 7.23 | 7.22 |
| 1,227.000 | 7.21 | 7.20 | 7.19 | 7.18 | 7.17 |
| 1,228.000 | 7.16 | 7.15 | 7.14 | 7.13 | 7.12 |
| 1,229.000 | 7.11 | 7.10 | 7.09 | 7.08 | 7.06 |
| 1,230.000 | 7.05 | 7.04 | 7.03 | 7.02 | 7.01 |
| 1,231.000 | 7.01 | 7.00 | 6.99 | 6.98 | 6.97 |
| 1,232.000 | 6.96 | 6.95 | 6.94 | 6.93 | 6.92 |
| 1,233.000 | 6.91 | 6.90 | 6.89 | 6.88 | 6.87 |
| 1,234.000 | 6.86 | 6.85 | 6.84 | 6.83 | 6.83 |
| 1,235.000 | 6.82 | 6.81 | 6.80 | 6.79 | 6.78 |
| 1,236.000 | 6.77 | 6.76 | 6.75 | 6.74 | 6.74 |
| 1,237.000 | 6.73 | 6.72 | 6.71 | 6.70 | 6.69 |
| 1,238.000 | 6.68 | 6.68 | 6.67 | 6.66 | 6.65 |
| 1,239.000 | 6.64 | 6.63 | 6.63 | 6.62 | 6.61 |
| 1,240.000 | 6.60 | 6.59 | 6.58 | 6.58 | 6.57 |
| 1,241.000 | 6.56 | 6.55 | 6.54 | 6.54 | 6.53 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,242.000 | 6.52 | 6.51 | 6.50 | 6.50 | 6.49 |
| 1,243.000 | 6.48 | 6.47 | 6.47 | 6.46 | 6.45 |
| 1,244.000 | 6.44 | 6.43 | 6.43 | 6.42 | 6.41 |
| 1,245.000 | 6.40 | 6.40 | 6.39 | 6.38 | 6.38 |
| 1,246.000 | 6.37 | 6.36 | 6.35 | 6.35 | 6.34 |
| 1,247.000 | 6.33 | 6.32 | 6.32 | 6.31 | 6.30 |
| 1,248.000 | 6.30 | 6.29 | 6.28 | 6.27 | 6.27 |
| 1,249.000 | 6.26 | 6.25 | 6.25 | 6.24 | 6.23 |
| 1,250.000 | 6.23 | 6.22 | 6.21 | 6.21 | 6.20 |
| 1,251.000 | 6.19 | 6.19 | 6.18 | 6.17 | 6.17 |
| 1,252.000 | 6.16 | 6.15 | 6.15 | 6.14 | 6.13 |
| 1,253.000 | 6.13 | 6.12 | 6.11 | 6.11 | 6.10 |
| 1,254.000 | 6.09 | 6.09 | 6.08 | 6.07 | 6.07 |
| 1,255.000 | 6.06 | 6.06 | 6.05 | 6.04 | 6.04 |
| 1,256.000 | 6.03 | 6.02 | 6.02 | 6.01 | 6.01 |
| 1,257.000 | 6.00 | 5.99 | 5.99 | 5.98 | 5.97 |
| 1,258.000 | 5.97 | 5.96 | 5.96 | 5.95 | 5.94 |
| 1,259.000 | 5.94 | 5.93 | 5.93 | 5.92 | 5.92 |
| 1,260.000 | 5.91 | 5.90 | 5.90 | 5.89 | 5.89 |
| 1,261.000 | 5.88 | 5.87 | 5.87 | 5.86 | 5.86 |
| 1,262.000 | 5.85 | 5.85 | 5.84 | 5.84 | 5.83 |
| 1,263.000 | 5.82 | 5.82 | 5.81 | 5.81 | 5.80 |
| 1,264.000 | 5.80 | 5.79 | 5.79 | 5.78 | 5.77 |
| 1,265.000 | 5.77 | 5.76 | 5.76 | 5.75 | 5.75 |
| 1,266.000 | 5.74 | 5.74 | 5.73 | 5.73 | 5.72 |
| 1,267.000 | 5.72 | 5.71 | 5.71 | 5.70 | 5.69 |
| 1,268.000 | 5.69 | 5.68 | 5.68 | 5.67 | 5.67 |
| 1,269.000 | 5.66 | 5.66 | 5.65 | 5.65 | 5.64 |
| 1,270.000 | 5.64 | 5.63 | 5.63 | 5.62 | 5.62 |
| 1,271.000 | 5.61 | 5.61 | 5.60 | 5.60 | 5.59 |
| 1,272.000 | 5.59 | 5.58 | 5.58 | 5.57 | 5.57 |
| 1,273.000 | 5.56 | 5.56 | 5.55 | 5.55 | 5.54 |
| 1,274.000 | 5.54 | 5.54 | 5.53 | 5.53 | 5.52 |
| 1,275.000 | 5.52 | 5.51 | 5.51 | 5.50 | 5.50 |
| 1,276.000 | 5.49 | 5.49 | 5.48 | 5.48 | 5.47 |
| 1,277.000 | 5.47 | 5.46 | 5.46 | 5.46 | 5.45 |
| 1,278.000 | 5.45 | 5.44 | 5.44 | 5.43 | 5.43 |
| 1,279.000 | 5.42 | 5.42 | 5.42 | 5.41 | 5.41 |
| 1,280.000 | 5.40 | 5.40 | 5.39 | 5.39 | 5.38 |
| 1,281.000 | 5.38 | 5.38 | 5.37 | 5.37 | 5.36 |
| 1,282.000 | 5.36 | 5.35 | 5.35 | 5.35 | 5.34 |
| 1,283.000 | 5.34 | 5.33 | 5.33 | 5.32 | 5.32 |
| 1,284.000 | 5.32 | 5.31 | 5.31 | 5.30 | 5.30 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,285.000 | 5.29 | 5.29 | 5.29 | 5.28 | 5.28 |
| 1,286.000 | 5.27 | 5.27 | 5.27 | 5.26 | 5.26 |
| 1,287.000 | 5.25 | 5.25 | 5.25 | 5.24 | 5.24 |
| 1,288.000 | 5.23 | 5.23 | 5.23 | 5.22 | 5.22 |
| 1,289.000 | 5.21 | 5.21 | 5.21 | 5.20 | 5.20 |
| 1,290.000 | 5.19 | 5.19 | 5.19 | 5.18 | 5.18 |
| 1,291.000 | 5.17 | 5.17 | 5.17 | 5.16 | 5.16 |
| 1,292.000 | 5.15 | 5.15 | 5.15 | 5.14 | 5.14 |
| 1,293.000 | 5.14 | 5.13 | 5.13 | 5.12 | 5.12 |
| 1,294.000 | 5.12 | 5.11 | 5.11 | 5.11 | 5.10 |
| 1,295.000 | 5.10 | 5.09 | 5.09 | 5.09 | 5.08 |
| 1,296.000 | 5.08 | 5.08 | 5.07 | 5.07 | 5.07 |
| 1,297.000 | 5.06 | 5.06 | 5.05 | 5.05 | 5.05 |
| 1,298.000 | 5.04 | 5.04 | 5.04 | 5.03 | 5.03 |
| 1,299.000 | 5.03 | 5.02 | 5.02 | 5.02 | 5.01 |
| 1,300.000 | 5.01 | 5.00 | 5.00 | 5.00 | 4.99 |
| 1,301.000 | 4.99 | 4.99 | 4.98 | 4.98 | 4.98 |
| 1,302.000 | 4.97 | 4.97 | 4.97 | 4.96 | 4.96 |
| 1,303.000 | 4.96 | 4.95 | 4.95 | 4.95 | 4.94 |
| 1,304.000 | 4.94 | 4.94 | 4.93 | 4.93 | 4.93 |
| 1,305.000 | 4.92 | 4.92 | 4.92 | 4.91 | 4.91 |
| 1,306.000 | 4.91 | 4.90 | 4.90 | 4.90 | 4.89 |
| 1,307.000 | 4.89 | 4.89 | 4.88 | 4.88 | 4.88 |
| 1,308.000 | 4.87 | 4.87 | 4.87 | 4.86 | 4.86 |
| 1,309.000 | 4.86 | 4.85 | 4.85 | 4.85 | 4.84 |
| 1,310.000 | 4.84 | 4.84 | 4.84 | 4.83 | 4.83 |
| 1,311.000 | 4.83 | 4.82 | 4.82 | 4.82 | 4.81 |
| 1,312.000 | 4.81 | 4.81 | 4.80 | 4.80 | 4.80 |
| 1,313.000 | 4.79 | 4.79 | 4.79 | 4.79 | 4.78 |
| 1,314.000 | 4.78 | 4.78 | 4.77 | 4.77 | 4.77 |
| 1,315.000 | 4.76 | 4.76 | 4.76 | 4.76 | 4.75 |
| 1,316.000 | 4.75 | 4.75 | 4.74 | 4.74 | 4.74 |
| 1,317.000 | 4.74 | 4.73 | 4.73 | 4.73 | 4.72 |
| 1,318.000 | 4.72 | 4.72 | 4.72 | 4.71 | 4.71 |
| 1,319.000 | 4.71 | 4.70 | 4.70 | 4.70 | 4.70 |
| 1,320.000 | 4.69 | 4.69 | 4.69 | 4.68 | 4.68 |
| 1,321.000 | 4.68 | 4.68 | 4.67 | 4.67 | 4.67 |
| 1,322.000 | 4.67 | 4.66 | 4.66 | 4.66 | 4.65 |
| 1,323.000 | 4.65 | 4.65 | 4.65 | 4.64 | 4.64 |
| 1,324.000 | 4.64 | 4.64 | 4.63 | 4.63 | 4.63 |
| 1,325.000 | 4.63 | 4.62 | 4.62 | 4.62 | 4.62 |
| 1,326.000 | 4.61 | 4.61 | 4.61 | 4.60 | 4.60 |
| 1,327.000 | 4.60 | 4.60 | 4.59 | 4.59 | 4.59 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,328.000 | 4.59 | 4.58 | 4.58 | 4.58 | 4.58 |
| 1,329.000 | 4.57 | 4.57 | 4.57 | 4.57 | 4.56 |
| 1,330.000 | 4.56 | 4.56 | 4.56 | 4.55 | 4.55 |
| 1,331.000 | 4.55 | 4.55 | 4.54 | 4.54 | 4.54 |
| 1,332.000 | 4.54 | 4.53 | 4.53 | 4.53 | 4.53 |
| 1,333.000 | 4.52 | 4.52 | 4.52 | 4.52 | 4.51 |
| 1,334.000 | 4.51 | 4.51 | 4.51 | 4.50 | 4.50 |
| 1,335.000 | 4.50 | 4.50 | 4.49 | 4.49 | 4.49 |
| 1,336.000 | 4.49 | 4.48 | 4.48 | 4.48 | 4.48 |
| 1,337.000 | 4.48 | 4.47 | 4.47 | 4.47 | 4.47 |
| 1,338.000 | 4.46 | 4.46 | 4.46 | 4.46 | 4.45 |
| 1,339.000 | 4.45 | 4.45 | 4.45 | 4.44 | 4.44 |
| 1,340.000 | 4.44 | 4.44 | 4.44 | 4.43 | 4.43 |
| 1,341.000 | 4.43 | 4.43 | 4.42 | 4.42 | 4.42 |
| 1,342.000 | 4.42 | 4.41 | 4.41 | 4.41 | 4.41 |
| 1,343.000 | 4.41 | 4.40 | 4.40 | 4.40 | 4.40 |
| 1,344.000 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 |
| 1,345.000 | 4.38 | 4.38 | 4.38 | 4.38 | 4.37 |
| 1,346.000 | 4.37 | 4.37 | 4.37 | 4.37 | 4.36 |
| 1,347.000 | 4.36 | 4.36 | 4.36 | 4.35 | 4.35 |
| 1,348.000 | 4.35 | 4.35 | 4.35 | 4.34 | 4.34 |
| 1,349.000 | 4.34 | 4.34 | 4.33 | 4.33 | 4.33 |
| 1,350.000 | 4.33 | 4.33 | 4.32 | 4.32 | 4.32 |
| 1,351.000 | 4.32 | 4.32 | 4.31 | 4.31 | 4.31 |
| 1,352.000 | 4.31 | 4.31 | 4.30 | 4.30 | 4.30 |
| 1,353.000 | 4.30 | 4.29 | 4.29 | 4.29 | 4.29 |
| 1,354.000 | 4.29 | 4.28 | 4.28 | 4.28 | 4.28 |
| 1,355.000 | 4.28 | 4.27 | 4.27 | 4.27 | 4.27 |
| 1,356.000 | 4.27 | 4.26 | 4.26 | 4.26 | 4.26 |
| 1,357.000 | 4.26 | 4.25 | 4.25 | 4.25 | 4.25 |
| 1,358.000 | 4.25 | 4.24 | 4.24 | 4.24 | 4.24 |
| 1,359.000 | 4.24 | 4.23 | 4.23 | 4.23 | 4.23 |
| 1,360.000 | 4.23 | 4.22 | 4.22 | 4.22 | 4.22 |
| 1,361.000 | 4.22 | 4.21 | 4.21 | 4.21 | 4.21 |
| 1,362.000 | 4.21 | 4.20 | 4.20 | 4.20 | 4.20 |
| 1,363.000 | 4.20 | 4.19 | 4.19 | 4.19 | 4.19 |
| 1,364.000 | 4.19 | 4.18 | 4.18 | 4.18 | 4.18 |
| 1,365.000 | 4.18 | 4.17 | 4.17 | 4.17 | 4.17 |
| 1,366.000 | 4.17 | 4.17 | 4.16 | 4.16 | 4.16 |
| 1,367.000 | 4.16 | 4.16 | 4.15 | 4.15 | 4.15 |
| 1,368.000 | 4.15 | 4.15 | 4.14 | 4.14 | 4.14 |
| 1,369.000 | 4.14 | 4.14 | 4.14 | 4.13 | 4.13 |
| 1,370.000 | 4.13 | 4.13 | 4.13 | 4.12 | 4.12 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,371.000 | 4.12 | 4.12 | 4.12 | 4.11 | 4.11 |
| 1,372.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.10 |
| 1,373.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.09 |
| 1,374.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 1,375.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.08 |
| 1,376.000 | 4.08 | 4.07 | 4.07 | 4.07 | 4.07 |
| 1,377.000 | 4.07 | 4.06 | 4.06 | 4.06 | 4.06 |
| 1,378.000 | 4.06 | 4.06 | 4.05 | 4.05 | 4.05 |
| 1,379.000 | 4.05 | 4.05 | 4.05 | 4.04 | 4.04 |
| 1,380.000 | 4.04 | 4.04 | 4.04 | 4.03 | 4.03 |
| 1,381.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.02 |
| 1,382.000 | 4.02 | 4.02 | 4.02 | 4.02 | 4.02 |
| 1,383.000 | 4.01 | 4.01 | 4.01 | 4.01 | 4.01 |
| 1,384.000 | 4.01 | 4.00 | 4.00 | 4.00 | 4.00 |
| 1,385.000 | 4.00 | 4.00 | 3.99 | 3.99 | 3.99 |
| 1,386.000 | 3.99 | 3.99 | 3.99 | 3.98 | 3.98 |
| 1,387.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.97 |
| 1,388.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 1,389.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 1,390.000 | 3.96 | 3.95 | 3.95 | 3.95 | 3.95 |
| 1,391.000 | 3.95 | 3.95 | 3.95 | 3.94 | 3.94 |
| 1,392.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.93 |
| 1,393.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.93 |
| 1,394.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 1,395.000 | 3.92 | 3.92 | 3.91 | 3.91 | 3.91 |
| 1,396.000 | 3.91 | 3.91 | 3.91 | 3.90 | 3.90 |
| 1,397.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.89 |
| 1,398.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 1,399.000 | 3.89 | 3.88 | 3.88 | 3.88 | 3.88 |
| 1,400.000 | 3.88 | 3.88 | 3.88 | 3.87 | 3.87 |
| 1,401.000 | 3.87 | 3.87 | 3.87 | 3.87 | 3.86 |
| 1,402.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.86 |
| 1,403.000 | 3.86 | 3.85 | 3.85 | 3.85 | 3.85 |
| 1,404.000 | 3.85 | 3.85 | 3.85 | 3.84 | 3.84 |
| 1,405.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.83 |
| 1,406.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 |
| 1,407.000 | 3.83 | 3.82 | 3.82 | 3.82 | 3.82 |
| 1,408.000 | 3.82 | 3.82 | 3.82 | 3.81 | 3.81 |
| 1,409.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 1,410.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 1,411.000 | 3.80 | 3.80 | 3.79 | 3.79 | 3.79 |
| 1,412.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.78 |
| 1,413.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,414.000 | 3.78 | 3.77 | 3.77 | 3.77 | 3.77 |
| 1,415.000 | 3.77 | 3.77 | 3.77 | 3.76 | 3.76 |
| 1,416.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| 1,417.000 | 3.76 | 3.75 | 3.75 | 3.75 | 3.75 |
| 1,418.000 | 3.75 | 3.75 | 3.75 | 3.74 | 3.74 |
| 1,419.000 | 3.74 | 3.74 | 3.74 | 3.74 | 3.74 |
| 1,420.000 | 3.73 | 3.73 | 3.73 | 3.73 | 3.73 |
| 1,421.000 | 3.73 | 3.73 | 3.73 | 3.72 | 3.72 |
| 1,422.000 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 |
| 1,423.000 | 3.71 | 3.71 | 3.71 | 3.71 | 3.71 |
| 1,424.000 | 3.71 | 3.71 | 3.71 | 3.70 | 3.70 |
| 1,425.000 | 3.70 | 3.70 | 3.70 | 3.70 | 3.70 |
| 1,426.000 | 3.70 | 3.69 | 3.69 | 3.69 | 3.69 |
| 1,427.000 | 3.69 | 3.69 | 3.69 | 3.68 | 3.68 |
| 1,428.000 | 3.68 | 3.68 | 3.68 | 3.68 | 3.68 |
| 1,429.000 | 3.68 | 3.67 | 3.67 | 3.67 | 3.67 |
| 1,430.000 | 3.67 | 3.67 | 3.67 | 3.67 | 3.66 |
| 1,431.000 | 3.66 | 3.66 | 3.66 | 3.66 | 3.66 |
| 1,432.000 | 3.66 | 3.66 | 3.65 | 3.65 | 3.65 |
| 1,433.000 | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 |
| 1,434.000 | 3.64 | 3.64 | 3.64 | 3.64 | 3.64 |
| 1,435.000 | 3.64 | 3.64 | 3.64 | 3.63 | 3.63 |
| 1,436.000 | 3.63 | 3.63 | 3.63 | 3.63 | 3.63 |
| 1,437.000 | 3.63 | 3.62 | 3.62 | 3.62 | 3.62 |
| 1,438.000 | 3.62 | 3.62 | 3.62 | 3.62 | 3.61 |
| 1,439.000 | 3.61 | 3.61 | 3.61 | 3.61 | 3.61 |
| 1,440.000 | 3.61 | 3.56 | 3.52 | 3.47 | 3.42 |
| 1,441.000 | 3.38 | 3.33 | 3.29 | 3.24 | 3.20 |
| 1,442.000 | 3.15 | 3.11 | 3.06 | 3.01 | 2.97 |
| 1,443.000 | 2.92 | 2.88 | 2.83 | 2.79 | 2.74 |
| 1,444.000 | 2.70 | 2.65 | 2.61 | 2.56 | 2.51 |
| 1,445.000 | 2.47 | 2.42 | 2.38 | 2.33 | 2.29 |
| 1,446.000 | 2.24 | 2.20 | 2.15 | 2.11 | 2.06 |
| 1,447.000 | 2.02 | 1.97 | 1.93 | 1.88 | 1.84 |
| 1,448.000 | 1.79 | 1.75 | 1.70 | 1.66 | 1.61 |
| 1,449.000 | 1.57 | 1.52 | 1.48 | 1.43 | 1.39 |
| 1,450.000 | 1.34 | 1.30 | 1.25 | 1.21 | 1.16 |
| 1,451.000 | 1.12 | 1.07 | 1.03 | 0.98 | 0.94 |
| 1,452.000 | 0.89 | 0.85 | 0.80 | 0.76 | 0.71 |
| 1,453.000 | 0.67 | 0.62 | 0.58 | 0.53 | 0.49 |
| 1,454.000 | 0.45 | 0.40 | 0.36 | 0.31 | 0.27 |
| 1,455.000 | 0.22 | 0.18 | 0.13 | 0.09 | 0.04 |
| 1,456.000 | 0.00 | (N/A) | (N/A) | (N/A) | (N/A) |

| | |
|---|---|
| Peak Discharge | 12.67 ft³/s |
| Time to Peak | 1,153.200 min |
| Hydrograph Volume | 1.859 ac-ft |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 0.000 | 0.00 | 0.02 | 0.03 | 0.05 | 0.07 |
| 1.000 | 0.08 | 0.10 | 0.11 | 0.13 | 0.15 |
| 2.000 | 0.16 | 0.18 | 0.20 | 0.21 | 0.23 |
| 3.000 | 0.24 | 0.26 | 0.28 | 0.29 | 0.31 |
| 4.000 | 0.33 | 0.34 | 0.36 | 0.37 | 0.39 |
| 5.000 | 0.41 | 0.42 | 0.44 | 0.46 | 0.47 |
| 6.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 7.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 8.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 9.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 10.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 11.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 12.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 13.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 14.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 15.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 16.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 17.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 18.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 19.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 20.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 21.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 22.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 23.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 24.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 25.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 26.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 27.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 28.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 29.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 30.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 31.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 32.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 33.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 34.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 35.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 36.000 | 0.49 | 0.49 | 0.49 | 0.50 | 0.50 |
| 37.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 38.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 39.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 40.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 41.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 42.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 43.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 44.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 45.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 46.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 47.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 48.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 49.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 50.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 51.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 52.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 53.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 54.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 55.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 56.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 57.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 58.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 59.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 60.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 61.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 62.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 63.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 64.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 65.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 66.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 67.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 68.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 69.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 70.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 71.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 72.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 73.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 74.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 75.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 76.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 77.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 78.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 79.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 80.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 81.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 82.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 83.000 | 0.50 | 0.51 | 0.51 | 0.51 | 0.51 |
| 84.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 85.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 86.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 87.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 88.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 89.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 90.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 91.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 92.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 93.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 94.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 95.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 96.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 97.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 98.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 99.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 100.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 101.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 102.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 103.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 104.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 105.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 106.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 107.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 108.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 109.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 110.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 111.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 112.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 113.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 114.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 115.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 116.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 117.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 118.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 119.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 120.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 121.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 122.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 123.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 124.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 125.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 126.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 127.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 128.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 129.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 130.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 131.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 132.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 133.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 134.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 135.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 136.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 137.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 138.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 139.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 140.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 141.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 142.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 143.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 144.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 145.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 146.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 147.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 148.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 149.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 150.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 151.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 152.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 153.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 154.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 155.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 156.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 157.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 158.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 159.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 160.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 161.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 162.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 163.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 164.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 165.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 166.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 167.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 168.000 | 0.52 | 0.52 | 0.53 | 0.53 | 0.53 |
| 169.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 170.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 171.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 172.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 173.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 174.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 175.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 176.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 177.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 178.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 179.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 180.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 181.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 182.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 183.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 184.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 185.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 186.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 187.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 188.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 189.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 190.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 191.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 192.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 193.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 194.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 195.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 196.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 197.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 198.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 199.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 200.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 201.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 202.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 203.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 204.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 205.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 206.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 207.000 | 0.53 | 0.54 | 0.54 | 0.54 | 0.54 |
| 208.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 209.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 210.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 211.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 212.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 213.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 214.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 215.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 216.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 217.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 218.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 219.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 220.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 221.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 222.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 223.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 224.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 225.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 226.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 227.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 228.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 229.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 230.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 231.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 232.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 233.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 234.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 235.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 236.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 237.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 238.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 239.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 240.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 241.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 242.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 243.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.55 |
| 244.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 245.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 246.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 247.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 248.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 249.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 250.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 251.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 252.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 253.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 254.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 255.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 256.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 257.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 258.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 259.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 260.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 261.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 262.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 263.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 264.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 265.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 266.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 267.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 268.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 269.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 270.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 271.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 272.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 273.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 274.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 275.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 276.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 277.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 278.000 | 0.55 | 0.55 | 0.56 | 0.56 | 0.56 |
| 279.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 280.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 281.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 282.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 283.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 284.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 285.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 286.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 287.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 288.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 289.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 290.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 291.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 292.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 293.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 294.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 295.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 296.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 297.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 298.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 299.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 300.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 301.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 302.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 303.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 304.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 305.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 306.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 307.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 308.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 309.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 310.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 311.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 312.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 313.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 314.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 315.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 316.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 317.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 318.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 319.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 320.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 321.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 322.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 323.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 324.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 325.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 326.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 327.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 328.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 329.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 330.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 331.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 332.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 333.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 334.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 335.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 336.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 337.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 338.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 339.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 340.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 341.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 342.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 343.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 344.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 345.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 346.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 347.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 348.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 349.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 350.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 351.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 352.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 353.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 354.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 355.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 356.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 357.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 358.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 359.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 360.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 361.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 362.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 363.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 364.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 365.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 366.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 367.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 368.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 369.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 370.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 371.000 | 0.58 | 0.59 | 0.59 | 0.59 | 0.59 |
| 372.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 373.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 374.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 375.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 376.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 377.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 378.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 379.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 380.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 381.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 382.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 383.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 384.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 385.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 386.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 387.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 388.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 389.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 390.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 391.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 392.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 393.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 394.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 395.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 396.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 397.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 398.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 399.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 400.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 401.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 402.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 403.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 404.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 405.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 406.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 407.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 408.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 409.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 410.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 411.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 412.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 413.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 414.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 415.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 416.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 417.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 418.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 419.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 420.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 421.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 422.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 423.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 424.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 425.000 | 0.60 | 0.60 | 0.61 | 0.61 | 0.61 |
| 426.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 427.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 428.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 429.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 430.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 431.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 432.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 433.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 434.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 435.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 436.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 437.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 438.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 439.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 440.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 441.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 442.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 443.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 444.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 445.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 446.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 447.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 448.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 449.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 450.000 | 0.61 | 0.61 | 0.62 | 0.62 | 0.62 |
| 451.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 452.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 453.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 454.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 455.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 456.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 457.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 458.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 459.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 460.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 461.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 462.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 463.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 464.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 465.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 466.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 467.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 468.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 469.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 470.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 471.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 472.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 473.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 474.000 | 0.62 | 0.63 | 0.63 | 0.63 | 0.63 |
| 475.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 476.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 477.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 478.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 479.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 480.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 481.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 482.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 483.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 484.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 485.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 486.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 487.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 488.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 489.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 490.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 491.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 492.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 493.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 494.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 495.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 496.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.64 |
| 497.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 498.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 499.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 500.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 501.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 502.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 503.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 504.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 505.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 506.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 507.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 508.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 509.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 510.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 511.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 512.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 513.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 514.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 515.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 516.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 517.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 518.000 | 0.64 | 0.65 | 0.65 | 0.65 | 0.65 |
| 519.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 520.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 521.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 522.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 523.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 524.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 525.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 526.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 527.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 528.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 529.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 530.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 531.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 532.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 533.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 534.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 535.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 536.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 537.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 538.000 | 0.65 | 0.65 | 0.66 | 0.66 | 0.66 |
| 539.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 540.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 541.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 542.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 543.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 544.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 545.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 546.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 547.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 548.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 549.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 550.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 551.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 552.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 553.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 554.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 555.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 556.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 557.000 | 0.66 | 0.67 | 0.67 | 0.67 | 0.67 |
| 558.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 559.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 560.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 561.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 562.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 563.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 564.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 565.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 566.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 567.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 568.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 569.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 570.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 571.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 572.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 573.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 574.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 575.000 | 0.67 | 0.68 | 0.68 | 0.68 | 0.68 |
| 576.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 577.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 578.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 579.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 580.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 581.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 582.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 583.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 584.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 585.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 586.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 587.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 588.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 589.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 590.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 591.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 592.000 | 0.68 | 0.68 | 0.69 | 0.69 | 0.69 |
| 593.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 594.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 595.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 596.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 597.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 598.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 599.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 600.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 601.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 602.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 603.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 604.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 605.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 606.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 607.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 608.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.70 |
| 609.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 610.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 611.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 612.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 613.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 614.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 615.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 616.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 617.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 618.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 619.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 620.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 621.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 622.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 623.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 624.000 | 0.70 | 0.70 | 0.70 | 0.71 | 0.71 |
| 625.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 626.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 627.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 628.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 629.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 630.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 631.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 632.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 633.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 634.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 635.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 636.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 637.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 638.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 639.000 | 0.71 | 0.71 | 0.71 | 0.72 | 0.72 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 640.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 641.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 642.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 643.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 644.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 645.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 646.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 647.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 648.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 649.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 650.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 651.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 652.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 653.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 654.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 655.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 656.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 657.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 658.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 659.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 660.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 661.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 662.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 663.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 664.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 665.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 666.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 667.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.74 |
| 668.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 669.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 670.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 671.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 672.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 673.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 674.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 675.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 676.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 677.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 678.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 679.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 680.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 681.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 682.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 683.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 684.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 685.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 686.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 687.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 688.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 689.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 690.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 691.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 692.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 693.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.76 |
| 694.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 695.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 696.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 697.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 698.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 699.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 700.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 701.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 702.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 703.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 704.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 705.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 706.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 707.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 708.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 709.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 710.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 711.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 712.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 713.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 714.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 715.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 716.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 717.000 | 0.77 | 0.77 | 0.77 | 0.78 | 0.78 |
| 718.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 719.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 720.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 721.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 722.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 723.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 724.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 725.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 726.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 727.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 728.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.79 |
| 729.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 730.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 731.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 732.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 733.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 734.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 735.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 736.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 737.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 738.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 739.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.80 |
| 740.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 741.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 742.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 743.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 744.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 745.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 746.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 747.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 748.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 749.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 750.000 | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 |
| 751.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 752.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 753.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 754.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 755.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 756.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 757.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 758.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 759.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 760.000 | 0.81 | 0.82 | 0.82 | 0.82 | 0.82 |
| 761.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| 762.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| 763.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| 764.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| 765.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| 766.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| 767.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| 768.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 769.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.83 |
| 770.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 771.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 772.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 773.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 774.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 775.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 776.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 777.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 778.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 779.000 | 0.83 | 0.84 | 0.84 | 0.84 | 0.84 |
| 780.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 781.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 782.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 783.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 784.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 785.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 786.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 787.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 788.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 789.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 790.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 791.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 792.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 793.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 794.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 795.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 796.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.86 |
| 797.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 798.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 799.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 800.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 801.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 802.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 803.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 804.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 805.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| 806.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| 807.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| 808.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| 809.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| 810.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| 811.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 812.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| 813.000 | 0.87 | 0.88 | 0.88 | 0.88 | 0.88 |
| 814.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| 815.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| 816.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| 817.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| 818.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| 819.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| 820.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.89 |
| 821.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 822.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 823.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 824.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 825.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 826.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 827.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 828.000 | 0.89 | 0.89 | 0.90 | 0.90 | 0.90 |
| 829.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 830.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 831.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 832.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 833.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 834.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 835.000 | 0.90 | 0.90 | 0.90 | 0.91 | 0.91 |
| 836.000 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| 837.000 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| 838.000 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| 839.000 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| 840.000 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| 841.000 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| 842.000 | 0.91 | 0.91 | 0.91 | 0.92 | 0.92 |
| 843.000 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 844.000 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 845.000 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 846.000 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 847.000 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 848.000 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 849.000 | 0.92 | 0.92 | 0.93 | 0.93 | 0.93 |
| 850.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| 851.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| 852.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| 853.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| 854.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 855.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| 856.000 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| 857.000 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| 858.000 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| 859.000 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| 860.000 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| 861.000 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| 862.000 | 0.94 | 0.94 | 0.95 | 0.95 | 0.95 |
| 863.000 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| 864.000 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| 865.000 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| 866.000 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| 867.000 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| 868.000 | 0.95 | 0.95 | 0.95 | 0.96 | 0.96 |
| 869.000 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| 870.000 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| 871.000 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| 872.000 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| 873.000 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| 874.000 | 0.96 | 0.96 | 0.97 | 0.97 | 0.97 |
| 875.000 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| 876.000 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| 877.000 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| 878.000 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| 879.000 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| 880.000 | 0.97 | 0.98 | 0.98 | 0.98 | 0.98 |
| 881.000 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| 882.000 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| 883.000 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| 884.000 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| 885.000 | 0.98 | 0.98 | 0.98 | 0.98 | 0.99 |
| 886.000 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 887.000 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 888.000 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 889.000 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 890.000 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 891.000 | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 |
| 892.000 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 893.000 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 894.000 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 895.000 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 896.000 | 1.00 | 1.00 | 1.00 | 1.00 | 1.01 |
| 897.000 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 898.000 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| 899.000 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| 900.000 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| 901.000 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| 902.000 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 |
| 903.000 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 |
| 904.000 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 |
| 905.000 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 |
| 906.000 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 |
| 907.000 | 1.02 | 1.03 | 1.03 | 1.03 | 1.03 |
| 908.000 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 |
| 909.000 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 |
| 910.000 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 |
| 911.000 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 |
| 912.000 | 1.03 | 1.04 | 1.04 | 1.04 | 1.04 |
| 913.000 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| 914.000 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| 915.000 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| 916.000 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| 917.000 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 918.000 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 919.000 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 920.000 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 921.000 | 1.05 | 1.05 | 1.05 | 1.06 | 1.06 |
| 922.000 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| 923.000 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| 924.000 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| 925.000 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| 926.000 | 1.06 | 1.07 | 1.07 | 1.07 | 1.07 |
| 927.000 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| 928.000 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| 929.000 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| 930.000 | 1.07 | 1.07 | 1.07 | 1.08 | 1.08 |
| 931.000 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 |
| 932.000 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 |
| 933.000 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 |
| 934.000 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 |
| 935.000 | 1.09 | 1.09 | 1.09 | 1.09 | 1.09 |
| 936.000 | 1.09 | 1.09 | 1.09 | 1.09 | 1.09 |
| 937.000 | 1.09 | 1.09 | 1.09 | 1.09 | 1.09 |
| 938.000 | 1.09 | 1.09 | 1.09 | 1.09 | 1.09 |
| 939.000 | 1.09 | 1.10 | 1.10 | 1.10 | 1.10 |
| 940.000 | 1.10 | 1.10 | 1.10 | 1.10 | 1.10 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 941.000 | 1.10 | 1.10 | 1.10 | 1.10 | 1.10 |
| 942.000 | 1.10 | 1.10 | 1.10 | 1.10 | 1.10 |
| 943.000 | 1.10 | 1.11 | 1.11 | 1.11 | 1.11 |
| 944.000 | 1.11 | 1.11 | 1.11 | 1.11 | 1.11 |
| 945.000 | 1.11 | 1.11 | 1.11 | 1.11 | 1.11 |
| 946.000 | 1.11 | 1.11 | 1.11 | 1.11 | 1.11 |
| 947.000 | 1.11 | 1.12 | 1.12 | 1.12 | 1.12 |
| 948.000 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 |
| 949.000 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 |
| 950.000 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 |
| 951.000 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 |
| 952.000 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 |
| 953.000 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 |
| 954.000 | 1.13 | 1.13 | 1.13 | 1.13 | 1.14 |
| 955.000 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| 956.000 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| 957.000 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| 958.000 | 1.14 | 1.14 | 1.15 | 1.15 | 1.15 |
| 959.000 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| 960.000 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| 961.000 | 1.15 | 1.15 | 1.15 | 1.15 | 1.16 |
| 962.000 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 |
| 963.000 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 |
| 964.000 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 |
| 965.000 | 1.16 | 1.16 | 1.17 | 1.17 | 1.17 |
| 966.000 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 |
| 967.000 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 |
| 968.000 | 1.17 | 1.17 | 1.17 | 1.18 | 1.18 |
| 969.000 | 1.18 | 1.18 | 1.18 | 1.18 | 1.18 |
| 970.000 | 1.18 | 1.18 | 1.18 | 1.18 | 1.18 |
| 971.000 | 1.18 | 1.18 | 1.18 | 1.18 | 1.18 |
| 972.000 | 1.19 | 1.19 | 1.19 | 1.19 | 1.19 |
| 973.000 | 1.19 | 1.19 | 1.19 | 1.19 | 1.19 |
| 974.000 | 1.19 | 1.19 | 1.19 | 1.19 | 1.19 |
| 975.000 | 1.19 | 1.20 | 1.20 | 1.20 | 1.20 |
| 976.000 | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 |
| 977.000 | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 |
| 978.000 | 1.20 | 1.21 | 1.21 | 1.21 | 1.21 |
| 979.000 | 1.21 | 1.21 | 1.21 | 1.21 | 1.21 |
| 980.000 | 1.21 | 1.21 | 1.21 | 1.21 | 1.21 |
| 981.000 | 1.21 | 1.22 | 1.22 | 1.22 | 1.22 |
| 982.000 | 1.22 | 1.22 | 1.22 | 1.22 | 1.22 |
| 983.000 | 1.22 | 1.22 | 1.22 | 1.22 | 1.22 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 984.000 | 1.22 | 1.23 | 1.23 | 1.23 | 1.23 |
| 985.000 | 1.23 | 1.23 | 1.23 | 1.23 | 1.23 |
| 986.000 | 1.23 | 1.23 | 1.23 | 1.23 | 1.23 |
| 987.000 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 |
| 988.000 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 |
| 989.000 | 1.24 | 1.24 | 1.24 | 1.24 | 1.25 |
| 990.000 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 |
| 991.000 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 |
| 992.000 | 1.25 | 1.25 | 1.25 | 1.26 | 1.26 |
| 993.000 | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 |
| 994.000 | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 |
| 995.000 | 1.26 | 1.27 | 1.27 | 1.27 | 1.27 |
| 996.000 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 |
| 997.000 | 1.27 | 1.27 | 1.27 | 1.27 | 1.28 |
| 998.000 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 |
| 999.000 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 |
| 1,000.000 | 1.28 | 1.28 | 1.29 | 1.29 | 1.29 |
| 1,001.000 | 1.29 | 1.29 | 1.29 | 1.29 | 1.29 |
| 1,002.000 | 1.29 | 1.29 | 1.29 | 1.29 | 1.30 |
| 1,003.000 | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 |
| 1,004.000 | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 |
| 1,005.000 | 1.30 | 1.31 | 1.31 | 1.31 | 1.31 |
| 1,006.000 | 1.31 | 1.31 | 1.31 | 1.31 | 1.31 |
| 1,007.000 | 1.31 | 1.31 | 1.31 | 1.32 | 1.32 |
| 1,008.000 | 1.32 | 1.32 | 1.32 | 1.32 | 1.32 |
| 1,009.000 | 1.32 | 1.32 | 1.32 | 1.32 | 1.32 |
| 1,010.000 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 |
| 1,011.000 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 |
| 1,012.000 | 1.33 | 1.34 | 1.34 | 1.34 | 1.34 |
| 1,013.000 | 1.34 | 1.34 | 1.34 | 1.34 | 1.34 |
| 1,014.000 | 1.34 | 1.34 | 1.35 | 1.35 | 1.35 |
| 1,015.000 | 1.35 | 1.35 | 1.35 | 1.35 | 1.35 |
| 1,016.000 | 1.35 | 1.35 | 1.35 | 1.36 | 1.36 |
| 1,017.000 | 1.36 | 1.36 | 1.36 | 1.36 | 1.36 |
| 1,018.000 | 1.36 | 1.36 | 1.36 | 1.37 | 1.37 |
| 1,019.000 | 1.37 | 1.37 | 1.37 | 1.37 | 1.37 |
| 1,020.000 | 1.37 | 1.37 | 1.37 | 1.37 | 1.38 |
| 1,021.000 | 1.38 | 1.38 | 1.38 | 1.38 | 1.38 |
| 1,022.000 | 1.38 | 1.38 | 1.38 | 1.38 | 1.39 |
| 1,023.000 | 1.39 | 1.39 | 1.39 | 1.39 | 1.39 |
| 1,024.000 | 1.39 | 1.39 | 1.39 | 1.40 | 1.40 |
| 1,025.000 | 1.40 | 1.40 | 1.40 | 1.40 | 1.40 |
| 1,026.000 | 1.40 | 1.40 | 1.40 | 1.41 | 1.41 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,027.000 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 |
| 1,028.000 | 1.41 | 1.41 | 1.42 | 1.42 | 1.42 |
| 1,029.000 | 1.42 | 1.42 | 1.42 | 1.42 | 1.42 |
| 1,030.000 | 1.42 | 1.42 | 1.43 | 1.43 | 1.43 |
| 1,031.000 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 |
| 1,032.000 | 1.43 | 1.44 | 1.44 | 1.44 | 1.44 |
| 1,033.000 | 1.44 | 1.44 | 1.44 | 1.44 | 1.45 |
| 1,034.000 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |
| 1,035.000 | 1.45 | 1.45 | 1.45 | 1.46 | 1.46 |
| 1,036.000 | 1.46 | 1.46 | 1.46 | 1.46 | 1.46 |
| 1,037.000 | 1.46 | 1.47 | 1.47 | 1.47 | 1.47 |
| 1,038.000 | 1.47 | 1.47 | 1.47 | 1.47 | 1.47 |
| 1,039.000 | 1.48 | 1.48 | 1.48 | 1.48 | 1.48 |
| 1,040.000 | 1.48 | 1.48 | 1.48 | 1.49 | 1.49 |
| 1,041.000 | 1.49 | 1.49 | 1.49 | 1.49 | 1.49 |
| 1,042.000 | 1.49 | 1.50 | 1.50 | 1.50 | 1.50 |
| 1,043.000 | 1.50 | 1.50 | 1.50 | 1.50 | 1.51 |
| 1,044.000 | 1.51 | 1.51 | 1.51 | 1.51 | 1.51 |
| 1,045.000 | 1.51 | 1.52 | 1.52 | 1.52 | 1.52 |
| 1,046.000 | 1.52 | 1.52 | 1.52 | 1.52 | 1.53 |
| 1,047.000 | 1.53 | 1.53 | 1.53 | 1.53 | 1.53 |
| 1,048.000 | 1.53 | 1.54 | 1.54 | 1.54 | 1.54 |
| 1,049.000 | 1.54 | 1.54 | 1.54 | 1.55 | 1.55 |
| 1,050.000 | 1.55 | 1.55 | 1.55 | 1.55 | 1.55 |
| 1,051.000 | 1.56 | 1.56 | 1.56 | 1.56 | 1.56 |
| 1,052.000 | 1.56 | 1.56 | 1.57 | 1.57 | 1.57 |
| 1,053.000 | 1.57 | 1.57 | 1.57 | 1.57 | 1.58 |
| 1,054.000 | 1.58 | 1.58 | 1.58 | 1.58 | 1.58 |
| 1,055.000 | 1.59 | 1.59 | 1.59 | 1.59 | 1.59 |
| 1,056.000 | 1.59 | 1.59 | 1.60 | 1.60 | 1.60 |
| 1,057.000 | 1.60 | 1.60 | 1.60 | 1.61 | 1.61 |
| 1,058.000 | 1.61 | 1.61 | 1.61 | 1.61 | 1.62 |
| 1,059.000 | 1.62 | 1.62 | 1.62 | 1.62 | 1.62 |
| 1,060.000 | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 |
| 1,061.000 | 1.63 | 1.64 | 1.64 | 1.64 | 1.64 |
| 1,062.000 | 1.64 | 1.64 | 1.65 | 1.65 | 1.65 |
| 1,063.000 | 1.65 | 1.65 | 1.65 | 1.66 | 1.66 |
| 1,064.000 | 1.66 | 1.66 | 1.66 | 1.66 | 1.67 |
| 1,065.000 | 1.67 | 1.67 | 1.67 | 1.67 | 1.68 |
| 1,066.000 | 1.68 | 1.68 | 1.68 | 1.68 | 1.68 |
| 1,067.000 | 1.69 | 1.69 | 1.69 | 1.69 | 1.69 |
| 1,068.000 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 |
| 1,069.000 | 1.70 | 1.71 | 1.71 | 1.71 | 1.71 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,070.000 | 1.71 | 1.72 | 1.72 | 1.72 | 1.72 |
| 1,071.000 | 1.72 | 1.73 | 1.73 | 1.73 | 1.73 |
| 1,072.000 | 1.73 | 1.74 | 1.74 | 1.74 | 1.74 |
| 1,073.000 | 1.74 | 1.75 | 1.75 | 1.75 | 1.75 |
| 1,074.000 | 1.75 | 1.76 | 1.76 | 1.76 | 1.76 |
| 1,075.000 | 1.76 | 1.77 | 1.77 | 1.77 | 1.77 |
| 1,076.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 1,077.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 1,078.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.81 |
| 1,079.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.82 |
| 1,080.000 | 1.82 | 1.82 | 1.82 | 1.83 | 1.83 |
| 1,081.000 | 1.83 | 1.83 | 1.84 | 1.84 | 1.84 |
| 1,082.000 | 1.84 | 1.85 | 1.85 | 1.85 | 1.85 |
| 1,083.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.87 |
| 1,084.000 | 1.87 | 1.87 | 1.87 | 1.88 | 1.88 |
| 1,085.000 | 1.88 | 1.88 | 1.89 | 1.89 | 1.89 |
| 1,086.000 | 1.89 | 1.90 | 1.90 | 1.90 | 1.90 |
| 1,087.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.92 |
| 1,088.000 | 1.92 | 1.92 | 1.93 | 1.93 | 1.93 |
| 1,089.000 | 1.93 | 1.94 | 1.94 | 1.94 | 1.95 |
| 1,090.000 | 1.95 | 1.95 | 1.95 | 1.96 | 1.96 |
| 1,091.000 | 1.96 | 1.97 | 1.97 | 1.97 | 1.97 |
| 1,092.000 | 1.98 | 1.98 | 1.98 | 1.99 | 1.99 |
| 1,093.000 | 1.99 | 2.00 | 2.00 | 2.00 | 2.00 |
| 1,094.000 | 2.01 | 2.01 | 2.01 | 2.02 | 2.02 |
| 1,095.000 | 2.02 | 2.03 | 2.03 | 2.03 | 2.04 |
| 1,096.000 | 2.04 | 2.04 | 2.05 | 2.05 | 2.05 |
| 1,097.000 | 2.06 | 2.06 | 2.06 | 2.07 | 2.07 |
| 1,098.000 | 2.07 | 2.08 | 2.08 | 2.08 | 2.09 |
| 1,099.000 | 2.09 | 2.10 | 2.10 | 2.10 | 2.11 |
| 1,100.000 | 2.11 | 2.11 | 2.12 | 2.12 | 2.12 |
| 1,101.000 | 2.13 | 2.13 | 2.14 | 2.14 | 2.14 |
| 1,102.000 | 2.15 | 2.15 | 2.16 | 2.16 | 2.16 |
| 1,103.000 | 2.17 | 2.17 | 2.17 | 2.18 | 2.18 |
| 1,104.000 | 2.19 | 2.19 | 2.20 | 2.20 | 2.20 |
| 1,105.000 | 2.21 | 2.21 | 2.22 | 2.22 | 2.22 |
| 1,106.000 | 2.23 | 2.23 | 2.24 | 2.24 | 2.25 |
| 1,107.000 | 2.25 | 2.26 | 2.26 | 2.26 | 2.27 |
| 1,108.000 | 2.27 | 2.28 | 2.28 | 2.29 | 2.29 |
| 1,109.000 | 2.30 | 2.30 | 2.31 | 2.31 | 2.32 |
| 1,110.000 | 2.32 | 2.33 | 2.33 | 2.34 | 2.34 |
| 1,111.000 | 2.35 | 2.35 | 2.36 | 2.36 | 2.37 |
| 1,112.000 | 2.37 | 2.38 | 2.38 | 2.39 | 2.39 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,113.000 | 2.40 | 2.41 | 2.41 | 2.42 | 2.42 |
| 1,114.000 | 2.43 | 2.43 | 2.44 | 2.44 | 2.45 |
| 1,115.000 | 2.46 | 2.46 | 2.47 | 2.47 | 2.48 |
| 1,116.000 | 2.49 | 2.49 | 2.50 | 2.51 | 2.51 |
| 1,117.000 | 2.52 | 2.52 | 2.53 | 2.54 | 2.54 |
| 1,118.000 | 2.55 | 2.56 | 2.56 | 2.57 | 2.58 |
| 1,119.000 | 2.58 | 2.59 | 2.60 | 2.60 | 2.61 |
| 1,120.000 | 2.62 | 2.63 | 2.63 | 2.64 | 2.65 |
| 1,121.000 | 2.66 | 2.66 | 2.67 | 2.68 | 2.69 |
| 1,122.000 | 2.69 | 2.70 | 2.71 | 2.72 | 2.73 |
| 1,123.000 | 2.73 | 2.74 | 2.75 | 2.76 | 2.77 |
| 1,124.000 | 2.78 | 2.78 | 2.79 | 2.80 | 2.81 |
| 1,125.000 | 2.82 | 2.83 | 2.84 | 2.85 | 2.86 |
| 1,126.000 | 2.87 | 2.88 | 2.88 | 2.89 | 2.90 |
| 1,127.000 | 2.91 | 2.92 | 2.93 | 2.94 | 2.95 |
| 1,128.000 | 2.97 | 2.98 | 2.99 | 3.00 | 3.01 |
| 1,129.000 | 3.02 | 3.03 | 3.04 | 3.05 | 3.06 |
| 1,130.000 | 3.08 | 3.09 | 3.10 | 3.11 | 3.12 |
| 1,131.000 | 3.14 | 3.15 | 3.16 | 3.18 | 3.19 |
| 1,132.000 | 3.20 | 3.22 | 3.23 | 3.24 | 3.26 |
| 1,133.000 | 3.27 | 3.29 | 3.30 | 3.31 | 3.33 |
| 1,134.000 | 3.34 | 3.36 | 3.38 | 3.39 | 3.41 |
| 1,135.000 | 3.42 | 3.44 | 3.46 | 3.47 | 3.49 |
| 1,136.000 | 3.51 | 3.53 | 3.54 | 3.56 | 3.58 |
| 1,137.000 | 3.60 | 3.62 | 3.64 | 3.66 | 3.68 |
| 1,138.000 | 3.70 | 3.72 | 3.74 | 3.77 | 3.79 |
| 1,139.000 | 3.81 | 3.83 | 3.86 | 3.88 | 3.91 |
| 1,140.000 | 3.93 | 3.96 | 3.98 | 4.01 | 4.04 |
| 1,141.000 | 4.07 | 4.09 | 4.12 | 4.15 | 4.18 |
| 1,142.000 | 4.21 | 4.25 | 4.28 | 4.31 | 4.35 |
| 1,143.000 | 4.38 | 4.42 | 4.46 | 4.49 | 4.53 |
| 1,144.000 | 4.57 | 4.62 | 4.66 | 4.70 | 4.75 |
| 1,145.000 | 4.79 | 4.84 | 4.89 | 4.94 | 5.00 |
| 1,146.000 | 5.05 | 5.11 | 5.17 | 5.23 | 5.30 |
| 1,147.000 | 5.36 | 5.43 | 5.51 | 5.58 | 5.66 |
| 1,148.000 | 5.75 | 5.83 | 5.93 | 6.02 | 6.13 |
| 1,149.000 | 6.24 | 6.35 | 6.48 | 6.61 | 6.76 |
| 1,150.000 | 6.91 | 7.08 | 7.27 | 7.47 | 7.70 |
| 1,151.000 | 7.97 | 8.27 | 8.63 | 9.09 | 9.73 |
| 1,152.000 | 11.41 | 12.18 | 12.41 | 12.54 | 12.62 |
| 1,153.000 | 12.66 | 12.67 | 12.66 | 12.63 | 12.58 |
| 1,154.000 | 12.52 | 12.45 | 12.36 | 12.26 | 12.15 |
| 1,155.000 | 12.02 | 11.88 | 11.72 | 11.55 | 11.37 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,156.000 | 11.17 | 10.95 | 10.71 | 10.44 | 10.14 |
| 1,157.000 | 9.81 | 9.43 | 8.99 | 8.45 | 7.72 |
| 1,158.000 | 5.94 | 5.06 | 4.72 | 4.48 | 4.29 |
| 1,159.000 | 4.14 | 4.00 | 3.88 | 3.77 | 3.67 |
| 1,160.000 | 3.59 | 3.50 | 3.43 | 3.36 | 3.29 |
| 1,161.000 | 3.23 | 3.18 | 3.12 | 3.07 | 3.02 |
| 1,162.000 | 2.98 | 2.93 | 2.89 | 2.85 | 2.82 |
| 1,163.000 | 2.78 | 2.74 | 2.71 | 2.68 | 2.65 |
| 1,164.000 | 2.62 | 2.59 | 2.56 | 2.53 | 2.51 |
| 1,165.000 | 2.48 | 2.46 | 2.43 | 2.41 | 2.39 |
| 1,166.000 | 2.37 | 2.35 | 2.33 | 2.31 | 2.29 |
| 1,167.000 | 2.27 | 2.25 | 2.23 | 2.21 | 2.20 |
| 1,168.000 | 2.18 | 2.16 | 2.15 | 2.13 | 2.12 |
| 1,169.000 | 2.10 | 2.09 | 2.07 | 2.06 | 2.05 |
| 1,170.000 | 2.03 | 2.02 | 2.01 | 1.99 | 1.98 |
| 1,171.000 | 1.97 | 1.96 | 1.95 | 1.94 | 1.92 |
| 1,172.000 | 1.91 | 1.90 | 1.89 | 1.88 | 1.87 |
| 1,173.000 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 |
| 1,174.000 | 1.81 | 1.80 | 1.80 | 1.79 | 1.78 |
| 1,175.000 | 1.77 | 1.76 | 1.75 | 1.74 | 1.74 |
| 1,176.000 | 1.73 | 1.72 | 1.71 | 1.70 | 1.70 |
| 1,177.000 | 1.69 | 1.68 | 1.68 | 1.67 | 1.66 |
| 1,178.000 | 1.65 | 1.65 | 1.64 | 1.63 | 1.63 |
| 1,179.000 | 1.62 | 1.61 | 1.61 | 1.60 | 1.59 |
| 1,180.000 | 1.59 | 1.58 | 1.58 | 1.57 | 1.56 |
| 1,181.000 | 1.56 | 1.55 | 1.55 | 1.54 | 1.54 |
| 1,182.000 | 1.53 | 1.52 | 1.52 | 1.51 | 1.51 |
| 1,183.000 | 1.50 | 1.50 | 1.49 | 1.49 | 1.48 |
| 1,184.000 | 1.48 | 1.47 | 1.47 | 1.46 | 1.46 |
| 1,185.000 | 1.45 | 1.45 | 1.44 | 1.44 | 1.44 |
| 1,186.000 | 1.43 | 1.43 | 1.42 | 1.42 | 1.41 |
| 1,187.000 | 1.41 | 1.40 | 1.40 | 1.40 | 1.39 |
| 1,188.000 | 1.39 | 1.38 | 1.38 | 1.38 | 1.37 |
| 1,189.000 | 1.37 | 1.36 | 1.36 | 1.36 | 1.35 |
| 1,190.000 | 1.35 | 1.35 | 1.34 | 1.34 | 1.33 |
| 1,191.000 | 1.33 | 1.33 | 1.32 | 1.32 | 1.32 |
| 1,192.000 | 1.31 | 1.31 | 1.31 | 1.30 | 1.30 |
| 1,193.000 | 1.30 | 1.29 | 1.29 | 1.29 | 1.28 |
| 1,194.000 | 1.28 | 1.28 | 1.27 | 1.27 | 1.27 |
| 1,195.000 | 1.27 | 1.26 | 1.26 | 1.26 | 1.25 |
| 1,196.000 | 1.25 | 1.25 | 1.24 | 1.24 | 1.24 |
| 1,197.000 | 1.24 | 1.23 | 1.23 | 1.23 | 1.22 |
| 1,198.000 | 1.22 | 1.22 | 1.22 | 1.21 | 1.21 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,199.000 | 1.21 | 1.21 | 1.20 | 1.20 | 1.20 |
| 1,200.000 | 1.20 | 1.19 | 1.19 | 1.19 | 1.19 |
| 1,201.000 | 1.18 | 1.18 | 1.18 | 1.18 | 1.17 |
| 1,202.000 | 1.17 | 1.17 | 1.17 | 1.16 | 1.16 |
| 1,203.000 | 1.16 | 1.16 | 1.15 | 1.15 | 1.15 |
| 1,204.000 | 1.15 | 1.15 | 1.14 | 1.14 | 1.14 |
| 1,205.000 | 1.14 | 1.13 | 1.13 | 1.13 | 1.13 |
| 1,206.000 | 1.13 | 1.12 | 1.12 | 1.12 | 1.12 |
| 1,207.000 | 1.12 | 1.11 | 1.11 | 1.11 | 1.11 |
| 1,208.000 | 1.11 | 1.10 | 1.10 | 1.10 | 1.10 |
| 1,209.000 | 1.10 | 1.09 | 1.09 | 1.09 | 1.09 |
| 1,210.000 | 1.09 | 1.08 | 1.08 | 1.08 | 1.08 |
| 1,211.000 | 1.08 | 1.07 | 1.07 | 1.07 | 1.07 |
| 1,212.000 | 1.07 | 1.07 | 1.06 | 1.06 | 1.06 |
| 1,213.000 | 1.06 | 1.06 | 1.05 | 1.05 | 1.05 |
| 1,214.000 | 1.05 | 1.05 | 1.05 | 1.04 | 1.04 |
| 1,215.000 | 1.04 | 1.04 | 1.04 | 1.04 | 1.03 |
| 1,216.000 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 |
| 1,217.000 | 1.03 | 1.02 | 1.02 | 1.02 | 1.02 |
| 1,218.000 | 1.02 | 1.02 | 1.01 | 1.01 | 1.01 |
| 1,219.000 | 1.01 | 1.01 | 1.01 | 1.01 | 1.00 |
| 1,220.000 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 1,221.000 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 1,222.000 | 0.99 | 0.99 | 0.98 | 0.98 | 0.98 |
| 1,223.000 | 0.98 | 0.98 | 0.98 | 0.98 | 0.97 |
| 1,224.000 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| 1,225.000 | 0.97 | 0.96 | 0.96 | 0.96 | 0.96 |
| 1,226.000 | 0.96 | 0.96 | 0.96 | 0.96 | 0.95 |
| 1,227.000 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| 1,228.000 | 0.95 | 0.95 | 0.94 | 0.94 | 0.94 |
| 1,229.000 | 0.94 | 0.94 | 0.94 | 0.94 | 0.93 |
| 1,230.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| 1,231.000 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 |
| 1,232.000 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 1,233.000 | 0.92 | 0.91 | 0.91 | 0.91 | 0.91 |
| 1,234.000 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| 1,235.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 1,236.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.89 |
| 1,237.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 1,238.000 | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 |
| 1,239.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| 1,240.000 | 0.88 | 0.88 | 0.88 | 0.87 | 0.87 |
| 1,241.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,242.000 | 0.87 | 0.87 | 0.87 | 0.86 | 0.86 |
| 1,243.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 1,244.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.85 |
| 1,245.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 1,246.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.84 |
| 1,247.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 1,248.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 1,249.000 | 0.84 | 0.83 | 0.83 | 0.83 | 0.83 |
| 1,250.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 1,251.000 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |
| 1,252.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| 1,253.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.81 |
| 1,254.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 1,255.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 1,256.000 | 0.81 | 0.81 | 0.80 | 0.80 | 0.80 |
| 1,257.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 1,258.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 1,259.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 1,260.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 1,261.000 | 0.79 | 0.79 | 0.79 | 0.78 | 0.78 |
| 1,262.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 1,263.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 1,264.000 | 0.78 | 0.78 | 0.77 | 0.77 | 0.77 |
| 1,265.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 1,266.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 1,267.000 | 0.77 | 0.77 | 0.76 | 0.76 | 0.76 |
| 1,268.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 1,269.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 1,270.000 | 0.76 | 0.76 | 0.75 | 0.75 | 0.75 |
| 1,271.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 1,272.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 1,273.000 | 0.75 | 0.75 | 0.75 | 0.74 | 0.74 |
| 1,274.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 1,275.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 1,276.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 1,277.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 1,278.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 1,279.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 1,280.000 | 0.73 | 0.73 | 0.72 | 0.72 | 0.72 |
| 1,281.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 1,282.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 1,283.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 1,284.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,285.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 1,286.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 1,287.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.70 |
| 1,288.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 1,289.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 1,290.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 1,291.000 | 0.70 | 0.70 | 0.70 | 0.69 | 0.69 |
| 1,292.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 1,293.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 1,294.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 1,295.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.68 |
| 1,296.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 1,297.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 1,298.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 1,299.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 1,300.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 1,301.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 1,302.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 1,303.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 1,304.000 | 0.67 | 0.67 | 0.67 | 0.66 | 0.66 |
| 1,305.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 1,306.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 1,307.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 1,308.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 1,309.000 | 0.66 | 0.65 | 0.65 | 0.65 | 0.65 |
| 1,310.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 1,311.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 1,312.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 1,313.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 1,314.000 | 0.65 | 0.65 | 0.64 | 0.64 | 0.64 |
| 1,315.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 1,316.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 1,317.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 1,318.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 1,319.000 | 0.64 | 0.64 | 0.64 | 0.63 | 0.63 |
| 1,320.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 1,321.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 1,322.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 1,323.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 1,324.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 1,325.000 | 0.63 | 0.63 | 0.62 | 0.62 | 0.62 |
| 1,326.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 1,327.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,328.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 1,329.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 1,330.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 1,331.000 | 0.62 | 0.61 | 0.61 | 0.61 | 0.61 |
| 1,332.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 1,333.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 1,334.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 1,335.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 1,336.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 1,337.000 | 0.61 | 0.61 | 0.61 | 0.60 | 0.60 |
| 1,338.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 1,339.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 1,340.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 1,341.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 1,342.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 1,343.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 1,344.000 | 0.60 | 0.59 | 0.59 | 0.59 | 0.59 |
| 1,345.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 1,346.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 1,347.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 1,348.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 1,349.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 1,350.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 1,351.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 1,352.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 1,353.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 1,354.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 1,355.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 1,356.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 1,357.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 1,358.000 | 0.58 | 0.58 | 0.57 | 0.57 | 0.57 |
| 1,359.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 1,360.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 1,361.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 1,362.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 1,363.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 1,364.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 1,365.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 1,366.000 | 0.57 | 0.56 | 0.56 | 0.56 | 0.56 |
| 1,367.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 1,368.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 1,369.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 1,370.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,371.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 1,372.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 1,373.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 1,374.000 | 0.56 | 0.55 | 0.55 | 0.55 | 0.55 |
| 1,375.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 1,376.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 1,377.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 1,378.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 1,379.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 1,380.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 1,381.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 1,382.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 1,383.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 1,384.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 1,385.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 1,386.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 1,387.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 1,388.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 1,389.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 1,390.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 1,391.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 1,392.000 | 0.54 | 0.53 | 0.53 | 0.53 | 0.53 |
| 1,393.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 1,394.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 1,395.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 1,396.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 1,397.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 1,398.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 1,399.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 1,400.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 1,401.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.52 |
| 1,402.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 1,403.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 1,404.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 1,405.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 1,406.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 1,407.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 1,408.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 1,409.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 1,410.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 1,411.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 1,412.000 | 0.52 | 0.51 | 0.51 | 0.51 | 0.51 |
| 1,413.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,414.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 1,415.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 1,416.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 1,417.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 1,418.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 1,419.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 1,420.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 1,421.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 1,422.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 1,423.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,424.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,425.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,426.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,427.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,428.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,429.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,430.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,431.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,432.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,433.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 1,434.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.49 |
| 1,435.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 1,436.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 1,437.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 1,438.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 1,439.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 1,440.000 | 0.49 | 0.47 | 0.46 | 0.44 | 0.42 |
| 1,441.000 | 0.41 | 0.39 | 0.38 | 0.36 | 0.34 |
| 1,442.000 | 0.33 | 0.31 | 0.29 | 0.28 | 0.26 |
| 1,443.000 | 0.24 | 0.23 | 0.21 | 0.20 | 0.18 |
| 1,444.000 | 0.16 | 0.15 | 0.13 | 0.11 | 0.10 |
| 1,445.000 | 0.08 | 0.07 | 0.05 | 0.03 | 0.02 |
| 1,446.000 | 0.00 | (N/A) | (N/A) | (N/A) | (N/A) |

| | |
|---|---|
| Peak Discharge | 24.06 ft³/s |
| Time to Peak | 1,153.000 min |
| Hydrograph Volume | 1.493 ac-ft |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 0.000 | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 |
| 1.000 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 |
| 2.000 | 0.04 | 0.05 | 0.05 | 0.06 | 0.06 |
| 3.000 | 0.06 | 0.07 | 0.07 | 0.08 | 0.08 |
| 4.000 | 0.09 | 0.09 | 0.09 | 0.10 | 0.10 |
| 5.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 8.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 9.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 10.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 11.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 12.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 13.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 14.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 15.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 16.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 17.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 18.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 19.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 20.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 21.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 22.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 23.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 24.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 25.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 26.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 27.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 28.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 29.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 30.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 31.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 32.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 33.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 34.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 35.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 36.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 37.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 38.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 39.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 40.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 41.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 42.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 43.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 44.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 45.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 46.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 47.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 48.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 49.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 50.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 51.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 52.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 53.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 54.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 55.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 56.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 57.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 58.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 59.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 60.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 61.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 62.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 63.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 64.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 65.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 66.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 67.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 68.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 69.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 70.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 71.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 72.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 73.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 74.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 75.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 76.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 77.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 78.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 79.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 80.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 81.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 82.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 83.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 84.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 85.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 86.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 87.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 88.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 89.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 90.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 91.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 92.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 93.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 94.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 95.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 96.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 97.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 98.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 99.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 100.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 101.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 102.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 103.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 104.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 105.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 106.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 107.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 108.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 109.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 110.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 111.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 112.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 113.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 114.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 115.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 116.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 117.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 118.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 119.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 120.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 121.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 122.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 123.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 124.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 125.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 126.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 127.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 128.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 129.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 130.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 131.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 132.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 133.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 134.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 135.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 136.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 137.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 138.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 139.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 140.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 141.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 142.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 143.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 144.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 145.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 146.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 147.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 148.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 149.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 150.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 151.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 152.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 153.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 154.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 155.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 156.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 157.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 158.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 159.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 160.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 161.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 162.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 163.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 164.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 165.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 166.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 167.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 168.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.12 |
| 169.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 170.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 171.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 172.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 173.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 174.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 175.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 176.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 177.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 178.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 179.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 180.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 181.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 182.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 183.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 184.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 185.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 186.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 187.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 188.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 189.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 190.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 191.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 192.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 193.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 194.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 195.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 196.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 197.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 198.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 199.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 200.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 201.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 202.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 203.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 204.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 205.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 206.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 207.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 208.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 209.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 210.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 211.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 212.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 213.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 214.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 215.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 216.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 217.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 218.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 219.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 220.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 221.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 222.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 223.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 224.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 225.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 226.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 227.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 228.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 229.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 230.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 231.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 232.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 233.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 234.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 235.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 236.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 237.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 238.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 239.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 240.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 241.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 242.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 243.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 244.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 245.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 246.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 247.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 248.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 249.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 250.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 251.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 252.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 253.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 254.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 255.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 256.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 257.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 258.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 259.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 260.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 261.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 262.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 263.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 264.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 265.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 266.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 267.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 268.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 269.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 270.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 271.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 272.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 273.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 274.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 275.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 276.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 277.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 278.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 279.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 280.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 281.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 282.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 283.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 284.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 285.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 286.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 287.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 288.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 289.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 290.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 291.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 292.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 293.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 294.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 295.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 296.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 297.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 298.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 299.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 300.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 301.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 302.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 303.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 304.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 305.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 306.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 307.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 308.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 309.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 310.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 311.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 312.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 313.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 314.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 315.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 316.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 317.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 318.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 319.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 320.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 321.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 322.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 323.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 324.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 325.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 326.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 327.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 328.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 329.000 | 0.12 | 0.13 | 0.13 | 0.13 | 0.13 |
| 330.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 331.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 332.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 333.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 334.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 335.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 336.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 337.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 338.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 339.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 340.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 341.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 342.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 343.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 344.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 345.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 346.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 347.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 348.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 349.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 350.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 351.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 352.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 353.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 354.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 355.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 356.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 357.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 358.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 359.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 360.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 361.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 362.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 363.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 364.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 365.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 366.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 367.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 368.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 369.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 370.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 371.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 372.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 373.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 374.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 375.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 376.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 377.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 378.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 379.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 380.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 381.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 382.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 383.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 384.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 385.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 386.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 387.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 388.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 389.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 390.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 391.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 392.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 393.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 394.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 395.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 396.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 397.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 398.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 399.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 400.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 401.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 402.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 403.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 404.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 405.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 406.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 407.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 408.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 409.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 410.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 411.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 412.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 413.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 414.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 415.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 416.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 417.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 418.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 419.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 420.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 421.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 422.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 423.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 424.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 425.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 426.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 427.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 428.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 429.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 430.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 431.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 432.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 433.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 434.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 435.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 436.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 437.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 438.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 439.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 440.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 441.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 442.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 443.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 444.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 445.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 446.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 447.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 448.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 449.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 450.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 451.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 452.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 453.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.14 |
| 454.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 455.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 456.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 457.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 458.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 459.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 460.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 461.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 462.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 463.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 464.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 465.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 466.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 467.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 468.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 469.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 470.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 471.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 472.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 473.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 474.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 475.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 476.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 477.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 478.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 479.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 480.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 481.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 482.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 483.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 484.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 485.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 486.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 487.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 488.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 489.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 490.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 491.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 492.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 493.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 494.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 495.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 496.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 497.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 498.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 499.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 500.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 501.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 502.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 503.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 504.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 505.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 506.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 507.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 508.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 509.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 510.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 511.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 512.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 513.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 514.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 515.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 516.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 517.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 518.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 519.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 520.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 521.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 522.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 523.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 524.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 525.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 526.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 527.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 528.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 529.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 530.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 531.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 532.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 533.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 534.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 535.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 536.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 537.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 538.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 539.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 540.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 541.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 542.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 543.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 544.000 | 0.15 | 0.15 | 0.15 | 0.16 | 0.16 |
| 545.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 546.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 547.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 548.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 549.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 550.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 551.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 552.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 553.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 554.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 555.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 556.000 | 0.16 | 0.16 | 0.16 | 0.17 | 0.17 |
| 557.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 558.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 559.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 560.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 561.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 562.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 563.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 564.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 565.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 566.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 567.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 568.000 | 0.17 | 0.18 | 0.18 | 0.18 | 0.18 |
| 569.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 570.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 571.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 572.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 573.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 574.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 575.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 576.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 577.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 578.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 579.000 | 0.18 | 0.19 | 0.19 | 0.19 | 0.19 |
| 580.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 581.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 582.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 583.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 584.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 585.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 586.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 587.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 588.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 589.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.20 |
| 590.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| 591.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| 592.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| 593.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| 594.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| 595.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| 596.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 597.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| 598.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| 599.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.21 |
| 600.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 601.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 602.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 603.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 604.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 605.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 606.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 607.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 608.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 609.000 | 0.21 | 0.21 | 0.21 | 0.22 | 0.22 |
| 610.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 611.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 612.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 613.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 614.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 615.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 616.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 617.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 618.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 619.000 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 620.000 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 621.000 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 622.000 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 623.000 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 624.000 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 625.000 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 626.000 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 627.000 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 628.000 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| 629.000 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| 630.000 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| 631.000 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| 632.000 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| 633.000 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| 634.000 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| 635.000 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| 636.000 | 0.24 | 0.24 | 0.24 | 0.25 | 0.25 |
| 637.000 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| 638.000 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| 639.000 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 640.000 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| 641.000 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| 642.000 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| 643.000 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| 644.000 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| 645.000 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 646.000 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 647.000 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 648.000 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 649.000 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 650.000 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 651.000 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 652.000 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 653.000 | 0.26 | 0.27 | 0.27 | 0.27 | 0.27 |
| 654.000 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| 655.000 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| 656.000 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| 657.000 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| 658.000 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| 659.000 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| 660.000 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| 661.000 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |
| 662.000 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |
| 663.000 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |
| 664.000 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |
| 665.000 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |
| 666.000 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |
| 667.000 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |
| 668.000 | 0.28 | 0.28 | 0.29 | 0.29 | 0.29 |
| 669.000 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 |
| 670.000 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 |
| 671.000 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 |
| 672.000 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 |
| 673.000 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 |
| 674.000 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 |
| 675.000 | 0.29 | 0.29 | 0.29 | 0.29 | 0.30 |
| 676.000 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| 677.000 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| 678.000 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| 679.000 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| 680.000 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| 681.000 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| 682.000 | 0.30 | 0.30 | 0.30 | 0.30 | 0.31 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 683.000 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| 684.000 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| 685.000 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| 686.000 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| 687.000 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| 688.000 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| 689.000 | 0.31 | 0.31 | 0.31 | 0.32 | 0.32 |
| 690.000 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 |
| 691.000 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 |
| 692.000 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 |
| 693.000 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 |
| 694.000 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 |
| 695.000 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 |
| 696.000 | 0.32 | 0.33 | 0.33 | 0.33 | 0.33 |
| 697.000 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| 698.000 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| 699.000 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| 700.000 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| 701.000 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| 702.000 | 0.33 | 0.33 | 0.33 | 0.34 | 0.34 |
| 703.000 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 |
| 704.000 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 |
| 705.000 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 |
| 706.000 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 |
| 707.000 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 |
| 708.000 | 0.34 | 0.34 | 0.34 | 0.34 | 0.35 |
| 709.000 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| 710.000 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| 711.000 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| 712.000 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| 713.000 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| 714.000 | 0.35 | 0.35 | 0.35 | 0.35 | 0.36 |
| 715.000 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| 716.000 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| 717.000 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| 718.000 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| 719.000 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| 720.000 | 0.36 | 0.36 | 0.36 | 0.36 | 0.37 |
| 721.000 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 |
| 722.000 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 |
| 723.000 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 |
| 724.000 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 |
| 725.000 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 726.000 | 0.37 | 0.37 | 0.38 | 0.38 | 0.38 |
| 727.000 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 |
| 728.000 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 |
| 729.000 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 |
| 730.000 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 |
| 731.000 | 0.38 | 0.38 | 0.38 | 0.38 | 0.39 |
| 732.000 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 |
| 733.000 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 |
| 734.000 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 |
| 735.000 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 |
| 736.000 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 |
| 737.000 | 0.39 | 0.40 | 0.40 | 0.40 | 0.40 |
| 738.000 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| 739.000 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| 740.000 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| 741.000 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| 742.000 | 0.40 | 0.40 | 0.41 | 0.41 | 0.41 |
| 743.000 | 0.41 | 0.41 | 0.41 | 0.41 | 0.41 |
| 744.000 | 0.41 | 0.41 | 0.41 | 0.41 | 0.41 |
| 745.000 | 0.41 | 0.41 | 0.41 | 0.41 | 0.41 |
| 746.000 | 0.41 | 0.41 | 0.41 | 0.41 | 0.41 |
| 747.000 | 0.41 | 0.41 | 0.41 | 0.42 | 0.42 |
| 748.000 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 |
| 749.000 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 |
| 750.000 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 |
| 751.000 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 |
| 752.000 | 0.42 | 0.42 | 0.42 | 0.43 | 0.43 |
| 753.000 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 |
| 754.000 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 |
| 755.000 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 |
| 756.000 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 |
| 757.000 | 0.43 | 0.43 | 0.44 | 0.44 | 0.44 |
| 758.000 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 |
| 759.000 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 |
| 760.000 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 |
| 761.000 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 |
| 762.000 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 |
| 763.000 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 |
| 764.000 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 |
| 765.000 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 |
| 766.000 | 0.45 | 0.45 | 0.45 | 0.46 | 0.46 |
| 767.000 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 |
| 768.000 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 769.000 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 |
| 770.000 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 |
| 771.000 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 |
| 772.000 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 |
| 773.000 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 |
| 774.000 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 |
| 775.000 | 0.47 | 0.47 | 0.48 | 0.48 | 0.48 |
| 776.000 | 0.48 | 0.48 | 0.48 | 0.48 | 0.48 |
| 777.000 | 0.48 | 0.48 | 0.48 | 0.48 | 0.48 |
| 778.000 | 0.48 | 0.48 | 0.48 | 0.48 | 0.48 |
| 779.000 | 0.48 | 0.48 | 0.48 | 0.49 | 0.49 |
| 780.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 781.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 782.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| 783.000 | 0.49 | 0.49 | 0.49 | 0.49 | 0.50 |
| 784.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 785.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 786.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 787.000 | 0.50 | 0.50 | 0.50 | 0.50 | 0.51 |
| 788.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 789.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 790.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| 791.000 | 0.51 | 0.51 | 0.51 | 0.51 | 0.52 |
| 792.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 793.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 794.000 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| 795.000 | 0.52 | 0.52 | 0.52 | 0.53 | 0.53 |
| 796.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 797.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 798.000 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| 799.000 | 0.53 | 0.53 | 0.54 | 0.54 | 0.54 |
| 800.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 801.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 802.000 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| 803.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 804.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 805.000 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 806.000 | 0.55 | 0.55 | 0.55 | 0.56 | 0.56 |
| 807.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 808.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 809.000 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| 810.000 | 0.56 | 0.57 | 0.57 | 0.57 | 0.57 |
| 811.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 812.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 813.000 | 0.57 | 0.57 | 0.57 | 0.58 | 0.58 |
| 814.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 815.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 816.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| 817.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 818.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 819.000 | 0.59 | 0.59 | 0.59 | 0.59 | 0.59 |
| 820.000 | 0.59 | 0.59 | 0.60 | 0.60 | 0.60 |
| 821.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 822.000 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 823.000 | 0.60 | 0.60 | 0.60 | 0.61 | 0.61 |
| 824.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 825.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| 826.000 | 0.61 | 0.61 | 0.61 | 0.61 | 0.62 |
| 827.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 828.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 |
| 829.000 | 0.62 | 0.62 | 0.62 | 0.62 | 0.63 |
| 830.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 831.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| 832.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.64 |
| 833.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 834.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| 835.000 | 0.64 | 0.64 | 0.64 | 0.64 | 0.65 |
| 836.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 837.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 838.000 | 0.65 | 0.65 | 0.65 | 0.65 | 0.66 |
| 839.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 840.000 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| 841.000 | 0.66 | 0.66 | 0.66 | 0.67 | 0.67 |
| 842.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 843.000 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| 844.000 | 0.67 | 0.67 | 0.68 | 0.68 | 0.68 |
| 845.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 846.000 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| 847.000 | 0.68 | 0.69 | 0.69 | 0.69 | 0.69 |
| 848.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| 849.000 | 0.69 | 0.69 | 0.69 | 0.69 | 0.70 |
| 850.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 851.000 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 852.000 | 0.70 | 0.70 | 0.70 | 0.71 | 0.71 |
| 853.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| 854.000 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 855.000 | 0.71 | 0.72 | 0.72 | 0.72 | 0.72 |
| 856.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| 857.000 | 0.72 | 0.72 | 0.72 | 0.72 | 0.73 |
| 858.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 859.000 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| 860.000 | 0.73 | 0.74 | 0.74 | 0.74 | 0.74 |
| 861.000 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| 862.000 | 0.74 | 0.74 | 0.74 | 0.75 | 0.75 |
| 863.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 864.000 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 865.000 | 0.75 | 0.76 | 0.76 | 0.76 | 0.76 |
| 866.000 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 867.000 | 0.76 | 0.76 | 0.77 | 0.77 | 0.77 |
| 868.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| 869.000 | 0.77 | 0.77 | 0.77 | 0.77 | 0.78 |
| 870.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 871.000 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| 872.000 | 0.78 | 0.79 | 0.79 | 0.79 | 0.79 |
| 873.000 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| 874.000 | 0.79 | 0.79 | 0.80 | 0.80 | 0.80 |
| 875.000 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 876.000 | 0.80 | 0.80 | 0.80 | 0.81 | 0.81 |
| 877.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| 878.000 | 0.81 | 0.81 | 0.81 | 0.81 | 0.82 |
| 879.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| 880.000 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| 881.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 882.000 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| 883.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 884.000 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 885.000 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 |
| 886.000 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 887.000 | 0.85 | 0.86 | 0.86 | 0.86 | 0.86 |
| 888.000 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 889.000 | 0.86 | 0.87 | 0.87 | 0.87 | 0.87 |
| 890.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| 891.000 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| 892.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| 893.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| 894.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| 895.000 | 0.88 | 0.88 | 0.88 | 0.88 | 0.89 |
| 896.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 897.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 898.000 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 899.000 | 0.89 | 0.89 | 0.90 | 0.90 | 0.90 |
| 900.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 901.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 902.000 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 903.000 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| 904.000 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| 905.000 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| 906.000 | 0.91 | 0.91 | 0.92 | 0.92 | 0.92 |
| 907.000 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 908.000 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 909.000 | 0.92 | 0.92 | 0.92 | 0.92 | 0.93 |
| 910.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| 911.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| 912.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| 913.000 | 0.93 | 0.94 | 0.94 | 0.94 | 0.94 |
| 914.000 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| 915.000 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| 916.000 | 0.94 | 0.94 | 0.95 | 0.95 | 0.95 |
| 917.000 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| 918.000 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| 919.000 | 0.95 | 0.95 | 0.95 | 0.96 | 0.96 |
| 920.000 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| 921.000 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| 922.000 | 0.96 | 0.96 | 0.96 | 0.97 | 0.97 |
| 923.000 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| 924.000 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| 925.000 | 0.97 | 0.97 | 0.97 | 0.98 | 0.98 |
| 926.000 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| 927.000 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| 928.000 | 0.98 | 0.98 | 0.98 | 0.99 | 0.99 |
| 929.000 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 930.000 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 931.000 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 |
| 932.000 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 933.000 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 934.000 | 1.00 | 1.01 | 1.01 | 1.01 | 1.01 |
| 935.000 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| 936.000 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| 937.000 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 |
| 938.000 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 |
| 939.000 | 1.02 | 1.02 | 1.02 | 1.03 | 1.03 |
| 940.000 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 941.000 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 |
| 942.000 | 1.03 | 1.04 | 1.04 | 1.04 | 1.04 |
| 943.000 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| 944.000 | 1.04 | 1.04 | 1.04 | 1.04 | 1.05 |
| 945.000 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 946.000 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 947.000 | 1.05 | 1.06 | 1.06 | 1.06 | 1.06 |
| 948.000 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| 949.000 | 1.06 | 1.06 | 1.06 | 1.06 | 1.07 |
| 950.000 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| 951.000 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| 952.000 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 |
| 953.000 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 |
| 954.000 | 1.08 | 1.08 | 1.09 | 1.09 | 1.09 |
| 955.000 | 1.09 | 1.09 | 1.09 | 1.09 | 1.09 |
| 956.000 | 1.09 | 1.09 | 1.09 | 1.09 | 1.10 |
| 957.000 | 1.10 | 1.10 | 1.10 | 1.10 | 1.10 |
| 958.000 | 1.10 | 1.10 | 1.10 | 1.10 | 1.10 |
| 959.000 | 1.11 | 1.11 | 1.11 | 1.11 | 1.11 |
| 960.000 | 1.11 | 1.11 | 1.11 | 1.11 | 1.11 |
| 961.000 | 1.11 | 1.12 | 1.12 | 1.12 | 1.12 |
| 962.000 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 |
| 963.000 | 1.12 | 1.13 | 1.13 | 1.13 | 1.13 |
| 964.000 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 |
| 965.000 | 1.13 | 1.13 | 1.14 | 1.14 | 1.14 |
| 966.000 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| 967.000 | 1.14 | 1.14 | 1.15 | 1.15 | 1.15 |
| 968.000 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| 969.000 | 1.15 | 1.15 | 1.16 | 1.16 | 1.16 |
| 970.000 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 |
| 971.000 | 1.16 | 1.16 | 1.17 | 1.17 | 1.17 |
| 972.000 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 |
| 973.000 | 1.17 | 1.17 | 1.18 | 1.18 | 1.18 |
| 974.000 | 1.18 | 1.18 | 1.18 | 1.18 | 1.18 |
| 975.000 | 1.18 | 1.19 | 1.19 | 1.19 | 1.19 |
| 976.000 | 1.19 | 1.19 | 1.19 | 1.19 | 1.19 |
| 977.000 | 1.19 | 1.20 | 1.20 | 1.20 | 1.20 |
| 978.000 | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 |
| 979.000 | 1.21 | 1.21 | 1.21 | 1.21 | 1.21 |
| 980.000 | 1.21 | 1.21 | 1.21 | 1.21 | 1.22 |
| 981.000 | 1.22 | 1.22 | 1.22 | 1.22 | 1.22 |
| 982.000 | 1.22 | 1.22 | 1.22 | 1.23 | 1.23 |
| 983.000 | 1.23 | 1.23 | 1.23 | 1.23 | 1.23 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 984.000 | 1.23 | 1.24 | 1.24 | 1.24 | 1.24 |
| 985.000 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 |
| 986.000 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 |
| 987.000 | 1.25 | 1.25 | 1.25 | 1.26 | 1.26 |
| 988.000 | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 |
| 989.000 | 1.26 | 1.27 | 1.27 | 1.27 | 1.27 |
| 990.000 | 1.27 | 1.27 | 1.27 | 1.27 | 1.28 |
| 991.000 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 |
| 992.000 | 1.28 | 1.28 | 1.29 | 1.29 | 1.29 |
| 993.000 | 1.29 | 1.29 | 1.29 | 1.29 | 1.29 |
| 994.000 | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 |
| 995.000 | 1.30 | 1.30 | 1.30 | 1.31 | 1.31 |
| 996.000 | 1.31 | 1.31 | 1.31 | 1.31 | 1.31 |
| 997.000 | 1.32 | 1.32 | 1.32 | 1.32 | 1.32 |
| 998.000 | 1.32 | 1.32 | 1.33 | 1.33 | 1.33 |
| 999.000 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 |
| 1,000.000 | 1.34 | 1.34 | 1.34 | 1.34 | 1.34 |
| 1,001.000 | 1.34 | 1.34 | 1.35 | 1.35 | 1.35 |
| 1,002.000 | 1.35 | 1.35 | 1.35 | 1.35 | 1.36 |
| 1,003.000 | 1.36 | 1.36 | 1.36 | 1.36 | 1.36 |
| 1,004.000 | 1.37 | 1.37 | 1.37 | 1.37 | 1.37 |
| 1,005.000 | 1.37 | 1.37 | 1.38 | 1.38 | 1.38 |
| 1,006.000 | 1.38 | 1.38 | 1.38 | 1.38 | 1.39 |
| 1,007.000 | 1.39 | 1.39 | 1.39 | 1.39 | 1.39 |
| 1,008.000 | 1.40 | 1.40 | 1.40 | 1.40 | 1.40 |
| 1,009.000 | 1.40 | 1.40 | 1.41 | 1.41 | 1.41 |
| 1,010.000 | 1.41 | 1.41 | 1.41 | 1.42 | 1.42 |
| 1,011.000 | 1.42 | 1.42 | 1.42 | 1.42 | 1.43 |
| 1,012.000 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 |
| 1,013.000 | 1.44 | 1.44 | 1.44 | 1.44 | 1.44 |
| 1,014.000 | 1.44 | 1.45 | 1.45 | 1.45 | 1.45 |
| 1,015.000 | 1.45 | 1.45 | 1.46 | 1.46 | 1.46 |
| 1,016.000 | 1.46 | 1.46 | 1.46 | 1.47 | 1.47 |
| 1,017.000 | 1.47 | 1.47 | 1.47 | 1.47 | 1.48 |
| 1,018.000 | 1.48 | 1.48 | 1.48 | 1.48 | 1.48 |
| 1,019.000 | 1.49 | 1.49 | 1.49 | 1.49 | 1.49 |
| 1,020.000 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| 1,021.000 | 1.50 | 1.51 | 1.51 | 1.51 | 1.51 |
| 1,022.000 | 1.51 | 1.52 | 1.52 | 1.52 | 1.52 |
| 1,023.000 | 1.52 | 1.53 | 1.53 | 1.53 | 1.53 |
| 1,024.000 | 1.53 | 1.54 | 1.54 | 1.54 | 1.54 |
| 1,025.000 | 1.54 | 1.54 | 1.55 | 1.55 | 1.55 |
| 1,026.000 | 1.55 | 1.55 | 1.56 | 1.56 | 1.56 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,027.000 | 1.56 | 1.56 | 1.57 | 1.57 | 1.57 |
| 1,028.000 | 1.57 | 1.57 | 1.58 | 1.58 | 1.58 |
| 1,029.000 | 1.58 | 1.58 | 1.59 | 1.59 | 1.59 |
| 1,030.000 | 1.59 | 1.60 | 1.60 | 1.60 | 1.60 |
| 1,031.000 | 1.60 | 1.61 | 1.61 | 1.61 | 1.61 |
| 1,032.000 | 1.61 | 1.62 | 1.62 | 1.62 | 1.62 |
| 1,033.000 | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 |
| 1,034.000 | 1.64 | 1.64 | 1.64 | 1.64 | 1.65 |
| 1,035.000 | 1.65 | 1.65 | 1.65 | 1.65 | 1.66 |
| 1,036.000 | 1.66 | 1.66 | 1.66 | 1.67 | 1.67 |
| 1,037.000 | 1.67 | 1.67 | 1.68 | 1.68 | 1.68 |
| 1,038.000 | 1.68 | 1.68 | 1.69 | 1.69 | 1.69 |
| 1,039.000 | 1.69 | 1.70 | 1.70 | 1.70 | 1.70 |
| 1,040.000 | 1.71 | 1.71 | 1.71 | 1.71 | 1.72 |
| 1,041.000 | 1.72 | 1.72 | 1.72 | 1.73 | 1.73 |
| 1,042.000 | 1.73 | 1.73 | 1.74 | 1.74 | 1.74 |
| 1,043.000 | 1.74 | 1.75 | 1.75 | 1.75 | 1.75 |
| 1,044.000 | 1.76 | 1.76 | 1.76 | 1.77 | 1.77 |
| 1,045.000 | 1.77 | 1.77 | 1.78 | 1.78 | 1.78 |
| 1,046.000 | 1.78 | 1.79 | 1.79 | 1.79 | 1.80 |
| 1,047.000 | 1.80 | 1.80 | 1.80 | 1.81 | 1.81 |
| 1,048.000 | 1.81 | 1.81 | 1.82 | 1.82 | 1.82 |
| 1,049.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.84 |
| 1,050.000 | 1.84 | 1.84 | 1.85 | 1.85 | 1.85 |
| 1,051.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.87 |
| 1,052.000 | 1.87 | 1.87 | 1.88 | 1.88 | 1.88 |
| 1,053.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.90 |
| 1,054.000 | 1.90 | 1.90 | 1.91 | 1.91 | 1.91 |
| 1,055.000 | 1.92 | 1.92 | 1.92 | 1.93 | 1.93 |
| 1,056.000 | 1.93 | 1.94 | 1.94 | 1.94 | 1.95 |
| 1,057.000 | 1.95 | 1.95 | 1.96 | 1.96 | 1.96 |
| 1,058.000 | 1.97 | 1.97 | 1.97 | 1.98 | 1.98 |
| 1,059.000 | 1.98 | 1.99 | 1.99 | 1.99 | 2.00 |
| 1,060.000 | 2.00 | 2.00 | 2.01 | 2.01 | 2.01 |
| 1,061.000 | 2.02 | 2.02 | 2.03 | 2.03 | 2.03 |
| 1,062.000 | 2.04 | 2.04 | 2.04 | 2.05 | 2.05 |
| 1,063.000 | 2.05 | 2.06 | 2.06 | 2.07 | 2.07 |
| 1,064.000 | 2.07 | 2.08 | 2.08 | 2.09 | 2.09 |
| 1,065.000 | 2.09 | 2.10 | 2.10 | 2.10 | 2.11 |
| 1,066.000 | 2.11 | 2.11 | 2.12 | 2.12 | 2.12 |
| 1,067.000 | 2.12 | 2.13 | 2.13 | 2.13 | 2.14 |
| 1,068.000 | 2.14 | 2.14 | 2.15 | 2.15 | 2.15 |
| 1,069.000 | 2.16 | 2.16 | 2.16 | 2.16 | 2.17 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,070.000 | 2.17 | 2.17 | 2.18 | 2.18 | 2.18 |
| 1,071.000 | 2.19 | 2.19 | 2.19 | 2.20 | 2.20 |
| 1,072.000 | 2.20 | 2.21 | 2.21 | 2.21 | 2.22 |
| 1,073.000 | 2.22 | 2.22 | 2.23 | 2.23 | 2.23 |
| 1,074.000 | 2.24 | 2.24 | 2.24 | 2.25 | 2.25 |
| 1,075.000 | 2.26 | 2.26 | 2.26 | 2.27 | 2.27 |
| 1,076.000 | 2.27 | 2.28 | 2.28 | 2.28 | 2.29 |
| 1,077.000 | 2.29 | 2.30 | 2.30 | 2.30 | 2.31 |
| 1,078.000 | 2.31 | 2.31 | 2.32 | 2.32 | 2.33 |
| 1,079.000 | 2.33 | 2.33 | 2.34 | 2.34 | 2.34 |
| 1,080.000 | 2.35 | 2.35 | 2.36 | 2.36 | 2.36 |
| 1,081.000 | 2.37 | 2.37 | 2.38 | 2.38 | 2.39 |
| 1,082.000 | 2.39 | 2.39 | 2.40 | 2.40 | 2.41 |
| 1,083.000 | 2.41 | 2.41 | 2.42 | 2.42 | 2.43 |
| 1,084.000 | 2.43 | 2.44 | 2.44 | 2.45 | 2.45 |
| 1,085.000 | 2.45 | 2.46 | 2.46 | 2.47 | 2.47 |
| 1,086.000 | 2.48 | 2.48 | 2.49 | 2.49 | 2.50 |
| 1,087.000 | 2.50 | 2.50 | 2.51 | 2.51 | 2.52 |
| 1,088.000 | 2.52 | 2.53 | 2.53 | 2.54 | 2.54 |
| 1,089.000 | 2.55 | 2.55 | 2.56 | 2.56 | 2.57 |
| 1,090.000 | 2.57 | 2.58 | 2.58 | 2.59 | 2.59 |
| 1,091.000 | 2.60 | 2.60 | 2.61 | 2.61 | 2.62 |
| 1,092.000 | 2.63 | 2.63 | 2.64 | 2.64 | 2.65 |
| 1,093.000 | 2.65 | 2.66 | 2.66 | 2.67 | 2.67 |
| 1,094.000 | 2.68 | 2.69 | 2.69 | 2.70 | 2.70 |
| 1,095.000 | 2.71 | 2.71 | 2.72 | 2.73 | 2.73 |
| 1,096.000 | 2.74 | 2.74 | 2.75 | 2.76 | 2.76 |
| 1,097.000 | 2.77 | 2.78 | 2.78 | 2.79 | 2.79 |
| 1,098.000 | 2.80 | 2.81 | 2.81 | 2.82 | 2.83 |
| 1,099.000 | 2.83 | 2.84 | 2.85 | 2.85 | 2.86 |
| 1,100.000 | 2.87 | 2.87 | 2.88 | 2.89 | 2.89 |
| 1,101.000 | 2.90 | 2.91 | 2.91 | 2.92 | 2.93 |
| 1,102.000 | 2.94 | 2.94 | 2.95 | 2.96 | 2.97 |
| 1,103.000 | 2.97 | 2.98 | 2.99 | 3.00 | 3.00 |
| 1,104.000 | 3.01 | 3.02 | 3.03 | 3.03 | 3.04 |
| 1,105.000 | 3.05 | 3.06 | 3.07 | 3.07 | 3.08 |
| 1,106.000 | 3.09 | 3.10 | 3.11 | 3.12 | 3.12 |
| 1,107.000 | 3.13 | 3.14 | 3.15 | 3.16 | 3.17 |
| 1,108.000 | 3.18 | 3.19 | 3.20 | 3.20 | 3.21 |
| 1,109.000 | 3.22 | 3.23 | 3.24 | 3.25 | 3.26 |
| 1,110.000 | 3.27 | 3.28 | 3.29 | 3.30 | 3.31 |
| 1,111.000 | 3.32 | 3.33 | 3.34 | 3.35 | 3.36 |
| 1,112.000 | 3.37 | 3.38 | 3.39 | 3.40 | 3.41 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,113.000 | 3.42 | 3.43 | 3.45 | 3.46 | 3.47 |
| 1,114.000 | 3.48 | 3.49 | 3.50 | 3.51 | 3.53 |
| 1,115.000 | 3.54 | 3.55 | 3.56 | 3.57 | 3.59 |
| 1,116.000 | 3.60 | 3.61 | 3.62 | 3.64 | 3.65 |
| 1,117.000 | 3.66 | 3.67 | 3.69 | 3.70 | 3.71 |
| 1,118.000 | 3.73 | 3.74 | 3.76 | 3.77 | 3.78 |
| 1,119.000 | 3.80 | 3.81 | 3.83 | 3.84 | 3.86 |
| 1,120.000 | 3.87 | 3.89 | 3.90 | 3.92 | 3.93 |
| 1,121.000 | 3.95 | 3.96 | 3.98 | 4.00 | 4.01 |
| 1,122.000 | 4.03 | 4.04 | 4.05 | 4.07 | 4.08 |
| 1,123.000 | 4.10 | 4.11 | 4.13 | 4.15 | 4.16 |
| 1,124.000 | 4.18 | 4.19 | 4.21 | 4.23 | 4.24 |
| 1,125.000 | 4.26 | 4.28 | 4.29 | 4.31 | 4.33 |
| 1,126.000 | 4.35 | 4.36 | 4.38 | 4.40 | 4.42 |
| 1,127.000 | 4.44 | 4.46 | 4.48 | 4.50 | 4.52 |
| 1,128.000 | 4.54 | 4.56 | 4.58 | 4.60 | 4.62 |
| 1,129.000 | 4.64 | 4.66 | 4.69 | 4.71 | 4.73 |
| 1,130.000 | 4.75 | 4.78 | 4.80 | 4.82 | 4.85 |
| 1,131.000 | 4.87 | 4.90 | 4.92 | 4.95 | 4.97 |
| 1,132.000 | 5.00 | 5.03 | 5.05 | 5.08 | 5.11 |
| 1,133.000 | 5.14 | 5.17 | 5.20 | 5.23 | 5.26 |
| 1,134.000 | 5.29 | 5.32 | 5.35 | 5.38 | 5.41 |
| 1,135.000 | 5.44 | 5.47 | 5.50 | 5.53 | 5.56 |
| 1,136.000 | 5.60 | 5.63 | 5.66 | 5.70 | 5.73 |
| 1,137.000 | 5.77 | 5.81 | 5.84 | 5.88 | 5.92 |
| 1,138.000 | 5.96 | 6.00 | 6.04 | 6.09 | 6.13 |
| 1,139.000 | 6.17 | 6.22 | 6.26 | 6.31 | 6.36 |
| 1,140.000 | 6.41 | 6.46 | 6.51 | 6.56 | 6.62 |
| 1,141.000 | 6.67 | 6.73 | 6.79 | 6.85 | 6.91 |
| 1,142.000 | 6.97 | 7.03 | 7.10 | 7.17 | 7.24 |
| 1,143.000 | 7.31 | 7.38 | 7.46 | 7.54 | 7.62 |
| 1,144.000 | 7.70 | 7.79 | 7.88 | 7.97 | 8.07 |
| 1,145.000 | 8.17 | 8.27 | 8.38 | 8.49 | 8.60 |
| 1,146.000 | 8.71 | 8.83 | 8.95 | 9.07 | 9.20 |
| 1,147.000 | 9.34 | 9.48 | 9.63 | 9.79 | 9.95 |
| 1,148.000 | 10.13 | 10.31 | 10.51 | 10.71 | 10.94 |
| 1,149.000 | 11.17 | 11.42 | 11.70 | 11.98 | 12.26 |
| 1,150.000 | 12.56 | 12.89 | 13.26 | 13.66 | 14.11 |
| 1,151.000 | 14.63 | 15.24 | 15.96 | 16.89 | 18.19 |
| 1,152.000 | 21.67 | 23.25 | 23.69 | 23.92 | 24.03 |
| 1,153.000 | 24.06 | 24.03 | 23.96 | 23.84 | 23.67 |
| 1,154.000 | 23.48 | 23.24 | 22.97 | 22.67 | 22.33 |
| 1,155.000 | 21.95 | 21.52 | 21.05 | 20.52 | 19.93 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,156.000 | 19.27 | 18.50 | 17.60 | 16.49 | 14.99 |
| 1,157.000 | 11.20 | 9.19 | 8.45 | 7.89 | 7.46 |
| 1,158.000 | 7.11 | 6.81 | 6.55 | 6.33 | 6.12 |
| 1,159.000 | 5.94 | 5.77 | 5.62 | 5.48 | 5.35 |
| 1,160.000 | 5.23 | 5.10 | 4.99 | 4.88 | 4.78 |
| 1,161.000 | 4.69 | 4.60 | 4.51 | 4.43 | 4.36 |
| 1,162.000 | 4.28 | 4.22 | 4.15 | 4.09 | 4.03 |
| 1,163.000 | 3.96 | 3.90 | 3.84 | 3.78 | 3.72 |
| 1,164.000 | 3.67 | 3.62 | 3.57 | 3.52 | 3.47 |
| 1,165.000 | 3.43 | 3.38 | 3.34 | 3.30 | 3.26 |
| 1,166.000 | 3.22 | 3.19 | 3.15 | 3.12 | 3.08 |
| 1,167.000 | 3.05 | 3.02 | 2.99 | 2.96 | 2.93 |
| 1,168.000 | 2.90 | 2.87 | 2.84 | 2.82 | 2.79 |
| 1,169.000 | 2.77 | 2.74 | 2.72 | 2.69 | 2.67 |
| 1,170.000 | 2.65 | 2.63 | 2.61 | 2.58 | 2.56 |
| 1,171.000 | 2.54 | 2.52 | 2.51 | 2.49 | 2.47 |
| 1,172.000 | 2.45 | 2.43 | 2.42 | 2.40 | 2.38 |
| 1,173.000 | 2.37 | 2.35 | 2.33 | 2.32 | 2.30 |
| 1,174.000 | 2.29 | 2.27 | 2.26 | 2.24 | 2.23 |
| 1,175.000 | 2.22 | 2.20 | 2.19 | 2.18 | 2.16 |
| 1,176.000 | 2.15 | 2.14 | 2.13 | 2.11 | 2.10 |
| 1,177.000 | 2.09 | 2.07 | 2.06 | 2.04 | 2.03 |
| 1,178.000 | 2.01 | 2.00 | 1.99 | 1.97 | 1.96 |
| 1,179.000 | 1.94 | 1.93 | 1.92 | 1.91 | 1.89 |
| 1,180.000 | 1.88 | 1.87 | 1.86 | 1.85 | 1.83 |
| 1,181.000 | 1.82 | 1.81 | 1.80 | 1.79 | 1.78 |
| 1,182.000 | 1.77 | 1.76 | 1.75 | 1.74 | 1.73 |
| 1,183.000 | 1.72 | 1.71 | 1.70 | 1.69 | 1.68 |
| 1,184.000 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 |
| 1,185.000 | 1.62 | 1.61 | 1.60 | 1.60 | 1.59 |
| 1,186.000 | 1.58 | 1.57 | 1.56 | 1.56 | 1.55 |
| 1,187.000 | 1.54 | 1.53 | 1.52 | 1.52 | 1.51 |
| 1,188.000 | 1.50 | 1.49 | 1.49 | 1.48 | 1.47 |
| 1,189.000 | 1.47 | 1.46 | 1.45 | 1.45 | 1.44 |
| 1,190.000 | 1.43 | 1.43 | 1.42 | 1.41 | 1.41 |
| 1,191.000 | 1.40 | 1.39 | 1.39 | 1.38 | 1.38 |
| 1,192.000 | 1.37 | 1.36 | 1.36 | 1.35 | 1.35 |
| 1,193.000 | 1.34 | 1.34 | 1.33 | 1.32 | 1.32 |
| 1,194.000 | 1.31 | 1.31 | 1.30 | 1.30 | 1.29 |
| 1,195.000 | 1.29 | 1.28 | 1.28 | 1.27 | 1.27 |
| 1,196.000 | 1.26 | 1.26 | 1.25 | 1.25 | 1.24 |
| 1,197.000 | 1.24 | 1.23 | 1.23 | 1.22 | 1.22 |
| 1,198.000 | 1.21 | 1.21 | 1.21 | 1.20 | 1.20 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,199.000 | 1.19 | 1.19 | 1.18 | 1.18 | 1.18 |
| 1,200.000 | 1.17 | 1.17 | 1.16 | 1.16 | 1.16 |
| 1,201.000 | 1.15 | 1.15 | 1.14 | 1.14 | 1.14 |
| 1,202.000 | 1.13 | 1.13 | 1.12 | 1.12 | 1.12 |
| 1,203.000 | 1.11 | 1.11 | 1.11 | 1.10 | 1.10 |
| 1,204.000 | 1.10 | 1.09 | 1.09 | 1.08 | 1.08 |
| 1,205.000 | 1.08 | 1.07 | 1.07 | 1.07 | 1.06 |
| 1,206.000 | 1.06 | 1.06 | 1.05 | 1.05 | 1.05 |
| 1,207.000 | 1.04 | 1.04 | 1.04 | 1.04 | 1.03 |
| 1,208.000 | 1.03 | 1.03 | 1.02 | 1.02 | 1.02 |
| 1,209.000 | 1.01 | 1.01 | 1.01 | 1.01 | 1.00 |
| 1,210.000 | 1.00 | 1.00 | 0.99 | 0.99 | 0.99 |
| 1,211.000 | 0.99 | 0.98 | 0.98 | 0.98 | 0.97 |
| 1,212.000 | 0.97 | 0.97 | 0.97 | 0.96 | 0.96 |
| 1,213.000 | 0.96 | 0.96 | 0.95 | 0.95 | 0.95 |
| 1,214.000 | 0.95 | 0.94 | 0.94 | 0.94 | 0.94 |
| 1,215.000 | 0.93 | 0.93 | 0.93 | 0.93 | 0.92 |
| 1,216.000 | 0.92 | 0.92 | 0.92 | 0.91 | 0.91 |
| 1,217.000 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 |
| 1,218.000 | 0.90 | 0.90 | 0.89 | 0.89 | 0.89 |
| 1,219.000 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 |
| 1,220.000 | 0.88 | 0.87 | 0.87 | 0.87 | 0.87 |
| 1,221.000 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 |
| 1,222.000 | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 |
| 1,223.000 | 0.82 | 0.82 | 0.82 | 0.81 | 0.81 |
| 1,224.000 | 0.81 | 0.80 | 0.80 | 0.79 | 0.79 |
| 1,225.000 | 0.79 | 0.78 | 0.78 | 0.78 | 0.77 |
| 1,226.000 | 0.77 | 0.77 | 0.76 | 0.76 | 0.76 |
| 1,227.000 | 0.75 | 0.75 | 0.75 | 0.74 | 0.74 |
| 1,228.000 | 0.74 | 0.73 | 0.73 | 0.73 | 0.72 |
| 1,229.000 | 0.72 | 0.72 | 0.71 | 0.71 | 0.71 |
| 1,230.000 | 0.71 | 0.70 | 0.70 | 0.70 | 0.69 |
| 1,231.000 | 0.69 | 0.69 | 0.68 | 0.68 | 0.68 |
| 1,232.000 | 0.68 | 0.67 | 0.67 | 0.67 | 0.66 |
| 1,233.000 | 0.66 | 0.66 | 0.66 | 0.65 | 0.65 |
| 1,234.000 | 0.65 | 0.65 | 0.64 | 0.64 | 0.64 |
| 1,235.000 | 0.63 | 0.63 | 0.63 | 0.63 | 0.62 |
| 1,236.000 | 0.62 | 0.62 | 0.62 | 0.61 | 0.61 |
| 1,237.000 | 0.61 | 0.61 | 0.60 | 0.60 | 0.60 |
| 1,238.000 | 0.60 | 0.59 | 0.59 | 0.59 | 0.59 |
| 1,239.000 | 0.58 | 0.58 | 0.58 | 0.58 | 0.57 |
| 1,240.000 | 0.57 | 0.57 | 0.57 | 0.57 | 0.56 |
| 1,241.000 | 0.56 | 0.56 | 0.56 | 0.55 | 0.55 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,242.000 | 0.55 | 0.55 | 0.55 | 0.54 | 0.54 |
| 1,243.000 | 0.54 | 0.54 | 0.53 | 0.53 | 0.53 |
| 1,244.000 | 0.53 | 0.53 | 0.52 | 0.52 | 0.52 |
| 1,245.000 | 0.52 | 0.52 | 0.51 | 0.51 | 0.51 |
| 1,246.000 | 0.51 | 0.51 | 0.50 | 0.50 | 0.50 |
| 1,247.000 | 0.50 | 0.50 | 0.49 | 0.49 | 0.49 |
| 1,248.000 | 0.49 | 0.49 | 0.48 | 0.48 | 0.48 |
| 1,249.000 | 0.48 | 0.48 | 0.47 | 0.47 | 0.47 |
| 1,250.000 | 0.47 | 0.47 | 0.47 | 0.46 | 0.46 |
| 1,251.000 | 0.46 | 0.46 | 0.46 | 0.45 | 0.45 |
| 1,252.000 | 0.45 | 0.45 | 0.45 | 0.45 | 0.44 |
| 1,253.000 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 |
| 1,254.000 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 |
| 1,255.000 | 0.43 | 0.42 | 0.42 | 0.42 | 0.42 |
| 1,256.000 | 0.42 | 0.42 | 0.41 | 0.41 | 0.41 |
| 1,257.000 | 0.41 | 0.41 | 0.41 | 0.40 | 0.40 |
| 1,258.000 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| 1,259.000 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 |
| 1,260.000 | 0.39 | 0.38 | 0.38 | 0.38 | 0.38 |
| 1,261.000 | 0.38 | 0.38 | 0.38 | 0.37 | 0.37 |
| 1,262.000 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 |
| 1,263.000 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| 1,264.000 | 0.36 | 0.36 | 0.36 | 0.35 | 0.35 |
| 1,265.000 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| 1,266.000 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 |
| 1,267.000 | 0.34 | 0.34 | 0.34 | 0.33 | 0.33 |
| 1,268.000 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| 1,269.000 | 0.33 | 0.32 | 0.32 | 0.32 | 0.32 |
| 1,270.000 | 0.32 | 0.32 | 0.32 | 0.32 | 0.31 |
| 1,271.000 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| 1,272.000 | 0.31 | 0.31 | 0.31 | 0.30 | 0.30 |
| 1,273.000 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| 1,274.000 | 0.30 | 0.30 | 0.29 | 0.29 | 0.29 |
| 1,275.000 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 |
| 1,276.000 | 0.29 | 0.28 | 0.28 | 0.28 | 0.28 |
| 1,277.000 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |
| 1,278.000 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| 1,279.000 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| 1,280.000 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 1,281.000 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 1,282.000 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| 1,283.000 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| 1,284.000 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,285.000 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| 1,286.000 | 0.24 | 0.23 | 0.23 | 0.23 | 0.23 |
| 1,287.000 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 1,288.000 | 0.23 | 0.23 | 0.23 | 0.22 | 0.22 |
| 1,289.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 1,290.000 | 0.22 | 0.22 | 0.22 | 0.22 | 0.21 |
| 1,291.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 1,292.000 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 1,293.000 | 0.21 | 0.20 | 0.20 | 0.20 | 0.20 |
| 1,294.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| 1,295.000 | 0.20 | 0.20 | 0.20 | 0.20 | 0.19 |
| 1,296.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 1,297.000 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 1,298.000 | 0.19 | 0.19 | 0.18 | 0.18 | 0.18 |
| 1,299.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 1,300.000 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 1,301.000 | 0.18 | 0.17 | 0.17 | 0.17 | 0.17 |
| 1,302.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 1,303.000 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 1,304.000 | 0.17 | 0.16 | 0.16 | 0.16 | 0.16 |
| 1,305.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 1,306.000 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| 1,307.000 | 0.16 | 0.15 | 0.15 | 0.15 | 0.15 |
| 1,308.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 1,309.000 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 1,310.000 | 0.15 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,311.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,312.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,313.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,314.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,315.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,316.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,317.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,318.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,319.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,320.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,321.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,322.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,323.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,324.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,325.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,326.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,327.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,328.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| 1,329.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.13 |
| 1,330.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,331.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,332.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,333.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,334.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,335.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,336.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,337.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,338.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,339.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,340.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,341.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,342.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,343.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,344.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,345.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,346.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,347.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,348.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,349.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,350.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,351.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,352.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,353.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,354.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,355.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,356.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,357.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,358.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,359.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,360.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 1,361.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,362.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,363.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,364.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,365.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,366.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,367.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,368.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,369.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,370.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,371.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,372.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,373.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,374.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,375.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,376.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,377.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,378.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,379.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,380.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,381.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,382.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,383.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,384.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,385.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,386.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,387.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,388.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,389.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,390.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,391.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,392.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,393.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,394.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,395.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,396.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,397.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,398.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,399.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,400.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 1,401.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,402.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,403.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,404.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,405.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,406.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,407.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,408.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,409.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,410.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,411.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,412.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,413.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,414.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,415.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,416.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,417.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,418.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,419.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,420.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,421.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,422.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,423.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,424.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,425.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,426.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,427.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,428.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,429.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,430.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,431.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,432.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,433.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,434.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,435.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,436.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,437.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,438.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,439.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 1,440.000 | 0.11 | 0.10 | 0.10 | 0.09 | 0.09 |
| 1,441.000 | 0.09 | 0.08 | 0.08 | 0.07 | 0.07 |
| 1,442.000 | 0.06 | 0.06 | 0.06 | 0.05 | 0.05 |
| 1,443.000 | 0.04 | 0.04 | 0.03 | 0.03 | 0.03 |
| 1,444.000 | 0.02 | 0.02 | 0.01 | 0.01 | 0.00 |
| 1,445.000 | 0.00 | (N/A) | (N/A) | (N/A) | (N/A) |

| | |
|---|---|
| Peak Discharge | 27.96 ft³/s |
| Time to Peak | 1,155.200 min |
| Hydrograph Volume | 6.692 ac-ft |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 0.000 | 0.00 | 0.02 | 0.04 | 0.06 | 0.08 |
| 1.000 | 0.10 | 0.12 | 0.15 | 0.17 | 0.19 |
| 2.000 | 0.21 | 0.23 | 0.25 | 0.27 | 0.29 |
| 3.000 | 0.31 | 0.33 | 0.35 | 0.37 | 0.39 |
| 4.000 | 0.42 | 0.44 | 0.46 | 0.48 | 0.50 |
| 5.000 | 0.52 | 0.54 | 0.56 | 0.58 | 0.60 |
| 6.000 | 0.62 | 0.64 | 0.66 | 0.68 | 0.71 |
| 7.000 | 0.73 | 0.75 | 0.77 | 0.79 | 0.81 |
| 8.000 | 0.83 | 0.85 | 0.87 | 0.89 | 0.91 |
| 9.000 | 0.93 | 0.95 | 0.98 | 1.00 | 1.02 |
| 10.000 | 1.04 | 1.06 | 1.08 | 1.10 | 1.12 |
| 11.000 | 1.14 | 1.16 | 1.18 | 1.20 | 1.22 |
| 12.000 | 1.25 | 1.27 | 1.29 | 1.31 | 1.33 |
| 13.000 | 1.35 | 1.37 | 1.39 | 1.41 | 1.43 |
| 14.000 | 1.45 | 1.47 | 1.49 | 1.51 | 1.54 |
| 15.000 | 1.56 | 1.58 | 1.60 | 1.62 | 1.64 |
| 16.000 | 1.66 | 1.68 | 1.70 | 1.72 | 1.74 |
| 17.000 | 1.76 | 1.76 | 1.76 | 1.76 | 1.76 |
| 18.000 | 1.76 | 1.76 | 1.76 | 1.76 | 1.77 |
| 19.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 20.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 21.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 22.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 23.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 24.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 25.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 26.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 27.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 28.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 29.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 30.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 31.000 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| 32.000 | 1.77 | 1.77 | 1.78 | 1.78 | 1.78 |
| 33.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 34.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 35.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 36.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 37.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 38.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 39.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 40.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 41.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 42.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 43.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 44.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.78 |
| 45.000 | 1.78 | 1.78 | 1.78 | 1.78 | 1.79 |
| 46.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 47.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 48.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 49.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 50.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 51.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 52.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 53.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 54.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 55.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 56.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 57.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 58.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 59.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 60.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 61.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 62.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 63.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 64.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 65.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 66.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 67.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 68.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 69.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 70.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 71.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 72.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 73.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 74.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 75.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 76.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 77.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 78.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 79.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 80.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 81.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 82.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 83.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 84.000 | 1.81 | 1.81 | 1.81 | 1.82 | 1.82 |
| 85.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 86.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 87.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 88.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 89.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 90.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 91.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 92.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 93.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 94.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 95.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 96.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 97.000 | 1.82 | 1.83 | 1.83 | 1.83 | 1.83 |
| 98.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 99.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 100.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 101.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 102.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 103.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 104.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 105.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 106.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 107.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 108.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 109.000 | 1.83 | 1.83 | 1.84 | 1.84 | 1.84 |
| 110.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 111.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 112.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 113.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 114.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 115.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 116.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 117.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 118.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 119.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 120.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 121.000 | 1.84 | 1.84 | 1.84 | 1.85 | 1.85 |
| 122.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 123.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 124.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 125.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 126.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 127.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 128.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 129.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 130.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 131.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 132.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 133.000 | 1.85 | 1.85 | 1.86 | 1.86 | 1.86 |
| 134.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 135.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 136.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 137.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 138.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 139.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 140.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 141.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 142.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 143.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 144.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 145.000 | 1.86 | 1.87 | 1.87 | 1.87 | 1.87 |
| 146.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 147.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 148.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 149.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 150.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 151.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 152.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 153.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 154.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 155.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 156.000 | 1.87 | 1.87 | 1.87 | 1.88 | 1.88 |
| 157.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 158.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 159.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 160.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 161.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 162.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 163.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 164.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 165.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 166.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 167.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.89 |
| 168.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 169.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 170.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 171.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 172.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 173.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 174.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 175.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 176.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 177.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 178.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 179.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 180.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 181.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 182.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 183.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 184.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 185.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 186.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 187.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 188.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 189.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 190.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 191.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 192.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 193.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 194.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 195.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 196.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 197.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 198.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 199.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 200.000 | 1.91 | 1.91 | 1.91 | 1.92 | 1.92 |
| 201.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 202.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 203.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 204.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 205.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 206.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 207.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 208.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 209.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 210.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 211.000 | 1.92 | 1.93 | 1.93 | 1.93 | 1.93 |
| 212.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 213.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 214.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 215.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 216.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 217.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 218.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 219.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 220.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 221.000 | 1.93 | 1.93 | 1.93 | 1.94 | 1.94 |
| 222.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 223.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 224.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 225.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 226.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 227.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 228.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 229.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 230.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 231.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 232.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 233.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 234.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 235.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 236.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 237.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 238.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 239.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 240.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 241.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 242.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 243.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 244.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 245.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 246.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 247.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 248.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 249.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 250.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 251.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 252.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 253.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 |
| 254.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 |
| 255.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 |
| 256.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 |
| 257.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 |
| 258.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 |
| 259.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 |
| 260.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 |
| 261.000 | 1.97 | 1.97 | 1.97 | 1.98 | 1.98 |
| 262.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 263.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 264.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 265.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 266.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 267.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 268.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 269.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 270.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 271.000 | 1.98 | 1.99 | 1.99 | 1.99 | 1.99 |
| 272.000 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| 273.000 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| 274.000 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| 275.000 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| 276.000 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| 277.000 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| 278.000 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| 279.000 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| 280.000 | 1.99 | 1.99 | 1.99 | 1.99 | 2.00 |
| 281.000 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 282.000 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 283.000 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 284.000 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 285.000 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 286.000 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 287.000 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 288.000 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 289.000 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 290.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |
| 291.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |
| 292.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |
| 293.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |
| 294.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |
| 295.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 296.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |
| 297.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |
| 298.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |
| 299.000 | 2.01 | 2.02 | 2.02 | 2.02 | 2.02 |
| 300.000 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 |
| 301.000 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 |
| 302.000 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 |
| 303.000 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 |
| 304.000 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 |
| 305.000 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 |
| 306.000 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 |
| 307.000 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 |
| 308.000 | 2.02 | 2.03 | 2.03 | 2.03 | 2.03 |
| 309.000 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 |
| 310.000 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 |
| 311.000 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 |
| 312.000 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 |
| 313.000 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 |
| 314.000 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 |
| 315.000 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 |
| 316.000 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 |
| 317.000 | 2.03 | 2.04 | 2.04 | 2.04 | 2.04 |
| 318.000 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 |
| 319.000 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 |
| 320.000 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 |
| 321.000 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 |
| 322.000 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 |
| 323.000 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 |
| 324.000 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 |
| 325.000 | 2.04 | 2.04 | 2.04 | 2.04 | 2.05 |
| 326.000 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 |
| 327.000 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 |
| 328.000 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 |
| 329.000 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 |
| 330.000 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 |
| 331.000 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 |
| 332.000 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 |
| 333.000 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 |
| 334.000 | 2.05 | 2.05 | 2.06 | 2.06 | 2.06 |
| 335.000 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 |
| 336.000 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 |
| 337.000 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 |
| 338.000 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 339.000 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 |
| 340.000 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 |
| 341.000 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 |
| 342.000 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 |
| 343.000 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 |
| 344.000 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 |
| 345.000 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 |
| 346.000 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 |
| 347.000 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 |
| 348.000 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 |
| 349.000 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 |
| 350.000 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 |
| 351.000 | 2.07 | 2.07 | 2.08 | 2.08 | 2.08 |
| 352.000 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 |
| 353.000 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 |
| 354.000 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 |
| 355.000 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 |
| 356.000 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 |
| 357.000 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 |
| 358.000 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 |
| 359.000 | 2.08 | 2.08 | 2.08 | 2.09 | 2.09 |
| 360.000 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 |
| 361.000 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 |
| 362.000 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 |
| 363.000 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 |
| 364.000 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 |
| 365.000 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 |
| 366.000 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 |
| 367.000 | 2.09 | 2.09 | 2.09 | 2.10 | 2.10 |
| 368.000 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| 369.000 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| 370.000 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| 371.000 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| 372.000 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| 373.000 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| 374.000 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| 375.000 | 2.10 | 2.10 | 2.10 | 2.11 | 2.11 |
| 376.000 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 |
| 377.000 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 |
| 378.000 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 |
| 379.000 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 |
| 380.000 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 |
| 381.000 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 382.000 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 |
| 383.000 | 2.11 | 2.11 | 2.11 | 2.12 | 2.12 |
| 384.000 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 |
| 385.000 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 |
| 386.000 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 |
| 387.000 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 |
| 388.000 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 |
| 389.000 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 |
| 390.000 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 |
| 391.000 | 2.12 | 2.12 | 2.13 | 2.13 | 2.13 |
| 392.000 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 |
| 393.000 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 |
| 394.000 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 |
| 395.000 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 |
| 396.000 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 |
| 397.000 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 |
| 398.000 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 |
| 399.000 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| 400.000 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| 401.000 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| 402.000 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| 403.000 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| 404.000 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| 405.000 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| 406.000 | 2.14 | 2.14 | 2.15 | 2.15 | 2.15 |
| 407.000 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| 408.000 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| 409.000 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| 410.000 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| 411.000 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| 412.000 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| 413.000 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| 414.000 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 |
| 415.000 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 |
| 416.000 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 |
| 417.000 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 |
| 418.000 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 |
| 419.000 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 |
| 420.000 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 |
| 421.000 | 2.16 | 2.17 | 2.17 | 2.17 | 2.17 |
| 422.000 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 |
| 423.000 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 |
| 424.000 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 425.000 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 |
| 426.000 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 |
| 427.000 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 |
| 428.000 | 2.17 | 2.17 | 2.18 | 2.18 | 2.18 |
| 429.000 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 |
| 430.000 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 |
| 431.000 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 |
| 432.000 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 |
| 433.000 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 |
| 434.000 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 |
| 435.000 | 2.18 | 2.18 | 2.18 | 2.19 | 2.19 |
| 436.000 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 |
| 437.000 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 |
| 438.000 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 |
| 439.000 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 |
| 440.000 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 |
| 441.000 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 |
| 442.000 | 2.19 | 2.19 | 2.19 | 2.20 | 2.20 |
| 443.000 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 |
| 444.000 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 |
| 445.000 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 |
| 446.000 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 |
| 447.000 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 |
| 448.000 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 |
| 449.000 | 2.20 | 2.20 | 2.21 | 2.21 | 2.21 |
| 450.000 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 |
| 451.000 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 |
| 452.000 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 |
| 453.000 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 |
| 454.000 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 |
| 455.000 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 |
| 456.000 | 2.21 | 2.22 | 2.22 | 2.22 | 2.22 |
| 457.000 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 |
| 458.000 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 |
| 459.000 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 |
| 460.000 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 |
| 461.000 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 |
| 462.000 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 |
| 463.000 | 2.23 | 2.23 | 2.23 | 2.23 | 2.23 |
| 464.000 | 2.23 | 2.23 | 2.23 | 2.23 | 2.23 |
| 465.000 | 2.23 | 2.23 | 2.23 | 2.23 | 2.23 |
| 466.000 | 2.23 | 2.23 | 2.23 | 2.23 | 2.23 |
| 467.000 | 2.23 | 2.23 | 2.23 | 2.23 | 2.23 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 468.000 | 2.23 | 2.23 | 2.23 | 2.23 | 2.23 |
| 469.000 | 2.23 | 2.23 | 2.23 | 2.24 | 2.24 |
| 470.000 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 |
| 471.000 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 |
| 472.000 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 |
| 473.000 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 |
| 474.000 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 |
| 475.000 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 |
| 476.000 | 2.24 | 2.25 | 2.25 | 2.25 | 2.25 |
| 477.000 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| 478.000 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| 479.000 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| 480.000 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| 481.000 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| 482.000 | 2.25 | 2.25 | 2.25 | 2.26 | 2.26 |
| 483.000 | 2.26 | 2.26 | 2.26 | 2.26 | 2.26 |
| 484.000 | 2.26 | 2.26 | 2.26 | 2.26 | 2.26 |
| 485.000 | 2.26 | 2.26 | 2.26 | 2.26 | 2.26 |
| 486.000 | 2.26 | 2.26 | 2.26 | 2.26 | 2.26 |
| 487.000 | 2.26 | 2.26 | 2.26 | 2.26 | 2.26 |
| 488.000 | 2.26 | 2.26 | 2.26 | 2.26 | 2.26 |
| 489.000 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 |
| 490.000 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 |
| 491.000 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 |
| 492.000 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 |
| 493.000 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 |
| 494.000 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 |
| 495.000 | 2.27 | 2.28 | 2.28 | 2.28 | 2.28 |
| 496.000 | 2.28 | 2.28 | 2.28 | 2.28 | 2.28 |
| 497.000 | 2.28 | 2.28 | 2.28 | 2.28 | 2.28 |
| 498.000 | 2.28 | 2.28 | 2.28 | 2.28 | 2.28 |
| 499.000 | 2.28 | 2.28 | 2.28 | 2.28 | 2.28 |
| 500.000 | 2.28 | 2.28 | 2.28 | 2.28 | 2.28 |
| 501.000 | 2.28 | 2.28 | 2.29 | 2.29 | 2.29 |
| 502.000 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 |
| 503.000 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 |
| 504.000 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 |
| 505.000 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 |
| 506.000 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 |
| 507.000 | 2.29 | 2.29 | 2.29 | 2.30 | 2.30 |
| 508.000 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 |
| 509.000 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 |
| 510.000 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 511.000 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 |
| 512.000 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 |
| 513.000 | 2.30 | 2.30 | 2.30 | 2.31 | 2.31 |
| 514.000 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 |
| 515.000 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 |
| 516.000 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 |
| 517.000 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 |
| 518.000 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 |
| 519.000 | 2.31 | 2.31 | 2.32 | 2.32 | 2.32 |
| 520.000 | 2.32 | 2.32 | 2.32 | 2.32 | 2.32 |
| 521.000 | 2.32 | 2.32 | 2.32 | 2.32 | 2.32 |
| 522.000 | 2.32 | 2.32 | 2.32 | 2.32 | 2.32 |
| 523.000 | 2.32 | 2.32 | 2.32 | 2.32 | 2.32 |
| 524.000 | 2.32 | 2.32 | 2.32 | 2.32 | 2.32 |
| 525.000 | 2.32 | 2.32 | 2.33 | 2.33 | 2.33 |
| 526.000 | 2.33 | 2.33 | 2.33 | 2.33 | 2.33 |
| 527.000 | 2.33 | 2.33 | 2.33 | 2.33 | 2.33 |
| 528.000 | 2.33 | 2.33 | 2.33 | 2.33 | 2.33 |
| 529.000 | 2.33 | 2.33 | 2.33 | 2.33 | 2.33 |
| 530.000 | 2.33 | 2.33 | 2.33 | 2.33 | 2.33 |
| 531.000 | 2.34 | 2.34 | 2.34 | 2.34 | 2.34 |
| 532.000 | 2.34 | 2.34 | 2.34 | 2.34 | 2.34 |
| 533.000 | 2.34 | 2.34 | 2.34 | 2.34 | 2.34 |
| 534.000 | 2.34 | 2.34 | 2.34 | 2.34 | 2.34 |
| 535.000 | 2.34 | 2.34 | 2.34 | 2.34 | 2.34 |
| 536.000 | 2.34 | 2.34 | 2.34 | 2.35 | 2.35 |
| 537.000 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 |
| 538.000 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 |
| 539.000 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 |
| 540.000 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 |
| 541.000 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 |
| 542.000 | 2.35 | 2.36 | 2.36 | 2.36 | 2.36 |
| 543.000 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 |
| 544.000 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 |
| 545.000 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 |
| 546.000 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 |
| 547.000 | 2.36 | 2.36 | 2.37 | 2.37 | 2.37 |
| 548.000 | 2.37 | 2.37 | 2.37 | 2.37 | 2.37 |
| 549.000 | 2.37 | 2.37 | 2.37 | 2.37 | 2.37 |
| 550.000 | 2.37 | 2.37 | 2.37 | 2.37 | 2.37 |
| 551.000 | 2.37 | 2.37 | 2.37 | 2.37 | 2.37 |
| 552.000 | 2.37 | 2.37 | 2.37 | 2.37 | 2.38 |
| 553.000 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 554.000 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 |
| 555.000 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 |
| 556.000 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 |
| 557.000 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 |
| 558.000 | 2.39 | 2.39 | 2.39 | 2.39 | 2.39 |
| 559.000 | 2.39 | 2.39 | 2.39 | 2.39 | 2.39 |
| 560.000 | 2.39 | 2.39 | 2.39 | 2.39 | 2.39 |
| 561.000 | 2.39 | 2.39 | 2.39 | 2.39 | 2.39 |
| 562.000 | 2.39 | 2.39 | 2.39 | 2.39 | 2.39 |
| 563.000 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 |
| 564.000 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 |
| 565.000 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 |
| 566.000 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 |
| 567.000 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 |
| 568.000 | 2.40 | 2.41 | 2.41 | 2.41 | 2.41 |
| 569.000 | 2.41 | 2.41 | 2.41 | 2.41 | 2.41 |
| 570.000 | 2.41 | 2.41 | 2.41 | 2.41 | 2.41 |
| 571.000 | 2.41 | 2.41 | 2.41 | 2.41 | 2.41 |
| 572.000 | 2.41 | 2.41 | 2.41 | 2.41 | 2.41 |
| 573.000 | 2.41 | 2.42 | 2.42 | 2.42 | 2.42 |
| 574.000 | 2.42 | 2.42 | 2.42 | 2.42 | 2.42 |
| 575.000 | 2.42 | 2.42 | 2.42 | 2.42 | 2.42 |
| 576.000 | 2.42 | 2.42 | 2.42 | 2.42 | 2.42 |
| 577.000 | 2.42 | 2.42 | 2.42 | 2.42 | 2.42 |
| 578.000 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 |
| 579.000 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 |
| 580.000 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 |
| 581.000 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 |
| 582.000 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 |
| 583.000 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 |
| 584.000 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 |
| 585.000 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 |
| 586.000 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 |
| 587.000 | 2.44 | 2.44 | 2.44 | 2.44 | 2.45 |
| 588.000 | 2.45 | 2.45 | 2.45 | 2.45 | 2.45 |
| 589.000 | 2.45 | 2.45 | 2.45 | 2.45 | 2.45 |
| 590.000 | 2.45 | 2.45 | 2.45 | 2.45 | 2.45 |
| 591.000 | 2.45 | 2.45 | 2.45 | 2.45 | 2.45 |
| 592.000 | 2.45 | 2.45 | 2.45 | 2.46 | 2.46 |
| 593.000 | 2.46 | 2.46 | 2.46 | 2.46 | 2.46 |
| 594.000 | 2.46 | 2.46 | 2.46 | 2.46 | 2.46 |
| 595.000 | 2.46 | 2.46 | 2.46 | 2.46 | 2.46 |
| 596.000 | 2.46 | 2.46 | 2.46 | 2.46 | 2.46 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 597.000 | 2.46 | 2.47 | 2.47 | 2.47 | 2.47 |
| 598.000 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 |
| 599.000 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 |
| 600.000 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 |
| 601.000 | 2.47 | 2.47 | 2.47 | 2.47 | 2.48 |
| 602.000 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 |
| 603.000 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 |
| 604.000 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 |
| 605.000 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 |
| 606.000 | 2.48 | 2.48 | 2.49 | 2.49 | 2.49 |
| 607.000 | 2.49 | 2.49 | 2.49 | 2.49 | 2.49 |
| 608.000 | 2.49 | 2.49 | 2.49 | 2.49 | 2.49 |
| 609.000 | 2.49 | 2.49 | 2.49 | 2.49 | 2.49 |
| 610.000 | 2.49 | 2.49 | 2.49 | 2.49 | 2.49 |
| 611.000 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 |
| 612.000 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 |
| 613.000 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 |
| 614.000 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 |
| 615.000 | 2.50 | 2.50 | 2.51 | 2.51 | 2.51 |
| 616.000 | 2.51 | 2.51 | 2.51 | 2.51 | 2.51 |
| 617.000 | 2.51 | 2.51 | 2.51 | 2.51 | 2.51 |
| 618.000 | 2.51 | 2.51 | 2.51 | 2.51 | 2.51 |
| 619.000 | 2.51 | 2.51 | 2.51 | 2.51 | 2.52 |
| 620.000 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 |
| 621.000 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 |
| 622.000 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 |
| 623.000 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 |
| 624.000 | 2.52 | 2.53 | 2.53 | 2.53 | 2.53 |
| 625.000 | 2.53 | 2.53 | 2.53 | 2.53 | 2.53 |
| 626.000 | 2.53 | 2.53 | 2.53 | 2.53 | 2.53 |
| 627.000 | 2.53 | 2.53 | 2.53 | 2.53 | 2.53 |
| 628.000 | 2.53 | 2.53 | 2.53 | 2.54 | 2.54 |
| 629.000 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 |
| 630.000 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 |
| 631.000 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 |
| 632.000 | 2.54 | 2.54 | 2.54 | 2.54 | 2.55 |
| 633.000 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 |
| 634.000 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 |
| 635.000 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 |
| 636.000 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 |
| 637.000 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 |
| 638.000 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 |
| 639.000 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 640.000 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 |
| 641.000 | 2.56 | 2.57 | 2.57 | 2.57 | 2.57 |
| 642.000 | 2.57 | 2.57 | 2.57 | 2.57 | 2.57 |
| 643.000 | 2.57 | 2.57 | 2.57 | 2.57 | 2.57 |
| 644.000 | 2.57 | 2.57 | 2.57 | 2.57 | 2.57 |
| 645.000 | 2.57 | 2.58 | 2.58 | 2.58 | 2.58 |
| 646.000 | 2.58 | 2.58 | 2.58 | 2.58 | 2.58 |
| 647.000 | 2.58 | 2.58 | 2.58 | 2.58 | 2.58 |
| 648.000 | 2.58 | 2.58 | 2.58 | 2.58 | 2.58 |
| 649.000 | 2.58 | 2.58 | 2.59 | 2.59 | 2.59 |
| 650.000 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 |
| 651.000 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 |
| 652.000 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 |
| 653.000 | 2.59 | 2.59 | 2.60 | 2.60 | 2.60 |
| 654.000 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 |
| 655.000 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 |
| 656.000 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 |
| 657.000 | 2.60 | 2.60 | 2.61 | 2.61 | 2.61 |
| 658.000 | 2.61 | 2.61 | 2.61 | 2.61 | 2.61 |
| 659.000 | 2.61 | 2.61 | 2.61 | 2.61 | 2.61 |
| 660.000 | 2.61 | 2.61 | 2.61 | 2.61 | 2.61 |
| 661.000 | 2.61 | 2.62 | 2.62 | 2.62 | 2.62 |
| 662.000 | 2.62 | 2.62 | 2.62 | 2.62 | 2.62 |
| 663.000 | 2.62 | 2.62 | 2.62 | 2.62 | 2.62 |
| 664.000 | 2.62 | 2.62 | 2.62 | 2.62 | 2.62 |
| 665.000 | 2.62 | 2.63 | 2.63 | 2.63 | 2.63 |
| 666.000 | 2.63 | 2.63 | 2.63 | 2.63 | 2.63 |
| 667.000 | 2.63 | 2.63 | 2.63 | 2.63 | 2.63 |
| 668.000 | 2.63 | 2.63 | 2.63 | 2.63 | 2.63 |
| 669.000 | 2.64 | 2.64 | 2.64 | 2.64 | 2.64 |
| 670.000 | 2.64 | 2.64 | 2.64 | 2.64 | 2.64 |
| 671.000 | 2.64 | 2.64 | 2.64 | 2.64 | 2.64 |
| 672.000 | 2.64 | 2.64 | 2.64 | 2.64 | 2.65 |
| 673.000 | 2.65 | 2.65 | 2.65 | 2.65 | 2.65 |
| 674.000 | 2.65 | 2.65 | 2.65 | 2.65 | 2.65 |
| 675.000 | 2.65 | 2.65 | 2.65 | 2.65 | 2.65 |
| 676.000 | 2.65 | 2.65 | 2.66 | 2.66 | 2.66 |
| 677.000 | 2.66 | 2.66 | 2.66 | 2.66 | 2.66 |
| 678.000 | 2.66 | 2.66 | 2.66 | 2.66 | 2.66 |
| 679.000 | 2.66 | 2.66 | 2.66 | 2.66 | 2.66 |
| 680.000 | 2.66 | 2.67 | 2.67 | 2.67 | 2.67 |
| 681.000 | 2.67 | 2.67 | 2.67 | 2.67 | 2.67 |
| 682.000 | 2.67 | 2.67 | 2.67 | 2.67 | 2.67 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 683.000 | 2.67 | 2.67 | 2.67 | 2.67 | 2.68 |
| 684.000 | 2.68 | 2.68 | 2.68 | 2.68 | 2.68 |
| 685.000 | 2.68 | 2.68 | 2.68 | 2.68 | 2.68 |
| 686.000 | 2.68 | 2.68 | 2.68 | 2.68 | 2.68 |
| 687.000 | 2.68 | 2.68 | 2.69 | 2.69 | 2.69 |
| 688.000 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 |
| 689.000 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 |
| 690.000 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 |
| 691.000 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 |
| 692.000 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 |
| 693.000 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 |
| 694.000 | 2.70 | 2.70 | 2.70 | 2.71 | 2.71 |
| 695.000 | 2.71 | 2.71 | 2.71 | 2.71 | 2.71 |
| 696.000 | 2.71 | 2.71 | 2.71 | 2.71 | 2.71 |
| 697.000 | 2.71 | 2.71 | 2.71 | 2.71 | 2.71 |
| 698.000 | 2.72 | 2.72 | 2.72 | 2.72 | 2.72 |
| 699.000 | 2.72 | 2.72 | 2.72 | 2.72 | 2.72 |
| 700.000 | 2.72 | 2.72 | 2.72 | 2.72 | 2.72 |
| 701.000 | 2.72 | 2.72 | 2.73 | 2.73 | 2.73 |
| 702.000 | 2.73 | 2.73 | 2.73 | 2.73 | 2.73 |
| 703.000 | 2.73 | 2.73 | 2.73 | 2.73 | 2.73 |
| 704.000 | 2.73 | 2.73 | 2.73 | 2.73 | 2.74 |
| 705.000 | 2.74 | 2.74 | 2.74 | 2.74 | 2.74 |
| 706.000 | 2.74 | 2.74 | 2.74 | 2.74 | 2.74 |
| 707.000 | 2.74 | 2.74 | 2.74 | 2.74 | 2.74 |
| 708.000 | 2.74 | 2.75 | 2.75 | 2.75 | 2.75 |
| 709.000 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 |
| 710.000 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 |
| 711.000 | 2.75 | 2.75 | 2.75 | 2.76 | 2.76 |
| 712.000 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 |
| 713.000 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 |
| 714.000 | 2.76 | 2.76 | 2.76 | 2.76 | 2.77 |
| 715.000 | 2.77 | 2.77 | 2.77 | 2.77 | 2.77 |
| 716.000 | 2.77 | 2.77 | 2.77 | 2.77 | 2.77 |
| 717.000 | 2.77 | 2.77 | 2.77 | 2.77 | 2.77 |
| 718.000 | 2.77 | 2.78 | 2.78 | 2.78 | 2.78 |
| 719.000 | 2.78 | 2.78 | 2.78 | 2.78 | 2.78 |
| 720.000 | 2.78 | 2.78 | 2.78 | 2.78 | 2.78 |
| 721.000 | 2.78 | 2.78 | 2.79 | 2.79 | 2.79 |
| 722.000 | 2.79 | 2.79 | 2.79 | 2.79 | 2.79 |
| 723.000 | 2.79 | 2.79 | 2.79 | 2.79 | 2.79 |
| 724.000 | 2.79 | 2.79 | 2.79 | 2.80 | 2.80 |
| 725.000 | 2.80 | 2.80 | 2.80 | 2.80 | 2.80 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 726.000 | 2.80 | 2.80 | 2.80 | 2.80 | 2.80 |
| 727.000 | 2.80 | 2.80 | 2.80 | 2.80 | 2.81 |
| 728.000 | 2.81 | 2.81 | 2.81 | 2.81 | 2.81 |
| 729.000 | 2.81 | 2.81 | 2.81 | 2.81 | 2.81 |
| 730.000 | 2.81 | 2.81 | 2.81 | 2.81 | 2.82 |
| 731.000 | 2.82 | 2.82 | 2.82 | 2.82 | 2.82 |
| 732.000 | 2.82 | 2.82 | 2.82 | 2.82 | 2.82 |
| 733.000 | 2.82 | 2.82 | 2.82 | 2.82 | 2.82 |
| 734.000 | 2.83 | 2.83 | 2.83 | 2.83 | 2.83 |
| 735.000 | 2.83 | 2.83 | 2.83 | 2.83 | 2.83 |
| 736.000 | 2.83 | 2.83 | 2.83 | 2.83 | 2.83 |
| 737.000 | 2.84 | 2.84 | 2.84 | 2.84 | 2.84 |
| 738.000 | 2.84 | 2.84 | 2.84 | 2.84 | 2.84 |
| 739.000 | 2.84 | 2.84 | 2.84 | 2.84 | 2.84 |
| 740.000 | 2.85 | 2.85 | 2.85 | 2.85 | 2.85 |
| 741.000 | 2.85 | 2.85 | 2.85 | 2.85 | 2.85 |
| 742.000 | 2.85 | 2.85 | 2.85 | 2.85 | 2.85 |
| 743.000 | 2.86 | 2.86 | 2.86 | 2.86 | 2.86 |
| 744.000 | 2.86 | 2.86 | 2.86 | 2.86 | 2.86 |
| 745.000 | 2.86 | 2.86 | 2.86 | 2.86 | 2.86 |
| 746.000 | 2.87 | 2.87 | 2.87 | 2.87 | 2.87 |
| 747.000 | 2.87 | 2.87 | 2.87 | 2.87 | 2.87 |
| 748.000 | 2.87 | 2.87 | 2.87 | 2.87 | 2.88 |
| 749.000 | 2.88 | 2.88 | 2.88 | 2.88 | 2.88 |
| 750.000 | 2.88 | 2.88 | 2.88 | 2.88 | 2.88 |
| 751.000 | 2.88 | 2.88 | 2.88 | 2.88 | 2.89 |
| 752.000 | 2.89 | 2.89 | 2.89 | 2.89 | 2.89 |
| 753.000 | 2.89 | 2.89 | 2.89 | 2.89 | 2.89 |
| 754.000 | 2.89 | 2.89 | 2.89 | 2.90 | 2.90 |
| 755.000 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 |
| 756.000 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 |
| 757.000 | 2.90 | 2.90 | 2.91 | 2.91 | 2.91 |
| 758.000 | 2.91 | 2.91 | 2.91 | 2.91 | 2.91 |
| 759.000 | 2.91 | 2.91 | 2.91 | 2.91 | 2.91 |
| 760.000 | 2.91 | 2.92 | 2.92 | 2.92 | 2.92 |
| 761.000 | 2.92 | 2.92 | 2.92 | 2.92 | 2.92 |
| 762.000 | 2.92 | 2.92 | 2.92 | 2.92 | 2.92 |
| 763.000 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 |
| 764.000 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 |
| 765.000 | 2.93 | 2.93 | 2.93 | 2.93 | 2.94 |
| 766.000 | 2.94 | 2.94 | 2.94 | 2.94 | 2.94 |
| 767.000 | 2.94 | 2.94 | 2.94 | 2.94 | 2.94 |
| 768.000 | 2.94 | 2.94 | 2.95 | 2.95 | 2.95 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 769.000 | 2.95 | 2.95 | 2.95 | 2.95 | 2.95 |
| 770.000 | 2.95 | 2.95 | 2.95 | 2.95 | 2.95 |
| 771.000 | 2.95 | 2.96 | 2.96 | 2.96 | 2.96 |
| 772.000 | 2.96 | 2.96 | 2.96 | 2.96 | 2.96 |
| 773.000 | 2.96 | 2.96 | 2.96 | 2.96 | 2.97 |
| 774.000 | 2.97 | 2.97 | 2.97 | 2.97 | 2.97 |
| 775.000 | 2.97 | 2.97 | 2.97 | 2.97 | 2.97 |
| 776.000 | 2.97 | 2.97 | 2.98 | 2.98 | 2.98 |
| 777.000 | 2.98 | 2.98 | 2.98 | 2.98 | 2.98 |
| 778.000 | 2.98 | 2.98 | 2.98 | 2.98 | 2.98 |
| 779.000 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 |
| 780.000 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 |
| 781.000 | 2.99 | 2.99 | 2.99 | 3.00 | 3.00 |
| 782.000 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| 783.000 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| 784.000 | 3.00 | 3.01 | 3.01 | 3.01 | 3.01 |
| 785.000 | 3.01 | 3.01 | 3.01 | 3.01 | 3.01 |
| 786.000 | 3.01 | 3.01 | 3.01 | 3.01 | 3.02 |
| 787.000 | 3.02 | 3.02 | 3.02 | 3.02 | 3.02 |
| 788.000 | 3.02 | 3.02 | 3.02 | 3.02 | 3.02 |
| 789.000 | 3.02 | 3.03 | 3.03 | 3.03 | 3.03 |
| 790.000 | 3.03 | 3.03 | 3.03 | 3.03 | 3.03 |
| 791.000 | 3.03 | 3.03 | 3.03 | 3.03 | 3.04 |
| 792.000 | 3.04 | 3.04 | 3.04 | 3.04 | 3.04 |
| 793.000 | 3.04 | 3.04 | 3.04 | 3.04 | 3.04 |
| 794.000 | 3.04 | 3.05 | 3.05 | 3.05 | 3.05 |
| 795.000 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 |
| 796.000 | 3.05 | 3.05 | 3.05 | 3.06 | 3.06 |
| 797.000 | 3.06 | 3.06 | 3.06 | 3.06 | 3.06 |
| 798.000 | 3.06 | 3.06 | 3.06 | 3.06 | 3.06 |
| 799.000 | 3.07 | 3.07 | 3.07 | 3.07 | 3.07 |
| 800.000 | 3.07 | 3.07 | 3.07 | 3.07 | 3.07 |
| 801.000 | 3.07 | 3.07 | 3.08 | 3.08 | 3.08 |
| 802.000 | 3.08 | 3.08 | 3.08 | 3.08 | 3.08 |
| 803.000 | 3.08 | 3.08 | 3.08 | 3.08 | 3.09 |
| 804.000 | 3.09 | 3.09 | 3.09 | 3.09 | 3.09 |
| 805.000 | 3.09 | 3.09 | 3.09 | 3.09 | 3.09 |
| 806.000 | 3.10 | 3.10 | 3.10 | 3.10 | 3.10 |
| 807.000 | 3.10 | 3.10 | 3.10 | 3.10 | 3.10 |
| 808.000 | 3.10 | 3.10 | 3.11 | 3.11 | 3.11 |
| 809.000 | 3.11 | 3.11 | 3.11 | 3.11 | 3.11 |
| 810.000 | 3.11 | 3.11 | 3.11 | 3.12 | 3.12 |
| 811.000 | 3.12 | 3.12 | 3.12 | 3.12 | 3.12 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 812.000 | 3.12 | 3.12 | 3.12 | 3.12 | 3.12 |
| 813.000 | 3.13 | 3.13 | 3.13 | 3.13 | 3.13 |
| 814.000 | 3.13 | 3.13 | 3.13 | 3.13 | 3.13 |
| 815.000 | 3.13 | 3.14 | 3.14 | 3.14 | 3.14 |
| 816.000 | 3.14 | 3.14 | 3.14 | 3.14 | 3.14 |
| 817.000 | 3.14 | 3.14 | 3.15 | 3.15 | 3.15 |
| 818.000 | 3.15 | 3.15 | 3.15 | 3.15 | 3.15 |
| 819.000 | 3.15 | 3.15 | 3.15 | 3.16 | 3.16 |
| 820.000 | 3.16 | 3.16 | 3.16 | 3.16 | 3.16 |
| 821.000 | 3.16 | 3.16 | 3.16 | 3.16 | 3.17 |
| 822.000 | 3.17 | 3.17 | 3.17 | 3.17 | 3.17 |
| 823.000 | 3.17 | 3.17 | 3.17 | 3.17 | 3.18 |
| 824.000 | 3.18 | 3.18 | 3.18 | 3.18 | 3.18 |
| 825.000 | 3.18 | 3.18 | 3.18 | 3.18 | 3.18 |
| 826.000 | 3.19 | 3.19 | 3.19 | 3.19 | 3.19 |
| 827.000 | 3.19 | 3.19 | 3.19 | 3.19 | 3.19 |
| 828.000 | 3.19 | 3.20 | 3.20 | 3.20 | 3.20 |
| 829.000 | 3.20 | 3.20 | 3.20 | 3.20 | 3.20 |
| 830.000 | 3.20 | 3.21 | 3.21 | 3.21 | 3.21 |
| 831.000 | 3.21 | 3.21 | 3.21 | 3.21 | 3.21 |
| 832.000 | 3.21 | 3.21 | 3.22 | 3.22 | 3.22 |
| 833.000 | 3.22 | 3.22 | 3.22 | 3.22 | 3.22 |
| 834.000 | 3.22 | 3.22 | 3.23 | 3.23 | 3.23 |
| 835.000 | 3.23 | 3.23 | 3.23 | 3.23 | 3.23 |
| 836.000 | 3.23 | 3.23 | 3.24 | 3.24 | 3.24 |
| 837.000 | 3.24 | 3.24 | 3.24 | 3.24 | 3.24 |
| 838.000 | 3.24 | 3.24 | 3.25 | 3.25 | 3.25 |
| 839.000 | 3.25 | 3.25 | 3.25 | 3.25 | 3.25 |
| 840.000 | 3.25 | 3.25 | 3.26 | 3.26 | 3.26 |
| 841.000 | 3.26 | 3.26 | 3.26 | 3.26 | 3.26 |
| 842.000 | 3.26 | 3.26 | 3.27 | 3.27 | 3.27 |
| 843.000 | 3.27 | 3.27 | 3.27 | 3.27 | 3.27 |
| 844.000 | 3.27 | 3.27 | 3.28 | 3.28 | 3.28 |
| 845.000 | 3.28 | 3.28 | 3.28 | 3.28 | 3.28 |
| 846.000 | 3.28 | 3.29 | 3.29 | 3.29 | 3.29 |
| 847.000 | 3.29 | 3.29 | 3.29 | 3.29 | 3.29 |
| 848.000 | 3.29 | 3.30 | 3.30 | 3.30 | 3.30 |
| 849.000 | 3.30 | 3.30 | 3.30 | 3.30 | 3.30 |
| 850.000 | 3.30 | 3.31 | 3.31 | 3.31 | 3.31 |
| 851.000 | 3.31 | 3.31 | 3.31 | 3.31 | 3.31 |
| 852.000 | 3.32 | 3.32 | 3.32 | 3.32 | 3.32 |
| 853.000 | 3.32 | 3.32 | 3.32 | 3.32 | 3.33 |
| 854.000 | 3.33 | 3.33 | 3.33 | 3.33 | 3.33 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 855.000 | 3.33 | 3.33 | 3.33 | 3.33 | 3.34 |
| 856.000 | 3.34 | 3.34 | 3.34 | 3.34 | 3.34 |
| 857.000 | 3.34 | 3.34 | 3.34 | 3.35 | 3.35 |
| 858.000 | 3.35 | 3.35 | 3.35 | 3.35 | 3.35 |
| 859.000 | 3.35 | 3.35 | 3.36 | 3.36 | 3.36 |
| 860.000 | 3.36 | 3.36 | 3.36 | 3.36 | 3.36 |
| 861.000 | 3.36 | 3.37 | 3.37 | 3.37 | 3.37 |
| 862.000 | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 |
| 863.000 | 3.38 | 3.38 | 3.38 | 3.38 | 3.38 |
| 864.000 | 3.38 | 3.38 | 3.38 | 3.38 | 3.39 |
| 865.000 | 3.39 | 3.39 | 3.39 | 3.39 | 3.39 |
| 866.000 | 3.39 | 3.39 | 3.39 | 3.40 | 3.40 |
| 867.000 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 |
| 868.000 | 3.40 | 3.41 | 3.41 | 3.41 | 3.41 |
| 869.000 | 3.41 | 3.41 | 3.41 | 3.41 | 3.41 |
| 870.000 | 3.42 | 3.42 | 3.42 | 3.42 | 3.42 |
| 871.000 | 3.42 | 3.42 | 3.42 | 3.43 | 3.43 |
| 872.000 | 3.43 | 3.43 | 3.43 | 3.43 | 3.43 |
| 873.000 | 3.43 | 3.43 | 3.44 | 3.44 | 3.44 |
| 874.000 | 3.44 | 3.44 | 3.44 | 3.44 | 3.44 |
| 875.000 | 3.45 | 3.45 | 3.45 | 3.45 | 3.45 |
| 876.000 | 3.45 | 3.45 | 3.45 | 3.45 | 3.46 |
| 877.000 | 3.46 | 3.46 | 3.46 | 3.46 | 3.46 |
| 878.000 | 3.46 | 3.46 | 3.47 | 3.47 | 3.47 |
| 879.000 | 3.47 | 3.47 | 3.47 | 3.47 | 3.47 |
| 880.000 | 3.48 | 3.48 | 3.48 | 3.48 | 3.48 |
| 881.000 | 3.48 | 3.48 | 3.48 | 3.49 | 3.49 |
| 882.000 | 3.49 | 3.49 | 3.49 | 3.49 | 3.49 |
| 883.000 | 3.49 | 3.50 | 3.50 | 3.50 | 3.50 |
| 884.000 | 3.50 | 3.50 | 3.50 | 3.50 | 3.51 |
| 885.000 | 3.51 | 3.51 | 3.51 | 3.51 | 3.51 |
| 886.000 | 3.51 | 3.51 | 3.52 | 3.52 | 3.52 |
| 887.000 | 3.52 | 3.52 | 3.52 | 3.52 | 3.52 |
| 888.000 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 |
| 889.000 | 3.53 | 3.53 | 3.54 | 3.54 | 3.54 |
| 890.000 | 3.54 | 3.54 | 3.54 | 3.54 | 3.54 |
| 891.000 | 3.55 | 3.55 | 3.55 | 3.55 | 3.55 |
| 892.000 | 3.55 | 3.55 | 3.55 | 3.56 | 3.56 |
| 893.000 | 3.56 | 3.56 | 3.56 | 3.56 | 3.56 |
| 894.000 | 3.57 | 3.57 | 3.57 | 3.57 | 3.57 |
| 895.000 | 3.57 | 3.57 | 3.57 | 3.58 | 3.58 |
| 896.000 | 3.58 | 3.58 | 3.58 | 3.58 | 3.58 |
| 897.000 | 3.59 | 3.59 | 3.59 | 3.59 | 3.59 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 898.000 | 3.59 | 3.59 | 3.59 | 3.60 | 3.60 |
| 899.000 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| 900.000 | 3.60 | 3.61 | 3.61 | 3.61 | 3.61 |
| 901.000 | 3.61 | 3.61 | 3.61 | 3.62 | 3.62 |
| 902.000 | 3.62 | 3.62 | 3.62 | 3.62 | 3.62 |
| 903.000 | 3.62 | 3.63 | 3.63 | 3.63 | 3.63 |
| 904.000 | 3.63 | 3.63 | 3.63 | 3.64 | 3.64 |
| 905.000 | 3.64 | 3.64 | 3.64 | 3.64 | 3.64 |
| 906.000 | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 |
| 907.000 | 3.65 | 3.65 | 3.65 | 3.66 | 3.66 |
| 908.000 | 3.66 | 3.66 | 3.66 | 3.66 | 3.66 |
| 909.000 | 3.67 | 3.67 | 3.67 | 3.67 | 3.67 |
| 910.000 | 3.67 | 3.67 | 3.68 | 3.68 | 3.68 |
| 911.000 | 3.68 | 3.68 | 3.68 | 3.68 | 3.69 |
| 912.000 | 3.69 | 3.69 | 3.69 | 3.69 | 3.69 |
| 913.000 | 3.69 | 3.70 | 3.70 | 3.70 | 3.70 |
| 914.000 | 3.70 | 3.70 | 3.70 | 3.71 | 3.71 |
| 915.000 | 3.71 | 3.71 | 3.71 | 3.71 | 3.71 |
| 916.000 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 |
| 917.000 | 3.72 | 3.72 | 3.73 | 3.73 | 3.73 |
| 918.000 | 3.73 | 3.73 | 3.73 | 3.73 | 3.74 |
| 919.000 | 3.74 | 3.74 | 3.74 | 3.74 | 3.74 |
| 920.000 | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 |
| 921.000 | 3.75 | 3.75 | 3.76 | 3.76 | 3.76 |
| 922.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.77 |
| 923.000 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| 924.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 925.000 | 3.78 | 3.78 | 3.79 | 3.79 | 3.79 |
| 926.000 | 3.79 | 3.79 | 3.79 | 3.80 | 3.80 |
| 927.000 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
| 928.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 929.000 | 3.81 | 3.82 | 3.82 | 3.82 | 3.82 |
| 930.000 | 3.82 | 3.82 | 3.83 | 3.83 | 3.83 |
| 931.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.84 |
| 932.000 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| 933.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 934.000 | 3.85 | 3.86 | 3.86 | 3.86 | 3.86 |
| 935.000 | 3.86 | 3.86 | 3.87 | 3.87 | 3.87 |
| 936.000 | 3.87 | 3.87 | 3.87 | 3.88 | 3.88 |
| 937.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.89 |
| 938.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 939.000 | 3.90 | 3.90 | 3.90 | 3.90 | 3.90 |
| 940.000 | 3.90 | 3.91 | 3.91 | 3.91 | 3.91 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 941.000 | 3.91 | 3.91 | 3.92 | 3.92 | 3.92 |
| 942.000 | 3.92 | 3.92 | 3.92 | 3.93 | 3.93 |
| 943.000 | 3.93 | 3.93 | 3.93 | 3.94 | 3.94 |
| 944.000 | 3.94 | 3.94 | 3.94 | 3.94 | 3.95 |
| 945.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 946.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 947.000 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| 948.000 | 3.97 | 3.98 | 3.98 | 3.98 | 3.98 |
| 949.000 | 3.98 | 3.98 | 3.99 | 3.99 | 3.99 |
| 950.000 | 3.99 | 3.99 | 4.00 | 4.00 | 4.00 |
| 951.000 | 4.00 | 4.00 | 4.00 | 4.01 | 4.01 |
| 952.000 | 4.01 | 4.01 | 4.01 | 4.02 | 4.02 |
| 953.000 | 4.02 | 4.02 | 4.02 | 4.03 | 4.03 |
| 954.000 | 4.03 | 4.03 | 4.03 | 4.03 | 4.04 |
| 955.000 | 4.04 | 4.04 | 4.04 | 4.04 | 4.05 |
| 956.000 | 4.05 | 4.05 | 4.05 | 4.05 | 4.06 |
| 957.000 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 |
| 958.000 | 4.07 | 4.07 | 4.07 | 4.07 | 4.07 |
| 959.000 | 4.08 | 4.08 | 4.08 | 4.08 | 4.08 |
| 960.000 | 4.09 | 4.09 | 4.09 | 4.09 | 4.09 |
| 961.000 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| 962.000 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 |
| 963.000 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 |
| 964.000 | 4.13 | 4.13 | 4.13 | 4.13 | 4.13 |
| 965.000 | 4.14 | 4.14 | 4.14 | 4.14 | 4.14 |
| 966.000 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
| 967.000 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 |
| 968.000 | 4.17 | 4.17 | 4.17 | 4.17 | 4.18 |
| 969.000 | 4.18 | 4.18 | 4.18 | 4.18 | 4.19 |
| 970.000 | 4.19 | 4.19 | 4.19 | 4.19 | 4.20 |
| 971.000 | 4.20 | 4.20 | 4.20 | 4.20 | 4.21 |
| 972.000 | 4.21 | 4.21 | 4.21 | 4.22 | 4.22 |
| 973.000 | 4.22 | 4.22 | 4.22 | 4.23 | 4.23 |
| 974.000 | 4.23 | 4.23 | 4.24 | 4.24 | 4.24 |
| 975.000 | 4.24 | 4.24 | 4.25 | 4.25 | 4.25 |
| 976.000 | 4.25 | 4.25 | 4.26 | 4.26 | 4.26 |
| 977.000 | 4.26 | 4.27 | 4.27 | 4.27 | 4.27 |
| 978.000 | 4.27 | 4.28 | 4.28 | 4.28 | 4.28 |
| 979.000 | 4.29 | 4.29 | 4.29 | 4.29 | 4.30 |
| 980.000 | 4.30 | 4.30 | 4.30 | 4.30 | 4.31 |
| 981.000 | 4.31 | 4.31 | 4.31 | 4.32 | 4.32 |
| 982.000 | 4.32 | 4.32 | 4.33 | 4.33 | 4.33 |
| 983.000 | 4.33 | 4.33 | 4.34 | 4.34 | 4.34 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 984.000 | 4.34 | 4.35 | 4.35 | 4.35 | 4.35 |
| 985.000 | 4.36 | 4.36 | 4.36 | 4.36 | 4.37 |
| 986.000 | 4.37 | 4.37 | 4.37 | 4.38 | 4.38 |
| 987.000 | 4.38 | 4.38 | 4.38 | 4.39 | 4.39 |
| 988.000 | 4.39 | 4.39 | 4.40 | 4.40 | 4.40 |
| 989.000 | 4.40 | 4.41 | 4.41 | 4.41 | 4.41 |
| 990.000 | 4.42 | 4.42 | 4.42 | 4.42 | 4.43 |
| 991.000 | 4.43 | 4.43 | 4.43 | 4.44 | 4.44 |
| 992.000 | 4.44 | 4.44 | 4.45 | 4.45 | 4.45 |
| 993.000 | 4.45 | 4.46 | 4.46 | 4.46 | 4.46 |
| 994.000 | 4.47 | 4.47 | 4.47 | 4.48 | 4.48 |
| 995.000 | 4.48 | 4.48 | 4.49 | 4.49 | 4.49 |
| 996.000 | 4.49 | 4.50 | 4.50 | 4.50 | 4.50 |
| 997.000 | 4.51 | 4.51 | 4.51 | 4.51 | 4.52 |
| 998.000 | 4.52 | 4.52 | 4.53 | 4.53 | 4.53 |
| 999.000 | 4.53 | 4.54 | 4.54 | 4.54 | 4.54 |
| 1,000.000 | 4.55 | 4.55 | 4.55 | 4.56 | 4.56 |
| 1,001.000 | 4.56 | 4.56 | 4.57 | 4.57 | 4.57 |
| 1,002.000 | 4.57 | 4.58 | 4.58 | 4.58 | 4.59 |
| 1,003.000 | 4.59 | 4.59 | 4.59 | 4.60 | 4.60 |
| 1,004.000 | 4.60 | 4.61 | 4.61 | 4.61 | 4.61 |
| 1,005.000 | 4.62 | 4.62 | 4.62 | 4.63 | 4.63 |
| 1,006.000 | 4.63 | 4.63 | 4.64 | 4.64 | 4.64 |
| 1,007.000 | 4.65 | 4.65 | 4.65 | 4.65 | 4.66 |
| 1,008.000 | 4.66 | 4.66 | 4.67 | 4.67 | 4.67 |
| 1,009.000 | 4.67 | 4.68 | 4.68 | 4.68 | 4.69 |
| 1,010.000 | 4.69 | 4.69 | 4.70 | 4.70 | 4.70 |
| 1,011.000 | 4.70 | 4.71 | 4.71 | 4.71 | 4.72 |
| 1,012.000 | 4.72 | 4.72 | 4.73 | 4.73 | 4.73 |
| 1,013.000 | 4.74 | 4.74 | 4.74 | 4.74 | 4.75 |
| 1,014.000 | 4.75 | 4.75 | 4.76 | 4.76 | 4.76 |
| 1,015.000 | 4.77 | 4.77 | 4.77 | 4.78 | 4.78 |
| 1,016.000 | 4.78 | 4.79 | 4.79 | 4.79 | 4.80 |
| 1,017.000 | 4.80 | 4.80 | 4.81 | 4.81 | 4.81 |
| 1,018.000 | 4.81 | 4.82 | 4.82 | 4.82 | 4.83 |
| 1,019.000 | 4.83 | 4.83 | 4.84 | 4.84 | 4.84 |
| 1,020.000 | 4.85 | 4.85 | 4.85 | 4.86 | 4.86 |
| 1,021.000 | 4.86 | 4.87 | 4.87 | 4.87 | 4.88 |
| 1,022.000 | 4.88 | 4.88 | 4.89 | 4.89 | 4.89 |
| 1,023.000 | 4.90 | 4.90 | 4.91 | 4.91 | 4.91 |
| 1,024.000 | 4.92 | 4.92 | 4.92 | 4.93 | 4.93 |
| 1,025.000 | 4.93 | 4.94 | 4.94 | 4.94 | 4.95 |
| 1,026.000 | 4.95 | 4.95 | 4.96 | 4.96 | 4.96 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,027.000 | 4.97 | 4.97 | 4.98 | 4.98 | 4.98 |
| 1,028.000 | 4.99 | 4.99 | 4.99 | 5.00 | 5.00 |
| 1,029.000 | 5.00 | 5.01 | 5.01 | 5.02 | 5.02 |
| 1,030.000 | 5.02 | 5.03 | 5.03 | 5.03 | 5.04 |
| 1,031.000 | 5.04 | 5.05 | 5.05 | 5.05 | 5.06 |
| 1,032.000 | 5.06 | 5.06 | 5.07 | 5.07 | 5.08 |
| 1,033.000 | 5.08 | 5.08 | 5.09 | 5.09 | 5.10 |
| 1,034.000 | 5.10 | 5.10 | 5.11 | 5.11 | 5.11 |
| 1,035.000 | 5.12 | 5.12 | 5.13 | 5.13 | 5.13 |
| 1,036.000 | 5.14 | 5.14 | 5.15 | 5.15 | 5.15 |
| 1,037.000 | 5.16 | 5.16 | 5.17 | 5.17 | 5.17 |
| 1,038.000 | 5.18 | 5.18 | 5.19 | 5.19 | 5.20 |
| 1,039.000 | 5.20 | 5.20 | 5.21 | 5.21 | 5.22 |
| 1,040.000 | 5.22 | 5.22 | 5.23 | 5.23 | 5.24 |
| 1,041.000 | 5.24 | 5.25 | 5.25 | 5.25 | 5.26 |
| 1,042.000 | 5.26 | 5.27 | 5.27 | 5.28 | 5.28 |
| 1,043.000 | 5.28 | 5.29 | 5.29 | 5.30 | 5.30 |
| 1,044.000 | 5.31 | 5.31 | 5.31 | 5.32 | 5.32 |
| 1,045.000 | 5.33 | 5.33 | 5.34 | 5.34 | 5.35 |
| 1,046.000 | 5.35 | 5.36 | 5.36 | 5.36 | 5.37 |
| 1,047.000 | 5.37 | 5.38 | 5.38 | 5.39 | 5.39 |
| 1,048.000 | 5.40 | 5.40 | 5.41 | 5.41 | 5.41 |
| 1,049.000 | 5.42 | 5.42 | 5.43 | 5.43 | 5.44 |
| 1,050.000 | 5.44 | 5.45 | 5.45 | 5.46 | 5.46 |
| 1,051.000 | 5.47 | 5.47 | 5.48 | 5.48 | 5.49 |
| 1,052.000 | 5.49 | 5.50 | 5.50 | 5.51 | 5.51 |
| 1,053.000 | 5.52 | 5.52 | 5.53 | 5.53 | 5.54 |
| 1,054.000 | 5.54 | 5.55 | 5.55 | 5.56 | 5.56 |
| 1,055.000 | 5.57 | 5.57 | 5.58 | 5.58 | 5.59 |
| 1,056.000 | 5.59 | 5.60 | 5.60 | 5.61 | 5.61 |
| 1,057.000 | 5.62 | 5.62 | 5.63 | 5.63 | 5.64 |
| 1,058.000 | 5.64 | 5.65 | 5.66 | 5.66 | 5.67 |
| 1,059.000 | 5.67 | 5.68 | 5.68 | 5.69 | 5.69 |
| 1,060.000 | 5.70 | 5.70 | 5.71 | 5.72 | 5.72 |
| 1,061.000 | 5.73 | 5.73 | 5.74 | 5.74 | 5.75 |
| 1,062.000 | 5.75 | 5.76 | 5.77 | 5.77 | 5.78 |
| 1,063.000 | 5.78 | 5.79 | 5.79 | 5.80 | 5.81 |
| 1,064.000 | 5.81 | 5.82 | 5.82 | 5.83 | 5.84 |
| 1,065.000 | 5.84 | 5.85 | 5.85 | 5.86 | 5.87 |
| 1,066.000 | 5.87 | 5.88 | 5.88 | 5.89 | 5.90 |
| 1,067.000 | 5.90 | 5.91 | 5.91 | 5.92 | 5.93 |
| 1,068.000 | 5.93 | 5.94 | 5.95 | 5.95 | 5.96 |
| 1,069.000 | 5.96 | 5.97 | 5.98 | 5.98 | 5.99 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,070.000 | 6.00 | 6.00 | 6.01 | 6.02 | 6.02 |
| 1,071.000 | 6.03 | 6.03 | 6.04 | 6.05 | 6.05 |
| 1,072.000 | 6.06 | 6.07 | 6.07 | 6.08 | 6.09 |
| 1,073.000 | 6.09 | 6.10 | 6.11 | 6.11 | 6.12 |
| 1,074.000 | 6.13 | 6.13 | 6.14 | 6.15 | 6.15 |
| 1,075.000 | 6.16 | 6.17 | 6.18 | 6.18 | 6.19 |
| 1,076.000 | 6.20 | 6.20 | 6.21 | 6.22 | 6.22 |
| 1,077.000 | 6.23 | 6.24 | 6.25 | 6.25 | 6.26 |
| 1,078.000 | 6.27 | 6.27 | 6.28 | 6.29 | 6.30 |
| 1,079.000 | 6.30 | 6.31 | 6.32 | 6.33 | 6.33 |
| 1,080.000 | 6.34 | 6.35 | 6.36 | 6.36 | 6.37 |
| 1,081.000 | 6.38 | 6.39 | 6.40 | 6.40 | 6.41 |
| 1,082.000 | 6.42 | 6.43 | 6.43 | 6.44 | 6.45 |
| 1,083.000 | 6.46 | 6.47 | 6.47 | 6.48 | 6.49 |
| 1,084.000 | 6.50 | 6.51 | 6.51 | 6.52 | 6.53 |
| 1,085.000 | 6.54 | 6.55 | 6.56 | 6.56 | 6.57 |
| 1,086.000 | 6.58 | 6.59 | 6.60 | 6.61 | 6.62 |
| 1,087.000 | 6.62 | 6.63 | 6.64 | 6.65 | 6.66 |
| 1,088.000 | 6.67 | 6.68 | 6.69 | 6.69 | 6.70 |
| 1,089.000 | 6.71 | 6.72 | 6.73 | 6.74 | 6.75 |
| 1,090.000 | 6.76 | 6.77 | 6.78 | 6.79 | 6.79 |
| 1,091.000 | 6.80 | 6.81 | 6.82 | 6.83 | 6.84 |
| 1,092.000 | 6.85 | 6.86 | 6.87 | 6.88 | 6.89 |
| 1,093.000 | 6.90 | 6.91 | 6.92 | 6.93 | 6.94 |
| 1,094.000 | 6.95 | 6.96 | 6.97 | 6.98 | 6.99 |
| 1,095.000 | 7.00 | 7.01 | 7.02 | 7.03 | 7.04 |
| 1,096.000 | 7.05 | 7.06 | 7.07 | 7.08 | 7.09 |
| 1,097.000 | 7.11 | 7.12 | 7.13 | 7.14 | 7.15 |
| 1,098.000 | 7.16 | 7.17 | 7.18 | 7.19 | 7.20 |
| 1,099.000 | 7.22 | 7.23 | 7.24 | 7.25 | 7.26 |
| 1,100.000 | 7.27 | 7.28 | 7.30 | 7.31 | 7.32 |
| 1,101.000 | 7.33 | 7.34 | 7.36 | 7.37 | 7.38 |
| 1,102.000 | 7.39 | 7.40 | 7.42 | 7.43 | 7.44 |
| 1,103.000 | 7.45 | 7.47 | 7.48 | 7.49 | 7.50 |
| 1,104.000 | 7.52 | 7.53 | 7.54 | 7.56 | 7.57 |
| 1,105.000 | 7.58 | 7.59 | 7.61 | 7.62 | 7.63 |
| 1,106.000 | 7.65 | 7.66 | 7.68 | 7.69 | 7.70 |
| 1,107.000 | 7.72 | 7.73 | 7.74 | 7.76 | 7.77 |
| 1,108.000 | 7.79 | 7.80 | 7.82 | 7.83 | 7.85 |
| 1,109.000 | 7.86 | 7.87 | 7.89 | 7.90 | 7.92 |
| 1,110.000 | 7.94 | 7.95 | 7.97 | 7.98 | 8.00 |
| 1,111.000 | 8.01 | 8.03 | 8.04 | 8.06 | 8.08 |
| 1,112.000 | 8.09 | 8.11 | 8.12 | 8.14 | 8.16 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,113.000 | 8.17 | 8.19 | 8.21 | 8.22 | 8.24 |
| 1,114.000 | 8.26 | 8.28 | 8.29 | 8.31 | 8.33 |
| 1,115.000 | 8.35 | 8.36 | 8.38 | 8.40 | 8.42 |
| 1,116.000 | 8.44 | 8.46 | 8.47 | 8.49 | 8.51 |
| 1,117.000 | 8.53 | 8.55 | 8.57 | 8.59 | 8.61 |
| 1,118.000 | 8.63 | 8.65 | 8.67 | 8.69 | 8.71 |
| 1,119.000 | 8.73 | 8.75 | 8.77 | 8.79 | 8.81 |
| 1,120.000 | 8.83 | 8.85 | 8.88 | 8.90 | 8.92 |
| 1,121.000 | 8.94 | 8.96 | 8.99 | 9.01 | 9.03 |
| 1,122.000 | 9.05 | 9.08 | 9.10 | 9.12 | 9.15 |
| 1,123.000 | 9.17 | 9.20 | 9.22 | 9.25 | 9.27 |
| 1,124.000 | 9.30 | 9.32 | 9.35 | 9.37 | 9.40 |
| 1,125.000 | 9.42 | 9.45 | 9.48 | 9.50 | 9.53 |
| 1,126.000 | 9.56 | 9.58 | 9.61 | 9.64 | 9.67 |
| 1,127.000 | 9.70 | 9.73 | 9.75 | 9.78 | 9.81 |
| 1,128.000 | 9.84 | 9.87 | 9.90 | 9.93 | 9.96 |
| 1,129.000 | 9.99 | 10.03 | 10.06 | 10.09 | 10.12 |
| 1,130.000 | 10.16 | 10.19 | 10.22 | 10.26 | 10.29 |
| 1,131.000 | 10.32 | 10.36 | 10.39 | 10.43 | 10.47 |
| 1,132.000 | 10.50 | 10.54 | 10.58 | 10.61 | 10.65 |
| 1,133.000 | 10.69 | 10.73 | 10.77 | 10.81 | 10.85 |
| 1,134.000 | 10.89 | 10.93 | 10.97 | 11.02 | 11.06 |
| 1,135.000 | 11.10 | 11.15 | 11.19 | 11.24 | 11.28 |
| 1,136.000 | 11.33 | 11.38 | 11.42 | 11.47 | 11.52 |
| 1,137.000 | 11.57 | 11.62 | 11.67 | 11.73 | 11.78 |
| 1,138.000 | 11.83 | 11.89 | 11.94 | 12.00 | 12.05 |
| 1,139.000 | 12.11 | 12.17 | 12.23 | 12.29 | 12.35 |
| 1,140.000 | 12.41 | 12.48 | 12.54 | 12.61 | 12.67 |
| 1,141.000 | 12.74 | 12.81 | 12.88 | 12.95 | 13.03 |
| 1,142.000 | 13.10 | 13.18 | 13.26 | 13.34 | 13.42 |
| 1,143.000 | 13.50 | 13.58 | 13.67 | 13.76 | 13.85 |
| 1,144.000 | 13.94 | 14.03 | 14.13 | 14.23 | 14.33 |
| 1,145.000 | 14.43 | 14.54 | 14.65 | 14.76 | 14.88 |
| 1,146.000 | 15.00 | 15.12 | 15.24 | 15.37 | 15.51 |
| 1,147.000 | 15.65 | 15.79 | 15.94 | 16.09 | 16.25 |
| 1,148.000 | 16.42 | 16.59 | 16.77 | 16.96 | 17.15 |
| 1,149.000 | 17.36 | 17.57 | 17.80 | 18.04 | 18.30 |
| 1,150.000 | 18.57 | 18.86 | 19.18 | 19.52 | 19.90 |
| 1,151.000 | 20.31 | 20.79 | 21.34 | 22.02 | 22.93 |
| 1,152.000 | 25.18 | 26.26 | 26.66 | 26.93 | 27.14 |
| 1,153.000 | 27.30 | 27.44 | 27.55 | 27.64 | 27.72 |
| 1,154.000 | 27.78 | 27.83 | 27.87 | 27.91 | 27.93 |
| 1,155.000 | 27.95 | 27.96 | 27.96 | 27.96 | 27.95 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,156.000 | 27.93 | 27.91 | 27.89 | 27.86 | 27.83 |
| 1,157.000 | 27.79 | 27.75 | 27.70 | 27.65 | 27.60 |
| 1,158.000 | 27.54 | 27.48 | 27.42 | 27.35 | 27.28 |
| 1,159.000 | 27.20 | 27.12 | 27.04 | 26.95 | 26.86 |
| 1,160.000 | 26.77 | 26.67 | 26.57 | 26.47 | 26.36 |
| 1,161.000 | 26.25 | 26.14 | 26.02 | 25.89 | 25.77 |
| 1,162.000 | 25.64 | 25.50 | 25.36 | 25.22 | 25.07 |
| 1,163.000 | 24.91 | 24.76 | 24.59 | 24.42 | 24.25 |
| 1,164.000 | 24.07 | 23.88 | 23.69 | 23.49 | 23.28 |
| 1,165.000 | 23.06 | 22.84 | 22.61 | 22.37 | 22.12 |
| 1,166.000 | 21.86 | 21.59 | 21.30 | 21.00 | 20.69 |
| 1,167.000 | 20.35 | 20.00 | 19.62 | 19.21 | 18.77 |
| 1,168.000 | 18.28 | 17.73 | 17.11 | 16.36 | 15.37 |
| 1,169.000 | 13.06 | 11.89 | 11.41 | 11.06 | 10.77 |
| 1,170.000 | 10.53 | 10.31 | 10.11 | 9.94 | 9.77 |
| 1,171.000 | 9.62 | 9.48 | 9.34 | 9.22 | 9.10 |
| 1,172.000 | 8.99 | 8.88 | 8.78 | 8.68 | 8.58 |
| 1,173.000 | 8.50 | 8.41 | 8.33 | 8.25 | 8.17 |
| 1,174.000 | 8.09 | 8.02 | 7.95 | 7.88 | 7.82 |
| 1,175.000 | 7.76 | 7.69 | 7.63 | 7.58 | 7.52 |
| 1,176.000 | 7.46 | 7.41 | 7.36 | 7.31 | 7.25 |
| 1,177.000 | 7.21 | 7.16 | 7.11 | 7.07 | 7.02 |
| 1,178.000 | 6.98 | 6.93 | 6.89 | 6.85 | 6.81 |
| 1,179.000 | 6.77 | 6.73 | 6.69 | 6.66 | 6.62 |
| 1,180.000 | 6.58 | 6.55 | 6.51 | 6.48 | 6.45 |
| 1,181.000 | 6.41 | 6.38 | 6.35 | 6.32 | 6.29 |
| 1,182.000 | 6.26 | 6.23 | 6.20 | 6.17 | 6.14 |
| 1,183.000 | 6.11 | 6.08 | 6.06 | 6.03 | 6.00 |
| 1,184.000 | 5.98 | 5.95 | 5.93 | 5.90 | 5.88 |
| 1,185.000 | 5.85 | 5.83 | 5.80 | 5.78 | 5.75 |
| 1,186.000 | 5.73 | 5.71 | 5.69 | 5.66 | 5.64 |
| 1,187.000 | 5.62 | 5.60 | 5.58 | 5.56 | 5.54 |
| 1,188.000 | 5.52 | 5.50 | 5.48 | 5.46 | 5.44 |
| 1,189.000 | 5.42 | 5.40 | 5.38 | 5.36 | 5.34 |
| 1,190.000 | 5.32 | 5.31 | 5.29 | 5.27 | 5.25 |
| 1,191.000 | 5.24 | 5.22 | 5.20 | 5.18 | 5.17 |
| 1,192.000 | 5.15 | 5.14 | 5.12 | 5.10 | 5.09 |
| 1,193.000 | 5.07 | 5.06 | 5.04 | 5.03 | 5.01 |
| 1,194.000 | 5.00 | 4.98 | 4.97 | 4.95 | 4.94 |
| 1,195.000 | 4.92 | 4.91 | 4.90 | 4.88 | 4.87 |
| 1,196.000 | 4.85 | 4.84 | 4.83 | 4.81 | 4.80 |
| 1,197.000 | 4.79 | 4.78 | 4.76 | 4.75 | 4.74 |
| 1,198.000 | 4.72 | 4.71 | 4.70 | 4.69 | 4.68 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,199.000 | 4.66 | 4.65 | 4.64 | 4.63 | 4.62 |
| 1,200.000 | 4.61 | 4.59 | 4.58 | 4.57 | 4.56 |
| 1,201.000 | 4.55 | 4.54 | 4.53 | 4.52 | 4.51 |
| 1,202.000 | 4.50 | 4.48 | 4.47 | 4.46 | 4.45 |
| 1,203.000 | 4.44 | 4.43 | 4.42 | 4.41 | 4.40 |
| 1,204.000 | 4.39 | 4.38 | 4.37 | 4.36 | 4.35 |
| 1,205.000 | 4.34 | 4.33 | 4.33 | 4.32 | 4.31 |
| 1,206.000 | 4.30 | 4.29 | 4.28 | 4.27 | 4.26 |
| 1,207.000 | 4.25 | 4.24 | 4.23 | 4.23 | 4.22 |
| 1,208.000 | 4.21 | 4.20 | 4.19 | 4.18 | 4.17 |
| 1,209.000 | 4.17 | 4.16 | 4.15 | 4.14 | 4.13 |
| 1,210.000 | 4.12 | 4.12 | 4.11 | 4.10 | 4.09 |
| 1,211.000 | 4.08 | 4.08 | 4.07 | 4.06 | 4.05 |
| 1,212.000 | 4.05 | 4.04 | 4.03 | 4.02 | 4.02 |
| 1,213.000 | 4.01 | 4.00 | 3.99 | 3.99 | 3.98 |
| 1,214.000 | 3.97 | 3.96 | 3.96 | 3.95 | 3.94 |
| 1,215.000 | 3.94 | 3.93 | 3.92 | 3.92 | 3.91 |
| 1,216.000 | 3.90 | 3.89 | 3.89 | 3.88 | 3.87 |
| 1,217.000 | 3.87 | 3.86 | 3.85 | 3.85 | 3.84 |
| 1,218.000 | 3.84 | 3.83 | 3.82 | 3.82 | 3.81 |
| 1,219.000 | 3.80 | 3.80 | 3.79 | 3.78 | 3.78 |
| 1,220.000 | 3.77 | 3.77 | 3.76 | 3.75 | 3.75 |
| 1,221.000 | 3.74 | 3.74 | 3.73 | 3.72 | 3.72 |
| 1,222.000 | 3.71 | 3.71 | 3.70 | 3.70 | 3.69 |
| 1,223.000 | 3.68 | 3.68 | 3.67 | 3.67 | 3.66 |
| 1,224.000 | 3.66 | 3.65 | 3.64 | 3.64 | 3.63 |
| 1,225.000 | 3.63 | 3.62 | 3.62 | 3.61 | 3.61 |
| 1,226.000 | 3.60 | 3.60 | 3.59 | 3.59 | 3.58 |
| 1,227.000 | 3.58 | 3.57 | 3.56 | 3.56 | 3.55 |
| 1,228.000 | 3.55 | 3.54 | 3.54 | 3.53 | 3.53 |
| 1,229.000 | 3.52 | 3.52 | 3.51 | 3.51 | 3.50 |
| 1,230.000 | 3.50 | 3.49 | 3.49 | 3.48 | 3.48 |
| 1,231.000 | 3.47 | 3.47 | 3.46 | 3.46 | 3.45 |
| 1,232.000 | 3.45 | 3.44 | 3.44 | 3.43 | 3.43 |
| 1,233.000 | 3.42 | 3.42 | 3.41 | 3.41 | 3.41 |
| 1,234.000 | 3.40 | 3.40 | 3.39 | 3.39 | 3.38 |
| 1,235.000 | 3.38 | 3.37 | 3.37 | 3.36 | 3.36 |
| 1,236.000 | 3.36 | 3.35 | 3.35 | 3.34 | 3.34 |
| 1,237.000 | 3.33 | 3.33 | 3.32 | 3.32 | 3.32 |
| 1,238.000 | 3.31 | 3.31 | 3.30 | 3.30 | 3.30 |
| 1,239.000 | 3.29 | 3.29 | 3.28 | 3.28 | 3.27 |
| 1,240.000 | 3.27 | 3.27 | 3.26 | 3.26 | 3.25 |
| 1,241.000 | 3.25 | 3.25 | 3.24 | 3.24 | 3.23 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,242.000 | 3.23 | 3.23 | 3.22 | 3.22 | 3.21 |
| 1,243.000 | 3.21 | 3.21 | 3.20 | 3.20 | 3.20 |
| 1,244.000 | 3.19 | 3.19 | 3.18 | 3.18 | 3.18 |
| 1,245.000 | 3.17 | 3.17 | 3.17 | 3.16 | 3.16 |
| 1,246.000 | 3.15 | 3.15 | 3.15 | 3.14 | 3.14 |
| 1,247.000 | 3.14 | 3.13 | 3.13 | 3.13 | 3.12 |
| 1,248.000 | 3.12 | 3.11 | 3.11 | 3.11 | 3.10 |
| 1,249.000 | 3.10 | 3.10 | 3.09 | 3.09 | 3.09 |
| 1,250.000 | 3.08 | 3.08 | 3.08 | 3.07 | 3.07 |
| 1,251.000 | 3.07 | 3.06 | 3.06 | 3.06 | 3.05 |
| 1,252.000 | 3.05 | 3.05 | 3.04 | 3.04 | 3.04 |
| 1,253.000 | 3.03 | 3.03 | 3.03 | 3.02 | 3.02 |
| 1,254.000 | 3.02 | 3.01 | 3.01 | 3.01 | 3.00 |
| 1,255.000 | 3.00 | 3.00 | 3.00 | 2.99 | 2.99 |
| 1,256.000 | 2.99 | 2.98 | 2.98 | 2.98 | 2.97 |
| 1,257.000 | 2.97 | 2.97 | 2.96 | 2.96 | 2.96 |
| 1,258.000 | 2.96 | 2.95 | 2.95 | 2.95 | 2.94 |
| 1,259.000 | 2.94 | 2.94 | 2.93 | 2.93 | 2.93 |
| 1,260.000 | 2.93 | 2.92 | 2.92 | 2.92 | 2.91 |
| 1,261.000 | 2.91 | 2.91 | 2.91 | 2.90 | 2.90 |
| 1,262.000 | 2.90 | 2.89 | 2.89 | 2.89 | 2.89 |
| 1,263.000 | 2.88 | 2.88 | 2.88 | 2.87 | 2.87 |
| 1,264.000 | 2.87 | 2.87 | 2.86 | 2.86 | 2.86 |
| 1,265.000 | 2.86 | 2.85 | 2.85 | 2.85 | 2.85 |
| 1,266.000 | 2.84 | 2.84 | 2.84 | 2.83 | 2.83 |
| 1,267.000 | 2.83 | 2.83 | 2.82 | 2.82 | 2.82 |
| 1,268.000 | 2.82 | 2.81 | 2.81 | 2.81 | 2.81 |
| 1,269.000 | 2.80 | 2.80 | 2.80 | 2.80 | 2.79 |
| 1,270.000 | 2.79 | 2.79 | 2.79 | 2.78 | 2.78 |
| 1,271.000 | 2.78 | 2.78 | 2.77 | 2.77 | 2.77 |
| 1,272.000 | 2.77 | 2.76 | 2.76 | 2.76 | 2.76 |
| 1,273.000 | 2.75 | 2.75 | 2.75 | 2.75 | 2.74 |
| 1,274.000 | 2.74 | 2.74 | 2.74 | 2.73 | 2.73 |
| 1,275.000 | 2.73 | 2.73 | 2.73 | 2.72 | 2.72 |
| 1,276.000 | 2.72 | 2.72 | 2.71 | 2.71 | 2.71 |
| 1,277.000 | 2.71 | 2.70 | 2.70 | 2.70 | 2.70 |
| 1,278.000 | 2.70 | 2.69 | 2.69 | 2.69 | 2.69 |
| 1,279.000 | 2.68 | 2.68 | 2.68 | 2.68 | 2.68 |
| 1,280.000 | 2.67 | 2.67 | 2.67 | 2.67 | 2.66 |
| 1,281.000 | 2.66 | 2.66 | 2.66 | 2.66 | 2.65 |
| 1,282.000 | 2.65 | 2.65 | 2.65 | 2.65 | 2.64 |
| 1,283.000 | 2.64 | 2.64 | 2.64 | 2.63 | 2.63 |
| 1,284.000 | 2.63 | 2.63 | 2.63 | 2.62 | 2.62 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,285.000 | 2.62 | 2.62 | 2.62 | 2.61 | 2.61 |
| 1,286.000 | 2.61 | 2.61 | 2.61 | 2.60 | 2.60 |
| 1,287.000 | 2.60 | 2.60 | 2.60 | 2.59 | 2.59 |
| 1,288.000 | 2.59 | 2.59 | 2.59 | 2.58 | 2.58 |
| 1,289.000 | 2.58 | 2.58 | 2.58 | 2.57 | 2.57 |
| 1,290.000 | 2.57 | 2.57 | 2.57 | 2.56 | 2.56 |
| 1,291.000 | 2.56 | 2.56 | 2.56 | 2.55 | 2.55 |
| 1,292.000 | 2.55 | 2.55 | 2.55 | 2.54 | 2.54 |
| 1,293.000 | 2.54 | 2.54 | 2.54 | 2.54 | 2.53 |
| 1,294.000 | 2.53 | 2.53 | 2.53 | 2.53 | 2.52 |
| 1,295.000 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 |
| 1,296.000 | 2.51 | 2.51 | 2.51 | 2.51 | 2.51 |
| 1,297.000 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 |
| 1,298.000 | 2.50 | 2.49 | 2.49 | 2.49 | 2.49 |
| 1,299.000 | 2.49 | 2.48 | 2.48 | 2.48 | 2.48 |
| 1,300.000 | 2.48 | 2.48 | 2.47 | 2.47 | 2.47 |
| 1,301.000 | 2.47 | 2.47 | 2.47 | 2.46 | 2.46 |
| 1,302.000 | 2.46 | 2.46 | 2.46 | 2.46 | 2.45 |
| 1,303.000 | 2.45 | 2.45 | 2.45 | 2.45 | 2.45 |
| 1,304.000 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 |
| 1,305.000 | 2.44 | 2.43 | 2.43 | 2.43 | 2.43 |
| 1,306.000 | 2.43 | 2.43 | 2.42 | 2.42 | 2.42 |
| 1,307.000 | 2.42 | 2.42 | 2.42 | 2.41 | 2.41 |
| 1,308.000 | 2.41 | 2.41 | 2.41 | 2.41 | 2.40 |
| 1,309.000 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 |
| 1,310.000 | 2.39 | 2.39 | 2.39 | 2.39 | 2.39 |
| 1,311.000 | 2.39 | 2.39 | 2.38 | 2.38 | 2.38 |
| 1,312.000 | 2.38 | 2.38 | 2.38 | 2.37 | 2.37 |
| 1,313.000 | 2.37 | 2.37 | 2.37 | 2.37 | 2.37 |
| 1,314.000 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 |
| 1,315.000 | 2.36 | 2.36 | 2.35 | 2.35 | 2.35 |
| 1,316.000 | 2.35 | 2.35 | 2.35 | 2.34 | 2.34 |
| 1,317.000 | 2.34 | 2.34 | 2.34 | 2.34 | 2.34 |
| 1,318.000 | 2.33 | 2.33 | 2.33 | 2.33 | 2.33 |
| 1,319.000 | 2.33 | 2.33 | 2.33 | 2.32 | 2.32 |
| 1,320.000 | 2.32 | 2.32 | 2.32 | 2.32 | 2.32 |
| 1,321.000 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 |
| 1,322.000 | 2.31 | 2.31 | 2.30 | 2.30 | 2.30 |
| 1,323.000 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 |
| 1,324.000 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 |
| 1,325.000 | 2.29 | 2.29 | 2.28 | 2.28 | 2.28 |
| 1,326.000 | 2.28 | 2.28 | 2.28 | 2.28 | 2.28 |
| 1,327.000 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,328.000 | 2.27 | 2.27 | 2.27 | 2.26 | 2.26 |
| 1,329.000 | 2.26 | 2.26 | 2.26 | 2.26 | 2.26 |
| 1,330.000 | 2.26 | 2.25 | 2.25 | 2.25 | 2.25 |
| 1,331.000 | 2.25 | 2.25 | 2.25 | 2.25 | 2.24 |
| 1,332.000 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 |
| 1,333.000 | 2.24 | 2.24 | 2.23 | 2.23 | 2.23 |
| 1,334.000 | 2.23 | 2.23 | 2.23 | 2.23 | 2.23 |
| 1,335.000 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 |
| 1,336.000 | 2.22 | 2.22 | 2.22 | 2.22 | 2.21 |
| 1,337.000 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 |
| 1,338.000 | 2.21 | 2.21 | 2.20 | 2.20 | 2.20 |
| 1,339.000 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 |
| 1,340.000 | 2.20 | 2.19 | 2.19 | 2.19 | 2.19 |
| 1,341.000 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 |
| 1,342.000 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 |
| 1,343.000 | 2.18 | 2.18 | 2.18 | 2.18 | 2.17 |
| 1,344.000 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 |
| 1,345.000 | 2.17 | 2.17 | 2.17 | 2.16 | 2.16 |
| 1,346.000 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 |
| 1,347.000 | 2.16 | 2.16 | 2.15 | 2.15 | 2.15 |
| 1,348.000 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| 1,349.000 | 2.15 | 2.14 | 2.14 | 2.14 | 2.14 |
| 1,350.000 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| 1,351.000 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 |
| 1,352.000 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 |
| 1,353.000 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 |
| 1,354.000 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 |
| 1,355.000 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 |
| 1,356.000 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 |
| 1,357.000 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| 1,358.000 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| 1,359.000 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 |
| 1,360.000 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 |
| 1,361.000 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 |
| 1,362.000 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 |
| 1,363.000 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 |
| 1,364.000 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 |
| 1,365.000 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 |
| 1,366.000 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 |
| 1,367.000 | 2.06 | 2.05 | 2.05 | 2.05 | 2.05 |
| 1,368.000 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 |
| 1,369.000 | 2.05 | 2.05 | 2.04 | 2.04 | 2.04 |
| 1,370.000 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,371.000 | 2.04 | 2.04 | 2.04 | 2.03 | 2.03 |
| 1,372.000 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 |
| 1,373.000 | 2.03 | 2.03 | 2.03 | 2.03 | 2.02 |
| 1,374.000 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 |
| 1,375.000 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 |
| 1,376.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |
| 1,377.000 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 |
| 1,378.000 | 2.01 | 2.01 | 2.00 | 2.00 | 2.00 |
| 1,379.000 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 1,380.000 | 2.00 | 2.00 | 2.00 | 1.99 | 1.99 |
| 1,381.000 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| 1,382.000 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| 1,383.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 1,384.000 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 1,385.000 | 1.98 | 1.98 | 1.97 | 1.97 | 1.97 |
| 1,386.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 |
| 1,387.000 | 1.97 | 1.97 | 1.97 | 1.97 | 1.96 |
| 1,388.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 1,389.000 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 |
| 1,390.000 | 1.96 | 1.96 | 1.95 | 1.95 | 1.95 |
| 1,391.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 1,392.000 | 1.95 | 1.95 | 1.95 | 1.95 | 1.94 |
| 1,393.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 1,394.000 | 1.94 | 1.94 | 1.94 | 1.94 | 1.94 |
| 1,395.000 | 1.94 | 1.94 | 1.93 | 1.93 | 1.93 |
| 1,396.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 1,397.000 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 |
| 1,398.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 1,399.000 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 |
| 1,400.000 | 1.92 | 1.92 | 1.92 | 1.91 | 1.91 |
| 1,401.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 1,402.000 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| 1,403.000 | 1.91 | 1.91 | 1.90 | 1.90 | 1.90 |
| 1,404.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 1,405.000 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 1,406.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 1,407.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 1,408.000 | 1.89 | 1.89 | 1.89 | 1.89 | 1.88 |
| 1,409.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 1,410.000 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 1,411.000 | 1.88 | 1.88 | 1.88 | 1.87 | 1.87 |
| 1,412.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |
| 1,413.000 | 1.87 | 1.87 | 1.87 | 1.87 | 1.87 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,414.000 | 1.87 | 1.87 | 1.87 | 1.86 | 1.86 |
| 1,415.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 1,416.000 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| 1,417.000 | 1.86 | 1.86 | 1.85 | 1.85 | 1.85 |
| 1,418.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 1,419.000 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 1,420.000 | 1.85 | 1.85 | 1.84 | 1.84 | 1.84 |
| 1,421.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 1,422.000 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| 1,423.000 | 1.84 | 1.84 | 1.83 | 1.83 | 1.83 |
| 1,424.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 1,425.000 | 1.83 | 1.83 | 1.83 | 1.83 | 1.83 |
| 1,426.000 | 1.83 | 1.83 | 1.83 | 1.82 | 1.82 |
| 1,427.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 1,428.000 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| 1,429.000 | 1.82 | 1.82 | 1.82 | 1.81 | 1.81 |
| 1,430.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 1,431.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.81 |
| 1,432.000 | 1.81 | 1.81 | 1.81 | 1.81 | 1.80 |
| 1,433.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 1,434.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 1,435.000 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 1,436.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 1,437.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 1,438.000 | 1.79 | 1.79 | 1.79 | 1.79 | 1.79 |
| 1,439.000 | 1.79 | 1.79 | 1.78 | 1.78 | 1.78 |
| 1,440.000 | 1.78 | 1.76 | 1.74 | 1.72 | 1.70 |
| 1,441.000 | 1.68 | 1.66 | 1.63 | 1.61 | 1.59 |
| 1,442.000 | 1.57 | 1.55 | 1.53 | 1.51 | 1.49 |
| 1,443.000 | 1.46 | 1.44 | 1.42 | 1.40 | 1.38 |
| 1,444.000 | 1.36 | 1.34 | 1.32 | 1.30 | 1.27 |
| 1,445.000 | 1.25 | 1.23 | 1.21 | 1.19 | 1.17 |
| 1,446.000 | 1.15 | 1.13 | 1.11 | 1.08 | 1.06 |
| 1,447.000 | 1.04 | 1.02 | 1.00 | 0.98 | 0.96 |
| 1,448.000 | 0.94 | 0.92 | 0.90 | 0.87 | 0.85 |
| 1,449.000 | 0.83 | 0.81 | 0.79 | 0.77 | 0.75 |
| 1,450.000 | 0.73 | 0.71 | 0.69 | 0.67 | 0.64 |
| 1,451.000 | 0.62 | 0.60 | 0.58 | 0.56 | 0.54 |
| 1,452.000 | 0.52 | 0.50 | 0.48 | 0.46 | 0.44 |
| 1,453.000 | 0.41 | 0.39 | 0.37 | 0.35 | 0.33 |
| 1,454.000 | 0.31 | 0.29 | 0.27 | 0.25 | 0.23 |
| 1,455.000 | 0.21 | 0.19 | 0.17 | 0.14 | 0.12 |
| 1,456.000 | 0.10 | 0.08 | 0.06 | 0.04 | 0.02 |

**HYDROGRAPH ORDINATES (ft³/s)**
**Output Time Increment = 0.200 min**
**Time on left represents time for first value in each row.**

| Time (min) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) | Flow (ft³/s) |
|---|---|---|---|---|---|
| 1,457.000 | 0.00 | (N/A) | (N/A) | (N/A) | (N/A) |

| Modified Puls Results Summary | |
|---|---|
| Length (Channel) | 467.00 ft |
| Travel Time (Channel) | 1.902 min |
| Number of Sections | 1 |
| Length (Section) | 467.00 ft |
| Flow (Weighted) | 14.27 ft³/s |
| Overflow Channel | No Overflow Data |
| Elevation (Overflow) | 387.40 ft |

| Infiltration | |
|---|---|
| Infiltration Method (Computed) | No Infiltration |

| Initial Conditions | |
|---|---|
| Elevation (Starting Water Surface) | 384.40 ft |
| Volume (Starting, per section) | 0.000 ac-ft |
| Flow (Out Starting) | 0.00 ft³/s |
| Infiltration (Starting, per section) | 0.00 ft³/s |
| Flow (Total Out Starting) | 0.00 ft³/s |
| Time Increment | 3.000 min |

**Number of sections = 1**
**Storage, Area, Infiltration (per 467.00 ft section)**

| Elevation (ft) | Outflow (ft³/s) | Storage (ac-ft) | Area (ft²) | Infiltration (ft³/s) | Flow (Total) (ft³/s) | 2S/t + O (ft³/s) |
|---|---|---|---|---|---|---|
| 384.40 | 0.00 | 0.000 | 0.000 | 0.00 | 0.00 | 0.00 |
| 384.41 | 0.01 | 0.000 | 1,401.000 | 0.00 | 0.01 | 0.16 |
| 384.46 | 0.15 | 0.002 | 1,401.000 | 0.00 | 0.15 | 1.08 |
| 384.52 | 0.45 | 0.004 | 1,401.000 | 0.00 | 0.45 | 2.32 |
| 384.58 | 0.87 | 0.006 | 1,401.000 | 0.00 | 0.87 | 3.67 |
| 384.64 | 1.37 | 0.008 | 1,401.000 | 0.00 | 1.37 | 5.10 |
| 384.70 | 1.94 | 0.010 | 1,401.000 | 0.00 | 1.94 | 6.61 |
| 384.76 | 2.57 | 0.012 | 1,401.000 | 0.00 | 2.57 | 8.17 |
| 384.82 | 3.25 | 0.013 | 1,401.000 | 0.00 | 3.25 | 9.79 |
| 384.88 | 3.98 | 0.015 | 1,401.000 | 0.00 | 3.98 | 11.45 |
| 384.94 | 4.75 | 0.017 | 1,401.000 | 0.00 | 4.75 | 13.15 |
| 385.00 | 5.55 | 0.019 | 1,401.000 | 0.00 | 5.55 | 14.89 |
| 385.06 | 6.39 | 0.021 | 1,401.000 | 0.00 | 6.39 | 16.66 |
| 385.12 | 7.25 | 0.023 | 1,401.000 | 0.00 | 7.25 | 18.46 |
| 385.18 | 8.14 | 0.025 | 1,401.000 | 0.00 | 8.14 | 20.28 |
| 385.24 | 9.05 | 0.027 | 1,401.000 | 0.00 | 9.05 | 22.13 |
| 385.30 | 9.98 | 0.029 | 1,401.000 | 0.00 | 9.98 | 23.99 |

Subsection: Elevation-Volume-Flow Table (Channel)

Scenario: 50 Year - Live Oak Connection, Divert Street Flow

Label: CO-2

**Number of sections = 1**
**Storage, Area, Infiltration (per 467.00 ft section)**

| Elevation (ft) | Outflow (ft³/s) | Storage (ac-ft) | Area (ft²) | Infiltration (ft³/s) | Flow (Total) (ft³/s) | 2S/t + O (ft³/s) |
|---|---|---|---|---|---|---|
| 385.36 | 10.93 | 0.031 | 1,401.000 | 0.00 | 10.93 | 25.88 |
| 385.42 | 11.90 | 0.033 | 1,401.000 | 0.00 | 11.90 | 27.78 |
| 385.48 | 12.89 | 0.035 | 1,401.000 | 0.00 | 12.89 | 29.70 |
| 385.54 | 13.89 | 0.037 | 1,401.000 | 0.00 | 13.89 | 31.64 |
| 385.60 | 14.91 | 0.039 | 1,401.000 | 0.00 | 14.91 | 33.59 |
| 385.66 | 15.93 | 0.041 | 1,401.000 | 0.00 | 15.93 | 35.55 |
| 385.72 | 16.97 | 0.042 | 1,401.000 | 0.00 | 16.97 | 37.52 |
| 385.78 | 18.02 | 0.044 | 1,401.000 | 0.00 | 18.02 | 39.51 |
| 385.84 | 19.08 | 0.046 | 1,401.000 | 0.00 | 19.08 | 41.50 |
| 385.90 | 20.16 | 0.048 | 1,401.000 | 0.00 | 20.16 | 43.51 |
| 385.96 | 21.23 | 0.050 | 1,401.000 | 0.00 | 21.23 | 45.52 |
| 386.02 | 22.32 | 0.052 | 1,401.000 | 0.00 | 22.32 | 47.54 |
| 386.08 | 23.42 | 0.054 | 1,401.000 | 0.00 | 23.42 | 49.57 |
| 386.14 | 24.52 | 0.056 | 1,401.000 | 0.00 | 24.52 | 51.61 |
| 386.20 | 25.63 | 0.058 | 1,401.000 | 0.00 | 25.63 | 53.65 |
| 386.26 | 26.75 | 0.060 | 1,401.000 | 0.00 | 26.75 | 55.70 |
| 386.32 | 27.87 | 0.062 | 1,401.000 | 0.00 | 27.87 | 57.76 |
| 386.38 | 29.00 | 0.064 | 1,401.000 | 0.00 | 29.00 | 59.82 |
| 386.44 | 30.13 | 0.066 | 1,401.000 | 0.00 | 30.13 | 61.89 |
| 386.50 | 31.27 | 0.068 | 1,401.000 | 0.00 | 31.27 | 63.96 |
| 386.56 | 32.42 | 0.069 | 1,401.000 | 0.00 | 32.42 | 66.04 |
| 386.62 | 33.56 | 0.071 | 1,401.000 | 0.00 | 33.56 | 68.12 |
| 386.68 | 34.72 | 0.073 | 1,401.000 | 0.00 | 34.72 | 70.21 |
| 386.74 | 35.87 | 0.075 | 1,401.000 | 0.00 | 35.87 | 72.30 |
| 386.80 | 37.04 | 0.077 | 1,401.000 | 0.00 | 37.04 | 74.40 |
| 386.86 | 38.20 | 0.079 | 1,401.000 | 0.00 | 38.20 | 76.50 |
| 386.92 | 39.37 | 0.081 | 1,401.000 | 0.00 | 39.37 | 78.60 |
| 386.98 | 40.54 | 0.083 | 1,401.000 | 0.00 | 40.54 | 80.70 |
| 387.04 | 41.72 | 0.085 | 1,401.000 | 0.00 | 41.72 | 82.81 |
| 387.10 | 42.90 | 0.087 | 1,401.000 | 0.00 | 42.90 | 84.93 |
| 387.16 | 44.08 | 0.089 | 1,401.000 | 0.00 | 44.08 | 87.04 |
| 387.22 | 45.26 | 0.091 | 1,401.000 | 0.00 | 45.26 | 89.16 |
| 387.28 | 46.45 | 0.093 | 1,401.000 | 0.00 | 46.45 | 91.28 |
| 387.34 | 47.64 | 0.095 | 1,401.000 | 0.00 | 47.64 | 93.41 |
| 387.40 | 48.83 | 0.096 | 1,401.000 | 0.00 | 48.83 | 95.53 |

Label: CO-2

| Modified Puls Results Summary | |
|---|---|
| Length (Channel) | 467.00 ft |
| Travel Time (Channel) | 1.902 min |
| Number of Sections | 1 |
| Length (Section) | 467.00 ft |
| Flow (Weighted) | 14.27 ft³/s |
| Overflow Channel | No Overflow Data |
| Elevation (Overflow) | 387.40 ft |

| Infiltration | |
|---|---|
| Infiltration Method (Computed) | No Infiltration |

| Initial Conditions | |
|---|---|
| Elevation (Starting Water Surface) | 384.40 ft |
| Volume (Starting, per section) | 0.000 ac-ft |
| Flow (Out Starting) | 0.00 ft³/s |
| Infiltration (Starting, per section) | 0.00 ft³/s |
| Flow (Total Out Starting) | 0.00 ft³/s |
| Time Increment | 3.000 min |

| Inflow/Outflow Hydrograph Summary | | | |
|---|---|---|---|
| Flow (Peak In) | 39.95 ft³/s | Time to Peak (In) | 1,155.000 min |
| Flow (Peak Out) | 39.75 ft³/s | Time to Peak (Out) | 1,158.000 min |

| Mass Balance (ac-ft) | |
|---|---|
| Volume (Initial) | 0.000 ac-ft |
| Volume (Total Inflow) | 30.744 ac-ft |
| Volume (Total Infiltration) | 0.000 ac-ft |
| Volume (Total Outlet Outflow) | 30.744 ac-ft |
| Volume (Retained) | 0.000 ac-ft |
| Volume (Unrouted) | 0.000 ac-ft |
| Error (Mass Balance) | 0.0 % |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 0.000 | 0.00 | 0.03 | 0.10 | 0.23 | 0.38 |
| 15.000 | 0.57 | 0.77 | 0.98 | 1.03 | 1.07 |
| 30.000 | 1.11 | 1.15 | 1.19 | 1.23 | 1.27 |
| 45.000 | 1.30 | 1.34 | 1.38 | 1.42 | 1.46 |
| 60.000 | 1.50 | 1.54 | 1.58 | 1.62 | 1.66 |
| 75.000 | 1.70 | 1.73 | 1.77 | 1.81 | 1.85 |
| 90.000 | 1.89 | 1.93 | 1.97 | 2.01 | 2.03 |
| 105.000 | 2.04 | 2.06 | 2.08 | 2.10 | 2.12 |
| 120.000 | 2.14 | 2.16 | 2.18 | 2.20 | 2.22 |
| 135.000 | 2.24 | 2.26 | 2.28 | 2.30 | 2.32 |
| 150.000 | 2.34 | 2.36 | 2.38 | 2.39 | 2.41 |
| 165.000 | 2.43 | 2.45 | 2.47 | 2.49 | 2.51 |
| 180.000 | 2.53 | 2.55 | 2.57 | 2.59 | 2.61 |
| 195.000 | 2.63 | 2.65 | 2.67 | 2.69 | 2.72 |
| 210.000 | 2.74 | 2.76 | 2.78 | 2.80 | 2.82 |
| 225.000 | 2.84 | 2.86 | 2.88 | 2.90 | 2.92 |
| 240.000 | 2.94 | 2.96 | 2.98 | 3.00 | 3.02 |
| 255.000 | 3.03 | 3.05 | 3.07 | 3.08 | 3.10 |
| 270.000 | 3.11 | 3.13 | 3.15 | 3.16 | 3.18 |
| 285.000 | 3.20 | 3.21 | 3.23 | 3.24 | 3.26 |
| 300.000 | 3.28 | 3.29 | 3.31 | 3.33 | 3.34 |
| 315.000 | 3.36 | 3.38 | 3.39 | 3.41 | 3.43 |
| 330.000 | 3.44 | 3.46 | 3.48 | 3.49 | 3.51 |
| 345.000 | 3.53 | 3.54 | 3.56 | 3.58 | 3.60 |
| 360.000 | 3.61 | 3.63 | 3.65 | 3.66 | 3.68 |
| 375.000 | 3.70 | 3.72 | 3.73 | 3.75 | 3.77 |
| 390.000 | 3.79 | 3.80 | 3.82 | 3.84 | 3.86 |
| 405.000 | 3.87 | 3.89 | 3.91 | 3.93 | 3.94 |
| 420.000 | 3.96 | 3.98 | 4.00 | 4.01 | 4.03 |
| 435.000 | 4.04 | 4.06 | 4.07 | 4.08 | 4.10 |
| 450.000 | 4.11 | 4.12 | 4.13 | 4.14 | 4.15 |
| 465.000 | 4.16 | 4.17 | 4.18 | 4.19 | 4.20 |
| 480.000 | 4.20 | 4.21 | 4.22 | 4.23 | 4.23 |
| 495.000 | 4.24 | 4.25 | 4.25 | 4.26 | 4.26 |
| 510.000 | 4.27 | 4.27 | 4.28 | 4.28 | 4.29 |
| 525.000 | 4.29 | 4.30 | 4.30 | 4.31 | 4.31 |
| 540.000 | 4.31 | 4.32 | 4.32 | 4.33 | 4.33 |
| 555.000 | 4.33 | 4.34 | 4.34 | 4.34 | 4.34 |
| 570.000 | 4.35 | 4.35 | 4.35 | 4.36 | 4.36 |
| 585.000 | 4.36 | 4.36 | 4.37 | 4.37 | 4.37 |
| 600.000 | 4.37 | 4.38 | 4.38 | 4.38 | 4.38 |
| 615.000 | 4.38 | 4.39 | 4.39 | 4.39 | 4.39 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 630.000 | 4.39 | 4.40 | 4.40 | 4.40 | 4.40 |
| 645.000 | 4.40 | 4.41 | 4.41 | 4.41 | 4.41 |
| 660.000 | 4.41 | 4.41 | 4.42 | 4.42 | 4.42 |
| 675.000 | 4.42 | 4.42 | 4.43 | 4.43 | 4.43 |
| 690.000 | 4.43 | 4.43 | 4.43 | 4.44 | 4.44 |
| 705.000 | 4.44 | 4.44 | 4.44 | 4.44 | 4.45 |
| 720.000 | 4.45 | 4.45 | 4.45 | 4.45 | 4.46 |
| 735.000 | 4.46 | 4.46 | 4.46 | 4.46 | 4.46 |
| 750.000 | 4.47 | 4.47 | 4.47 | 4.47 | 4.47 |
| 765.000 | 4.48 | 4.48 | 4.48 | 4.48 | 4.48 |
| 780.000 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 |
| 795.000 | 4.50 | 4.50 | 4.50 | 4.50 | 4.51 |
| 810.000 | 4.51 | 4.51 | 4.51 | 4.52 | 4.52 |
| 825.000 | 4.52 | 4.53 | 4.53 | 4.53 | 4.54 |
| 840.000 | 4.54 | 4.54 | 4.55 | 4.55 | 4.56 |
| 855.000 | 4.56 | 4.57 | 4.57 | 4.58 | 4.58 |
| 870.000 | 4.59 | 4.59 | 4.60 | 4.60 | 4.61 |
| 885.000 | 4.62 | 4.62 | 4.63 | 4.64 | 4.64 |
| 900.000 | 4.65 | 4.66 | 4.67 | 4.67 | 4.68 |
| 915.000 | 4.69 | 4.70 | 4.71 | 4.72 | 4.72 |
| 930.000 | 4.73 | 4.74 | 4.75 | 4.76 | 4.77 |
| 945.000 | 4.78 | 4.79 | 4.80 | 4.81 | 4.83 |
| 960.000 | 4.84 | 4.85 | 4.86 | 4.87 | 4.89 |
| 975.000 | 4.90 | 4.91 | 4.93 | 4.94 | 4.95 |
| 990.000 | 4.97 | 4.98 | 5.00 | 5.01 | 5.03 |
| 1,005.000 | 5.04 | 5.06 | 5.08 | 5.09 | 5.11 |
| 1,020.000 | 5.13 | 5.14 | 5.16 | 5.18 | 5.20 |
| 1,035.000 | 5.22 | 5.24 | 5.26 | 5.28 | 5.30 |
| 1,050.000 | 5.33 | 5.35 | 5.37 | 5.40 | 5.42 |
| 1,065.000 | 5.45 | 5.48 | 5.51 | 5.53 | 5.56 |
| 1,080.000 | 5.59 | 5.62 | 5.66 | 5.69 | 5.73 |
| 1,095.000 | 5.76 | 5.80 | 5.84 | 5.88 | 5.92 |
| 1,110.000 | 5.97 | 6.01 | 6.06 | 6.11 | 6.16 |
| 1,125.000 | 6.21 | 6.27 | 6.33 | 6.39 | 6.47 |
| 1,140.000 | 6.55 | 6.63 | 6.73 | 6.85 | 7.03 |
| 1,155.000 | 7.24 | 7.45 | 7.63 | 7.78 | 7.89 |
| 1,170.000 | 7.96 | 8.00 | 8.03 | 8.06 | 8.08 |
| 1,185.000 | 8.10 | 8.12 | 8.14 | 8.16 | 8.17 |
| 1,200.000 | 8.18 | 8.19 | 8.20 | 8.21 | 8.22 |
| 1,215.000 | 8.23 | 8.24 | 8.25 | 8.25 | 8.26 |
| 1,230.000 | 8.26 | 8.27 | 8.27 | 8.27 | 8.28 |
| 1,245.000 | 8.28 | 8.28 | 8.28 | 8.28 | 8.28 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 1,260.000 | 8.28 | 8.28 | 8.28 | 8.28 | 8.28 |
| 1,275.000 | 8.28 | 8.28 | 8.28 | 8.28 | 8.28 |
| 1,290.000 | 8.27 | 8.27 | 8.27 | 8.27 | 8.26 |
| 1,305.000 | 8.26 | 8.26 | 8.25 | 8.25 | 8.25 |
| 1,320.000 | 8.24 | 8.24 | 8.24 | 8.23 | 8.23 |
| 1,335.000 | 8.22 | 8.22 | 8.21 | 8.21 | 8.20 |
| 1,350.000 | 8.20 | 8.19 | 8.19 | 8.18 | 8.18 |
| 1,365.000 | 8.17 | 8.17 | 8.16 | 8.16 | 8.15 |
| 1,380.000 | 8.14 | 8.14 | 8.13 | 8.13 | 8.12 |
| 1,395.000 | 8.11 | 8.11 | 8.10 | 8.09 | 8.09 |
| 1,410.000 | 8.08 | 8.07 | 8.07 | 8.06 | 8.05 |
| 1,425.000 | 8.05 | 8.04 | 8.03 | 8.02 | 8.02 |
| 1,440.000 | 8.01 | 8.00 | 7.99 | 7.97 | 7.96 |
| 1,455.000 | 7.94 | 7.92 | 7.90 | 7.88 | 7.86 |
| 1,470.000 | 7.84 | 7.82 | 7.80 | 7.78 | 7.76 |
| 1,485.000 | 7.74 | 7.72 | 7.70 | 7.68 | 7.66 |
| 1,500.000 | 7.64 | 7.62 | 7.60 | 7.58 | 7.56 |
| 1,515.000 | 7.54 | 7.52 | 7.50 | 7.48 | 7.46 |
| 1,530.000 | 7.44 | 7.42 | 7.40 | 7.38 | 7.36 |
| 1,545.000 | 7.34 | 7.32 | 7.30 | 7.28 | 7.26 |
| 1,560.000 | 7.24 | 7.22 | 7.20 | 7.19 | 7.17 |
| 1,575.000 | 7.15 | 7.13 | 7.11 | 7.09 | 7.07 |
| 1,590.000 | 7.05 | 7.03 | 7.01 | 6.99 | 6.97 |
| 1,605.000 | 6.94 | 6.92 | 6.90 | 6.88 | 6.86 |
| 1,620.000 | 6.84 | 6.82 | 6.80 | 6.78 | 6.76 |
| 1,635.000 | 6.74 | 6.71 | 6.69 | 6.67 | 6.65 |
| 1,650.000 | 6.63 | 6.61 | 6.59 | 6.57 | 6.55 |
| 1,665.000 | 6.53 | 6.50 | 6.48 | 6.46 | 6.44 |
| 1,680.000 | 6.42 | 6.40 | 6.38 | 6.36 | 6.34 |
| 1,695.000 | 6.32 | 6.30 | 6.27 | 6.25 | 6.23 |
| 1,710.000 | 6.21 | 6.19 | 6.17 | 6.15 | 6.13 |
| 1,725.000 | 6.11 | 6.09 | 6.07 | 6.04 | 6.02 |
| 1,740.000 | 6.00 | 5.98 | 5.96 | 5.94 | 5.91 |
| 1,755.000 | 5.89 | 5.87 | 5.85 | 5.82 | 5.80 |
| 1,770.000 | 5.78 | 5.76 | 5.74 | 5.71 | 5.69 |
| 1,785.000 | 5.67 | 5.65 | 5.62 | 5.60 | 5.58 |
| 1,800.000 | 5.56 | 5.54 | 5.51 | 5.49 | 5.47 |
| 1,815.000 | 5.45 | 5.42 | 5.40 | 5.38 | 5.36 |
| 1,830.000 | 5.34 | 5.31 | 5.29 | 5.27 | 5.25 |
| 1,845.000 | 5.22 | 5.20 | 5.18 | 5.16 | 5.14 |
| 1,860.000 | 5.11 | 5.09 | 5.07 | 5.05 | 5.02 |
| 1,875.000 | 5.00 | 4.98 | 4.95 | 4.93 | 4.91 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 1,890.000 | 4.88 | 4.86 | 4.84 | 4.81 | 4.79 |
| 1,905.000 | 4.77 | 4.74 | 4.72 | 4.70 | 4.67 |
| 1,920.000 | 4.65 | 4.63 | 4.60 | 4.58 | 4.55 |
| 1,935.000 | 4.53 | 4.51 | 4.48 | 4.46 | 4.44 |
| 1,950.000 | 4.42 | 4.40 | 4.38 | 4.36 | 4.35 |
| 1,965.000 | 4.33 | 4.31 | 4.30 | 4.29 | 4.27 |
| 1,980.000 | 4.26 | 4.25 | 4.23 | 4.22 | 4.21 |
| 1,995.000 | 4.20 | 4.19 | 4.18 | 4.17 | 4.16 |
| 2,010.000 | 4.15 | 4.15 | 4.14 | 4.13 | 4.12 |
| 2,025.000 | 4.12 | 4.11 | 4.11 | 4.10 | 4.09 |
| 2,040.000 | 4.09 | 4.08 | 4.08 | 4.07 | 4.07 |
| 2,055.000 | 4.06 | 4.06 | 4.06 | 4.05 | 4.05 |
| 2,070.000 | 4.05 | 4.04 | 4.04 | 4.04 | 4.03 |
| 2,085.000 | 4.03 | 4.03 | 4.02 | 4.02 | 4.02 |
| 2,100.000 | 4.02 | 4.02 | 4.01 | 4.01 | 4.01 |
| 2,115.000 | 4.01 | 4.01 | 4.00 | 4.00 | 4.00 |
| 2,130.000 | 4.00 | 4.00 | 4.00 | 4.00 | 3.99 |
| 2,145.000 | 3.99 | 3.99 | 3.99 | 3.99 | 3.99 |
| 2,160.000 | 3.98 | 3.98 | 3.98 | 3.98 | 3.98 |
| 2,175.000 | 3.98 | 3.98 | 3.97 | 3.97 | 3.97 |
| 2,190.000 | 3.97 | 3.97 | 3.97 | 3.96 | 3.96 |
| 2,205.000 | 3.96 | 3.96 | 3.96 | 3.96 | 3.96 |
| 2,220.000 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| 2,235.000 | 3.95 | 3.94 | 3.94 | 3.94 | 3.94 |
| 2,250.000 | 3.94 | 3.94 | 3.94 | 3.93 | 3.93 |
| 2,265.000 | 3.93 | 3.93 | 3.93 | 3.93 | 3.92 |
| 2,280.000 | 3.92 | 3.92 | 3.92 | 3.92 | 3.92 |
| 2,295.000 | 3.91 | 3.91 | 3.91 | 3.91 | 3.91 |
| 2,310.000 | 3.91 | 3.91 | 3.90 | 3.90 | 3.90 |
| 2,325.000 | 3.90 | 3.90 | 3.90 | 3.89 | 3.89 |
| 2,340.000 | 3.89 | 3.89 | 3.89 | 3.89 | 3.89 |
| 2,355.000 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 |
| 2,370.000 | 3.88 | 3.87 | 3.87 | 3.87 | 3.87 |
| 2,385.000 | 3.87 | 3.87 | 3.87 | 3.86 | 3.86 |
| 2,400.000 | 3.86 | 3.86 | 3.86 | 3.86 | 3.85 |
| 2,415.000 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 |
| 2,430.000 | 3.85 | 3.84 | 3.84 | 3.84 | 3.84 |
| 2,445.000 | 3.84 | 3.84 | 3.83 | 3.83 | 3.83 |
| 2,460.000 | 3.83 | 3.83 | 3.83 | 3.83 | 3.82 |
| 2,475.000 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 |
| 2,490.000 | 3.81 | 3.81 | 3.81 | 3.81 | 3.81 |
| 2,505.000 | 3.81 | 3.81 | 3.80 | 3.80 | 3.80 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 2,520.000 | 3.80 | 3.80 | 3.80 | 3.79 | 3.79 |
| 2,535.000 | 3.79 | 3.79 | 3.79 | 3.79 | 3.78 |
| 2,550.000 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| 2,565.000 | 3.78 | 3.77 | 3.77 | 3.77 | 3.77 |
| 2,580.000 | 3.77 | 3.77 | 3.76 | 3.76 | 3.76 |
| 2,595.000 | 3.76 | 3.76 | 3.76 | 3.76 | 3.75 |
| 2,610.000 | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 |
| 2,625.000 | 3.74 | 3.74 | 3.74 | 3.74 | 3.74 |
| 2,640.000 | 3.74 | 3.74 | 3.73 | 3.73 | 3.73 |
| 2,655.000 | 3.73 | 3.73 | 3.73 | 3.72 | 3.72 |
| 2,670.000 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 |
| 2,685.000 | 3.71 | 3.71 | 3.71 | 3.71 | 3.71 |
| 2,700.000 | 3.71 | 3.70 | 3.70 | 3.70 | 3.70 |
| 2,715.000 | 3.70 | 3.70 | 3.70 | 3.69 | 3.69 |
| 2,730.000 | 3.69 | 3.69 | 3.69 | 3.69 | 3.68 |
| 2,745.000 | 3.68 | 3.68 | 3.68 | 3.68 | 3.68 |
| 2,760.000 | 3.68 | 3.67 | 3.67 | 3.67 | 3.67 |
| 2,775.000 | 3.67 | 3.67 | 3.66 | 3.66 | 3.66 |
| 2,790.000 | 3.66 | 3.66 | 3.66 | 3.66 | 3.65 |
| 2,805.000 | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 |
| 2,820.000 | 3.64 | 3.64 | 3.64 | 3.64 | 3.64 |
| 2,835.000 | 3.64 | 3.63 | 3.63 | 3.63 | 3.63 |
| 2,850.000 | 3.63 | 3.63 | 3.63 | 3.62 | 3.62 |
| 2,865.000 | 3.62 | 3.62 | 3.62 | 3.62 | 3.61 |
| 2,880.000 | 3.61 | 3.61 | 3.61 | 3.61 | 3.61 |
| 2,895.000 | 3.61 | 3.60 | 3.60 | 3.60 | 3.60 |
| 2,910.000 | 3.60 | 3.60 | 3.59 | 3.59 | 3.59 |
| 2,925.000 | 3.59 | 3.59 | 3.59 | 3.59 | 3.58 |
| 2,940.000 | 3.58 | 3.58 | 3.58 | 3.58 | 3.58 |
| 2,955.000 | 3.57 | 3.57 | 3.57 | 3.57 | 3.57 |
| 2,970.000 | 3.57 | 3.57 | 3.56 | 3.56 | 3.56 |
| 2,985.000 | 3.56 | 3.56 | 3.56 | 3.55 | 3.55 |
| 3,000.000 | 3.55 | 3.55 | 3.55 | 3.55 | 3.55 |
| 3,015.000 | 3.54 | 3.54 | 3.54 | 3.54 | 3.54 |
| 3,030.000 | 3.54 | 3.53 | 3.53 | 3.53 | 3.53 |
| 3,045.000 | 3.53 | 3.53 | 3.53 | 3.52 | 3.52 |
| 3,060.000 | 3.52 | 3.52 | 3.52 | 3.52 | 3.51 |
| 3,075.000 | 3.51 | 3.51 | 3.51 | 3.51 | 3.51 |
| 3,090.000 | 3.50 | 3.50 | 3.50 | 3.50 | 3.50 |
| 3,105.000 | 3.50 | 3.50 | 3.49 | 3.49 | 3.49 |
| 3,120.000 | 3.49 | 3.49 | 3.49 | 3.48 | 3.48 |
| 3,135.000 | 3.48 | 3.48 | 3.48 | 3.48 | 3.48 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 3,150.000 | 3.47 | 3.47 | 3.47 | 3.47 | 3.47 |
| 3,165.000 | 3.47 | 3.46 | 3.46 | 3.46 | 3.46 |
| 3,180.000 | 3.46 | 3.46 | 3.46 | 3.45 | 3.45 |
| 3,195.000 | 3.45 | 3.45 | 3.45 | 3.45 | 3.44 |
| 3,210.000 | 3.44 | 3.44 | 3.44 | 3.44 | 3.44 |
| 3,225.000 | 3.44 | 3.43 | 3.43 | 3.43 | 3.43 |
| 3,240.000 | 3.43 | 3.43 | 3.42 | 3.42 | 3.42 |
| 3,255.000 | 3.42 | 3.42 | 3.42 | 3.42 | 3.41 |
| 3,270.000 | 3.41 | 3.41 | 3.41 | 3.41 | 3.41 |
| 3,285.000 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 |
| 3,300.000 | 3.40 | 3.40 | 3.39 | 3.39 | 3.39 |
| 3,315.000 | 3.39 | 3.39 | 3.39 | 3.38 | 3.38 |
| 3,330.000 | 3.38 | 3.38 | 3.38 | 3.38 | 3.38 |
| 3,345.000 | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 |
| 3,360.000 | 3.37 | 3.36 | 3.36 | 3.36 | 3.36 |
| 3,375.000 | 3.36 | 3.36 | 3.35 | 3.35 | 3.35 |
| 3,390.000 | 3.35 | 3.35 | 3.35 | 3.35 | 3.34 |
| 3,405.000 | 3.34 | 3.34 | 3.34 | 3.34 | 3.34 |
| 3,420.000 | 3.33 | 3.33 | 3.33 | 3.33 | 3.33 |
| 3,435.000 | 3.33 | 3.33 | 3.32 | 3.32 | 3.32 |
| 3,450.000 | 3.32 | 3.32 | 3.32 | 3.31 | 3.31 |
| 3,465.000 | 3.31 | 3.31 | 3.31 | 3.31 | 3.31 |
| 3,480.000 | 3.30 | 3.30 | 3.30 | 3.30 | 3.30 |
| 3,495.000 | 3.30 | 3.29 | 3.29 | 3.29 | 3.29 |
| 3,510.000 | 3.29 | 3.29 | 3.29 | 3.28 | 3.28 |
| 3,525.000 | 3.28 | 3.28 | 3.28 | 3.28 | 3.27 |
| 3,540.000 | 3.27 | 3.27 | 3.27 | 3.27 | 3.27 |
| 3,555.000 | 3.27 | 3.26 | 3.26 | 3.26 | 3.26 |
| 3,570.000 | 3.26 | 3.26 | 3.25 | 3.25 | 3.25 |
| 3,585.000 | 3.25 | 3.25 | 3.25 | 3.25 | 3.24 |
| 3,600.000 | 3.24 | 3.24 | 3.24 | 3.24 | 3.24 |
| 3,615.000 | 3.23 | 3.23 | 3.23 | 3.23 | 3.23 |
| 3,630.000 | 3.23 | 3.22 | 3.22 | 3.22 | 3.22 |
| 3,645.000 | 3.22 | 3.22 | 3.22 | 3.21 | 3.21 |
| 3,660.000 | 3.21 | 3.21 | 3.21 | 3.21 | 3.20 |
| 3,675.000 | 3.20 | 3.20 | 3.20 | 3.20 | 3.20 |
| 3,690.000 | 3.20 | 3.19 | 3.19 | 3.19 | 3.19 |
| 3,705.000 | 3.19 | 3.19 | 3.18 | 3.18 | 3.18 |
| 3,720.000 | 3.18 | 3.18 | 3.18 | 3.18 | 3.17 |
| 3,735.000 | 3.17 | 3.17 | 3.17 | 3.17 | 3.17 |
| 3,750.000 | 3.16 | 3.16 | 3.16 | 3.16 | 3.16 |
| 3,765.000 | 3.16 | 3.16 | 3.15 | 3.15 | 3.15 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 3,780.000 | 3.15 | 3.15 | 3.15 | 3.14 | 3.14 |
| 3,795.000 | 3.14 | 3.14 | 3.14 | 3.14 | 3.14 |
| 3,810.000 | 3.13 | 3.13 | 3.13 | 3.13 | 3.13 |
| 3,825.000 | 3.13 | 3.12 | 3.12 | 3.12 | 3.12 |
| 3,840.000 | 3.12 | 3.12 | 3.12 | 3.11 | 3.11 |
| 3,855.000 | 3.11 | 3.11 | 3.11 | 3.11 | 3.10 |
| 3,870.000 | 3.10 | 3.10 | 3.10 | 3.10 | 3.10 |
| 3,885.000 | 3.10 | 3.09 | 3.09 | 3.09 | 3.09 |
| 3,900.000 | 3.09 | 3.09 | 3.08 | 3.08 | 3.08 |
| 3,915.000 | 3.08 | 3.08 | 3.08 | 3.07 | 3.07 |
| 3,930.000 | 3.07 | 3.07 | 3.07 | 3.07 | 3.07 |
| 3,945.000 | 3.06 | 3.06 | 3.06 | 3.06 | 3.06 |
| 3,960.000 | 3.06 | 3.05 | 3.05 | 3.05 | 3.05 |
| 3,975.000 | 3.05 | 3.05 | 3.05 | 3.04 | 3.04 |
| 3,990.000 | 3.04 | 3.04 | 3.04 | 3.04 | 3.03 |
| 4,005.000 | 3.03 | 3.03 | 3.03 | 3.03 | 3.03 |
| 4,020.000 | 3.03 | 3.02 | 3.02 | 3.02 | 3.02 |
| 4,035.000 | 3.02 | 3.02 | 3.01 | 3.01 | 3.01 |
| 4,050.000 | 3.01 | 3.01 | 3.01 | 3.01 | 3.00 |
| 4,065.000 | 3.00 | 3.00 | 3.00 | 3.00 | 2.99 |
| 4,080.000 | 2.99 | 2.99 | 2.99 | 2.99 | 2.98 |
| 4,095.000 | 2.98 | 2.98 | 2.98 | 2.98 | 2.97 |
| 4,110.000 | 2.97 | 2.97 | 2.97 | 2.97 | 2.96 |
| 4,125.000 | 2.96 | 2.96 | 2.96 | 2.96 | 2.95 |
| 4,140.000 | 2.95 | 2.95 | 2.95 | 2.95 | 2.94 |
| 4,155.000 | 2.94 | 2.94 | 2.94 | 2.94 | 2.93 |
| 4,170.000 | 2.93 | 2.93 | 2.93 | 2.93 | 2.92 |
| 4,185.000 | 2.92 | 2.92 | 2.92 | 2.92 | 2.91 |
| 4,200.000 | 2.91 | 2.91 | 2.91 | 2.91 | 2.90 |
| 4,215.000 | 2.90 | 2.90 | 2.90 | 2.90 | 2.89 |
| 4,230.000 | 2.89 | 2.89 | 2.89 | 2.89 | 2.88 |
| 4,245.000 | 2.88 | 2.88 | 2.88 | 2.88 | 2.87 |
| 4,260.000 | 2.87 | 2.87 | 2.87 | 2.87 | 2.86 |
| 4,275.000 | 2.86 | 2.86 | 2.86 | 2.86 | 2.85 |
| 4,290.000 | 2.85 | 2.85 | 2.85 | 2.85 | 2.84 |
| 4,305.000 | 2.84 | 2.84 | 2.84 | 2.84 | 2.83 |
| 4,320.000 | 2.83 | 2.83 | 2.83 | 2.83 | 2.82 |
| 4,335.000 | 2.82 | 2.82 | 2.82 | 2.82 | 2.81 |
| 4,350.000 | 2.81 | 2.81 | 2.81 | 2.81 | 2.80 |
| 4,365.000 | 2.80 | 2.80 | 2.80 | 2.80 | 2.79 |
| 4,380.000 | 2.79 | 2.79 | 2.79 | 2.79 | 2.78 |
| 4,395.000 | 2.78 | 2.78 | 2.78 | 2.78 | 2.77 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 4,410.000 | 2.77 | 2.77 | 2.77 | 2.77 | 2.76 |
| 4,425.000 | 2.76 | 2.76 | 2.76 | 2.76 | 2.75 |
| 4,440.000 | 2.75 | 2.75 | 2.75 | 2.75 | 2.74 |
| 4,455.000 | 2.74 | 2.74 | 2.74 | 2.74 | 2.73 |
| 4,470.000 | 2.73 | 2.73 | 2.73 | 2.73 | 2.72 |
| 4,485.000 | 2.72 | 2.72 | 2.72 | 2.71 | 2.71 |
| 4,500.000 | 2.71 | 2.71 | 2.71 | 2.70 | 2.70 |
| 4,515.000 | 2.70 | 2.70 | 2.70 | 2.69 | 2.69 |
| 4,530.000 | 2.69 | 2.69 | 2.69 | 2.68 | 2.68 |
| 4,545.000 | 2.68 | 2.68 | 2.68 | 2.67 | 2.67 |
| 4,560.000 | 2.67 | 2.67 | 2.67 | 2.66 | 2.66 |
| 4,575.000 | 2.66 | 2.66 | 2.66 | 2.65 | 2.65 |
| 4,590.000 | 2.65 | 2.65 | 2.65 | 2.64 | 2.64 |
| 4,605.000 | 2.64 | 2.64 | 2.64 | 2.63 | 2.63 |
| 4,620.000 | 2.63 | 2.63 | 2.63 | 2.62 | 2.62 |
| 4,635.000 | 2.62 | 2.62 | 2.62 | 2.61 | 2.61 |
| 4,650.000 | 2.61 | 2.61 | 2.61 | 2.60 | 2.60 |
| 4,665.000 | 2.60 | 2.60 | 2.60 | 2.59 | 2.59 |
| 4,680.000 | 2.59 | 2.59 | 2.59 | 2.58 | 2.58 |
| 4,695.000 | 2.58 | 2.58 | 2.58 | 2.57 | 2.57 |
| 4,710.000 | 2.57 | 2.57 | 2.57 | 2.56 | 2.56 |
| 4,725.000 | 2.56 | 2.56 | 2.56 | 2.55 | 2.55 |
| 4,740.000 | 2.55 | 2.55 | 2.55 | 2.54 | 2.54 |
| 4,755.000 | 2.54 | 2.54 | 2.54 | 2.53 | 2.53 |
| 4,770.000 | 2.53 | 2.53 | 2.53 | 2.52 | 2.52 |
| 4,785.000 | 2.52 | 2.52 | 2.52 | 2.51 | 2.51 |
| 4,800.000 | 2.51 | 2.51 | 2.51 | 2.50 | 2.50 |
| 4,815.000 | 2.50 | 2.50 | 2.50 | 2.49 | 2.49 |
| 4,830.000 | 2.49 | 2.49 | 2.49 | 2.48 | 2.48 |
| 4,845.000 | 2.48 | 2.48 | 2.48 | 2.47 | 2.47 |
| 4,860.000 | 2.47 | 2.47 | 2.47 | 2.46 | 2.46 |
| 4,875.000 | 2.46 | 2.46 | 2.46 | 2.45 | 2.45 |
| 4,890.000 | 2.45 | 2.45 | 2.45 | 2.44 | 2.44 |
| 4,905.000 | 2.44 | 2.44 | 2.44 | 2.43 | 2.43 |
| 4,920.000 | 2.43 | 2.43 | 2.43 | 2.42 | 2.42 |
| 4,935.000 | 2.42 | 2.42 | 2.42 | 2.41 | 2.41 |
| 4,950.000 | 2.41 | 2.41 | 2.40 | 2.40 | 2.40 |
| 4,965.000 | 2.40 | 2.40 | 2.39 | 2.39 | 2.39 |
| 4,980.000 | 2.39 | 2.39 | 2.38 | 2.38 | 2.38 |
| 4,995.000 | 2.38 | 2.38 | 2.37 | 2.37 | 2.37 |
| 5,010.000 | 2.37 | 2.37 | 2.36 | 2.36 | 2.36 |
| 5,025.000 | 2.36 | 2.36 | 2.35 | 2.35 | 2.35 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 5,040.000 | 2.35 | 2.35 | 2.34 | 2.34 | 2.34 |
| 5,055.000 | 2.34 | 2.34 | 2.33 | 2.33 | 2.33 |
| 5,070.000 | 2.33 | 2.33 | 2.32 | 2.32 | 2.32 |
| 5,085.000 | 2.32 | 2.32 | 2.31 | 2.31 | 2.31 |
| 5,100.000 | 2.31 | 2.31 | 2.30 | 2.30 | 2.30 |
| 5,115.000 | 2.30 | 2.30 | 2.29 | 2.29 | 2.29 |
| 5,130.000 | 2.29 | 2.29 | 2.28 | 2.28 | 2.28 |
| 5,145.000 | 2.28 | 2.28 | 2.27 | 2.27 | 2.27 |
| 5,160.000 | 2.27 | 2.27 | 2.26 | 2.26 | 2.26 |
| 5,175.000 | 2.26 | 2.26 | 2.25 | 2.25 | 2.25 |
| 5,190.000 | 2.25 | 2.25 | 2.24 | 2.24 | 2.24 |
| 5,205.000 | 2.24 | 2.24 | 2.23 | 2.23 | 2.23 |
| 5,220.000 | 2.23 | 2.23 | 2.22 | 2.22 | 2.22 |
| 5,235.000 | 2.22 | 2.22 | 2.21 | 2.21 | 2.21 |
| 5,250.000 | 2.21 | 2.21 | 2.20 | 2.20 | 2.20 |
| 5,265.000 | 2.20 | 2.20 | 2.19 | 2.19 | 2.19 |
| 5,280.000 | 2.19 | 2.19 | 2.18 | 2.18 | 2.18 |
| 5,295.000 | 2.18 | 2.18 | 2.17 | 2.17 | 2.17 |
| 5,310.000 | 2.17 | 2.17 | 2.16 | 2.16 | 2.16 |
| 5,325.000 | 2.16 | 2.16 | 2.15 | 2.15 | 2.15 |
| 5,340.000 | 2.15 | 2.15 | 2.14 | 2.14 | 2.14 |
| 5,355.000 | 2.14 | 2.14 | 2.13 | 2.13 | 2.13 |
| 5,370.000 | 2.13 | 2.13 | 2.12 | 2.12 | 2.12 |
| 5,385.000 | 2.12 | 2.12 | 2.11 | 2.11 | 2.11 |
| 5,400.000 | 2.11 | 2.10 | 2.10 | 2.10 | 2.10 |
| 5,415.000 | 2.10 | 2.09 | 2.09 | 2.09 | 2.09 |
| 5,430.000 | 2.09 | 2.08 | 2.08 | 2.08 | 2.08 |
| 5,445.000 | 2.08 | 2.07 | 2.07 | 2.07 | 2.07 |
| 5,460.000 | 2.07 | 2.06 | 2.06 | 2.06 | 2.06 |
| 5,475.000 | 2.06 | 2.05 | 2.05 | 2.05 | 2.05 |
| 5,490.000 | 2.05 | 2.04 | 2.04 | 2.04 | 2.04 |
| 5,505.000 | 2.04 | 2.03 | 2.03 | 2.03 | 2.03 |
| 5,520.000 | 2.03 | 2.02 | 2.02 | 2.02 | 2.02 |
| 5,535.000 | 2.02 | 2.01 | 2.01 | 2.01 | 2.01 |
| 5,550.000 | 2.01 | 2.00 | 2.00 | 2.00 | 2.00 |
| 5,565.000 | 1.99 | 1.99 | 1.98 | 1.98 | 1.98 |
| 5,580.000 | 1.97 | 1.97 | 1.96 | 1.96 | 1.95 |
| 5,595.000 | 1.95 | 1.95 | 1.94 | 1.94 | 1.93 |
| 5,610.000 | 1.93 | 1.93 | 1.92 | 1.92 | 1.91 |
| 5,625.000 | 1.91 | 1.90 | 1.90 | 1.90 | 1.89 |
| 5,640.000 | 1.89 | 1.88 | 1.88 | 1.88 | 1.87 |
| 5,655.000 | 1.87 | 1.86 | 1.86 | 1.85 | 1.85 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 5,670.000 | 1.85 | 1.84 | 1.84 | 1.83 | 1.83 |
| 5,685.000 | 1.82 | 1.82 | 1.82 | 1.81 | 1.81 |
| 5,700.000 | 1.80 | 1.80 | 1.80 | 1.79 | 1.79 |
| 5,715.000 | 1.78 | 1.78 | 1.77 | 1.77 | 1.77 |
| 5,730.000 | 1.76 | 1.76 | 1.75 | 1.75 | 1.75 |
| 5,745.000 | 1.74 | 1.74 | 1.73 | 1.73 | 1.72 |
| 5,760.000 | 1.72 | 1.72 | 1.71 | 1.71 | 1.70 |
| 5,775.000 | 1.70 | 1.69 | 1.69 | 1.69 | 1.68 |
| 5,790.000 | 1.68 | 1.67 | 1.67 | 1.67 | 1.66 |
| 5,805.000 | 1.66 | 1.65 | 1.65 | 1.64 | 1.64 |
| 5,820.000 | 1.64 | 1.63 | 1.63 | 1.62 | 1.62 |
| 5,835.000 | 1.62 | 1.61 | 1.61 | 1.60 | 1.60 |
| 5,850.000 | 1.59 | 1.59 | 1.59 | 1.58 | 1.58 |
| 5,865.000 | 1.57 | 1.57 | 1.57 | 1.56 | 1.56 |
| 5,880.000 | 1.55 | 1.55 | 1.54 | 1.54 | 1.54 |
| 5,895.000 | 1.53 | 1.53 | 1.52 | 1.52 | 1.51 |
| 5,910.000 | 1.51 | 1.51 | 1.50 | 1.50 | 1.49 |
| 5,925.000 | 1.49 | 1.49 | 1.48 | 1.48 | 1.47 |
| 5,940.000 | 1.47 | 1.46 | 1.46 | 1.46 | 1.45 |
| 5,955.000 | 1.45 | 1.44 | 1.44 | 1.44 | 1.43 |
| 5,970.000 | 1.43 | 1.42 | 1.42 | 1.41 | 1.41 |
| 5,985.000 | 1.41 | 1.40 | 1.40 | 1.39 | 1.39 |
| 6,000.000 | 1.39 | 1.38 | 1.38 | 1.37 | 1.37 |
| 6,015.000 | 1.36 | 1.36 | 1.36 | 1.35 | 1.35 |
| 6,030.000 | 1.34 | 1.34 | 1.33 | 1.33 | 1.33 |
| 6,045.000 | 1.32 | 1.32 | 1.31 | 1.31 | 1.31 |
| 6,060.000 | 1.30 | 1.30 | 1.29 | 1.29 | 1.28 |
| 6,075.000 | 1.28 | 1.28 | 1.27 | 1.27 | 1.26 |
| 6,090.000 | 1.26 | 1.26 | 1.25 | 1.25 | 1.24 |
| 6,105.000 | 1.24 | 1.23 | 1.23 | 1.23 | 1.22 |
| 6,120.000 | 1.22 | 1.21 | 1.21 | 1.21 | 1.20 |
| 6,135.000 | 1.20 | 1.19 | 1.19 | 1.18 | 1.18 |
| 6,150.000 | 1.18 | 1.17 | 1.17 | 1.16 | 1.16 |
| 6,165.000 | 1.15 | 1.15 | 1.15 | 1.14 | 1.14 |
| 6,180.000 | 1.13 | 1.13 | 1.13 | 1.12 | 1.12 |
| 6,195.000 | 1.11 | 1.11 | 1.10 | 1.10 | 1.10 |
| 6,210.000 | 1.09 | 1.09 | 1.08 | 1.08 | 1.08 |
| 6,225.000 | 1.07 | 1.07 | 1.06 | 1.06 | 1.05 |
| 6,240.000 | 1.05 | 1.05 | 1.04 | 1.04 | 1.03 |
| 6,255.000 | 1.03 | 1.03 | 1.02 | 1.02 | 1.01 |
| 6,270.000 | 1.01 | 1.00 | 1.00 | 0.98 | 0.95 |
| 6,285.000 | 0.93 | 0.91 | 0.89 | 0.86 | 0.84 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 6,300.000 | 0.82 | 0.80 | 0.78 | 0.75 | 0.73 |
| 6,315.000 | 0.71 | 0.69 | 0.66 | 0.64 | 0.62 |
| 6,330.000 | 0.60 | 0.57 | 0.55 | 0.53 | 0.51 |
| 6,345.000 | 0.48 | 0.46 | 0.44 | 0.42 | 0.41 |
| 6,360.000 | 0.39 | 0.37 | 0.36 | 0.35 | 0.33 |
| 6,375.000 | 0.32 | 0.31 | 0.30 | 0.29 | 0.28 |
| 6,390.000 | 0.27 | 0.26 | 0.25 | 0.24 | 0.24 |
| 6,405.000 | 0.23 | 0.22 | 0.22 | 0.21 | 0.20 |
| 6,420.000 | 0.20 | 0.19 | 0.19 | 0.19 | 0.18 |
| 6,435.000 | 0.18 | 0.17 | 0.17 | 0.17 | 0.16 |
| 6,450.000 | 0.16 | 0.16 | 0.16 | 0.15 | 0.15 |
| 6,465.000 | 0.15 | 0.15 | 0.14 | 0.14 | 0.14 |
| 6,480.000 | 0.14 | 0.14 | 0.14 | 0.14 | 0.13 |
| 6,495.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| 6,510.000 | 0.13 | 0.13 | 0.13 | 0.13 | 0.12 |
| 6,525.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 6,540.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 6,555.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 6,570.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 6,585.000 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| 6,600.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,615.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,630.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,645.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,660.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,675.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,690.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,705.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,720.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,735.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,750.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,765.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,780.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,795.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,810.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,825.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,840.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,855.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,870.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,885.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,900.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,915.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 6,930.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,945.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,960.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,975.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 6,990.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,005.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,020.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,035.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,050.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,065.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,080.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,095.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,110.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,125.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,140.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,155.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,170.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,185.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,200.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,215.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,230.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,245.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,260.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,275.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,290.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,305.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,320.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,335.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,350.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,365.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,380.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,395.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,410.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,425.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,440.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,455.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,470.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,485.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,500.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,515.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,530.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,545.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 7,560.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,575.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,590.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,605.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,620.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,635.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,650.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,665.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,680.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,695.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,710.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,725.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,740.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,755.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,770.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,785.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,800.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,815.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,830.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,845.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,860.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,875.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,890.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,905.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,920.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,935.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,950.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,965.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,980.000 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 7,995.000 | 0.11 | 0.11 | (N/A) | (N/A) | (N/A) |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 0.000 | 384.40 | 384.42 | 384.47 | 384.52 | 384.58 |
| 15.000 | 384.63 | 384.66 | 384.68 | 384.68 | 384.68 |
| 30.000 | 384.68 | 384.68 | 384.68 | 384.68 | 384.68 |
| 45.000 | 384.68 | 384.68 | 384.69 | 384.69 | 384.69 |
| 60.000 | 384.69 | 384.69 | 384.69 | 384.69 | 384.69 |
| 75.000 | 384.69 | 384.69 | 384.69 | 384.69 | 384.69 |
| 90.000 | 384.69 | 384.69 | 384.69 | 384.69 | 384.69 |
| 105.000 | 384.69 | 384.69 | 384.69 | 384.69 | 384.69 |
| 120.000 | 384.69 | 384.69 | 384.69 | 384.69 | 384.69 |
| 135.000 | 384.69 | 384.69 | 384.69 | 384.69 | 384.69 |
| 150.000 | 384.69 | 384.69 | 384.69 | 384.69 | 384.69 |
| 165.000 | 384.69 | 384.70 | 384.70 | 384.70 | 384.70 |
| 180.000 | 384.70 | 384.70 | 384.70 | 384.70 | 384.70 |
| 195.000 | 384.70 | 384.70 | 384.70 | 384.70 | 384.70 |
| 210.000 | 384.70 | 384.70 | 384.70 | 384.70 | 384.70 |
| 225.000 | 384.70 | 384.70 | 384.70 | 384.70 | 384.70 |
| 240.000 | 384.70 | 384.70 | 384.70 | 384.70 | 384.70 |
| 255.000 | 384.70 | 384.70 | 384.70 | 384.70 | 384.70 |
| 270.000 | 384.70 | 384.71 | 384.71 | 384.71 | 384.71 |
| 285.000 | 384.71 | 384.71 | 384.71 | 384.71 | 384.71 |
| 300.000 | 384.71 | 384.71 | 384.71 | 384.71 | 384.71 |
| 315.000 | 384.71 | 384.71 | 384.71 | 384.71 | 384.71 |
| 330.000 | 384.71 | 384.71 | 384.71 | 384.71 | 384.71 |
| 345.000 | 384.71 | 384.71 | 384.71 | 384.71 | 384.71 |
| 360.000 | 384.71 | 384.72 | 384.72 | 384.72 | 384.72 |
| 375.000 | 384.72 | 384.72 | 384.72 | 384.72 | 384.72 |
| 390.000 | 384.72 | 384.72 | 384.72 | 384.72 | 384.72 |
| 405.000 | 384.72 | 384.72 | 384.72 | 384.72 | 384.72 |
| 420.000 | 384.72 | 384.72 | 384.72 | 384.74 | 384.77 |
| 435.000 | 384.80 | 384.83 | 384.86 | 384.88 | 384.91 |
| 450.000 | 384.93 | 384.95 | 384.97 | 384.99 | 385.01 |
| 465.000 | 385.03 | 385.05 | 385.06 | 385.08 | 385.09 |
| 480.000 | 385.11 | 385.12 | 385.13 | 385.15 | 385.16 |
| 495.000 | 385.17 | 385.18 | 385.19 | 385.20 | 385.21 |
| 510.000 | 385.22 | 385.23 | 385.23 | 385.24 | 385.25 |
| 525.000 | 385.26 | 385.27 | 385.27 | 385.28 | 385.29 |
| 540.000 | 385.29 | 385.30 | 385.30 | 385.31 | 385.32 |
| 555.000 | 385.32 | 385.33 | 385.33 | 385.34 | 385.34 |
| 570.000 | 385.35 | 385.35 | 385.36 | 385.36 | 385.36 |
| 585.000 | 385.37 | 385.37 | 385.38 | 385.38 | 385.39 |
| 600.000 | 385.39 | 385.39 | 385.40 | 385.40 | 385.40 |
| 615.000 | 385.41 | 385.41 | 385.41 | 385.42 | 385.42 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 630.000 | 385.42 | 385.43 | 385.43 | 385.43 | 385.44 |
| 645.000 | 385.44 | 385.44 | 385.45 | 385.45 | 385.45 |
| 660.000 | 385.46 | 385.46 | 385.46 | 385.47 | 385.47 |
| 675.000 | 385.47 | 385.48 | 385.48 | 385.48 | 385.48 |
| 690.000 | 385.49 | 385.49 | 385.49 | 385.50 | 385.50 |
| 705.000 | 385.50 | 385.51 | 385.51 | 385.51 | 385.52 |
| 720.000 | 385.52 | 385.52 | 385.52 | 385.53 | 385.53 |
| 735.000 | 385.53 | 385.54 | 385.54 | 385.54 | 385.55 |
| 750.000 | 385.55 | 385.55 | 385.56 | 385.56 | 385.56 |
| 765.000 | 385.57 | 385.57 | 385.57 | 385.58 | 385.58 |
| 780.000 | 385.58 | 385.59 | 385.59 | 385.60 | 385.60 |
| 795.000 | 385.60 | 385.61 | 385.61 | 385.61 | 385.61 |
| 810.000 | 385.61 | 385.61 | 385.61 | 385.61 | 385.62 |
| 825.000 | 385.62 | 385.62 | 385.62 | 385.62 | 385.62 |
| 840.000 | 385.62 | 385.62 | 385.62 | 385.62 | 385.62 |
| 855.000 | 385.63 | 385.63 | 385.63 | 385.63 | 385.63 |
| 870.000 | 385.63 | 385.63 | 385.63 | 385.63 | 385.63 |
| 885.000 | 385.64 | 385.64 | 385.64 | 385.64 | 385.64 |
| 900.000 | 385.64 | 385.64 | 385.64 | 385.65 | 385.65 |
| 915.000 | 385.65 | 385.65 | 385.65 | 385.65 | 385.65 |
| 930.000 | 385.65 | 385.66 | 385.66 | 385.66 | 385.66 |
| 945.000 | 385.66 | 385.66 | 385.66 | 385.67 | 385.67 |
| 960.000 | 385.67 | 385.67 | 385.67 | 385.67 | 385.68 |
| 975.000 | 385.68 | 385.68 | 385.68 | 385.68 | 385.69 |
| 990.000 | 385.69 | 385.69 | 385.69 | 385.69 | 385.70 |
| 1,005.000 | 385.70 | 385.70 | 385.70 | 385.71 | 385.71 |
| 1,020.000 | 385.71 | 385.72 | 385.72 | 385.72 | 385.72 |
| 1,035.000 | 385.73 | 385.73 | 385.73 | 385.74 | 385.74 |
| 1,050.000 | 385.75 | 385.75 | 385.75 | 385.76 | 385.76 |
| 1,065.000 | 385.77 | 385.77 | 385.78 | 385.78 | 385.79 |
| 1,080.000 | 385.80 | 385.80 | 385.81 | 385.82 | 385.82 |
| 1,095.000 | 385.83 | 385.84 | 385.85 | 385.86 | 385.87 |
| 1,110.000 | 385.88 | 385.90 | 385.91 | 385.93 | 385.94 |
| 1,125.000 | 385.96 | 385.98 | 386.01 | 386.04 | 386.07 |
| 1,140.000 | 386.12 | 386.17 | 386.24 | 386.35 | 386.63 |
| 1,155.000 | 386.90 | 386.94 | 386.90 | 386.80 | 386.64 |
| 1,170.000 | 386.26 | 385.95 | 385.89 | 385.84 | 385.81 |
| 1,185.000 | 385.78 | 385.76 | 385.74 | 385.73 | 385.72 |
| 1,200.000 | 385.70 | 385.69 | 385.69 | 385.68 | 385.67 |
| 1,215.000 | 385.66 | 385.66 | 385.65 | 385.65 | 385.64 |
| 1,230.000 | 385.64 | 385.63 | 385.63 | 385.63 | 385.62 |
| 1,245.000 | 385.62 | 385.61 | 385.61 | 385.61 | 385.61 |

## Time vs. Elevation (ft)

**Output Time increment = 3.000 min**
**Time on left represents time for first value in each row.**

| Time (min) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) | Elevation (ft) |
|---|---|---|---|---|---|
| 1,260.000 | 385.60 | 385.60 | 385.60 | 385.60 | 385.59 |
| 1,275.000 | 385.59 | 385.59 | 385.59 | 385.59 | 385.58 |
| 1,290.000 | 385.58 | 385.58 | 385.58 | 385.58 | 385.58 |
| 1,305.000 | 385.57 | 385.57 | 385.57 | 385.57 | 385.57 |
| 1,320.000 | 385.57 | 385.57 | 385.56 | 385.56 | 385.56 |
| 1,335.000 | 385.56 | 385.56 | 385.56 | 385.56 | 385.56 |
| 1,350.000 | 385.56 | 385.56 | 385.55 | 385.55 | 385.55 |
| 1,365.000 | 385.55 | 385.55 | 385.55 | 385.55 | 385.55 |
| 1,380.000 | 385.55 | 385.55 | 385.55 | 385.55 | 385.54 |
| 1,395.000 | 385.54 | 385.54 | 385.54 | 385.54 | 385.54 |
| 1,410.000 | 385.54 | 385.54 | 385.54 | 385.54 | 385.54 |
| 1,425.000 | 385.54 | 385.54 | 385.54 | 385.54 | 385.54 |
| 1,440.000 | 385.53 | 385.52 | 385.51 | 385.49 | 385.47 |
| 1,455.000 | 385.45 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,470.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,485.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,500.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,515.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,530.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,545.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,560.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,575.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,590.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,605.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,620.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,635.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,650.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,665.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,680.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,695.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,710.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,725.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,740.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,755.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,770.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,785.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,800.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,815.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,830.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,845.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,860.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |
| 1,875.000 | 385.43 | 385.43 | 385.43 | 385.43 | 385.43 |

# Appendix E: Hydraulics

- Prorated Flow Rates Table
- Storm Drain Hydraulics
- Rip Rap Apron Analysis
- Concrete Channel A1 Analysis
- Earthen Channel A2 Analysis

# 50-Year Proration Table

| Proration of Flows | | | | | |
|---|---|---|---|---|---|
| Study Area ID | Sub Area | Acreage | Study Area Total Acreage | Flow Rate CFS 50-Yr Storm | $Q_{50\text{-}yr\text{-}SubArea}$ |
| A1 | A1 | 8.74 | 28.97 | 70.1 | 21.15 |
| | A2 | 4.62 | | | 11.18 |
| | A2.1 | 1.14 | | | 2.76 |
| | A2.5 | 6.11 | | | 14.78 |
| | A3 | 2.67 | | | 6.46 |
| | A4 | 2.76 | | | 6.68 |
| | A5 | 2.93 | | | 7.09 |
| A3 | Basin Area | 6.59 | 6.59 | 24.06 | 24.06 |
| A2.1 | A6 | 4.14 | 27.57 | 58.25 | 8.75 |
| | A7 | 3.27 | | | 6.91 |
| | A8 | 10.36 | | | 21.89 |
| | A9 | 1.93 | | | 4.08 |
| | A10 | 2.59 | | | 5.47 |
| | A11 | 1.77 | | | 3.74 |
| | A12 | 3.51 | | | 7.42 |
| A2.2 | A2.2 (ALL) | 3.78 | 3.78 | 12.67 | 12.67 |
| Onsite Total: | | 66.91 | 66.91 | 165.08 | 165.08 |
| A4 | A4.1 | 6.91 | 13.61 | 27.96 | 14.20 |
| | A4.2 | 6.7 | | | 13.76 |
| Total Project: | | 80.52 | 80.52 | 193.04 | 193.04 |

| Storm Drain Hydruaulics | | | | | | | | | | Tributary Flow |
|---|---|---|---|---|---|---|---|---|---|---|
| Storm Drain ID | Diameter, D (in) | Depth, d (In) | Mannings n | Slope, S (ft/ft) | Area,ft$^2$ | Wetted Perimeter, ft | Hydraulic Radius, ft | velocity ft/s | Capacity, cfs | Q50 CFS |
| Line A | 24 | 24 | 0.012 | 2.0% | 3.14 | 6.28 | 0.50 | 11.03 | 34.66 | 35.09 |
| Line A | 30 | 30 | 0.012 | 2.0% | 4.91 | 7.85 | 0.63 | 12.80 | 62.84 | 63.65 |
| Line A | 36 | 36 | 0.012 | 2.0% | 7.07 | 9.42 | 0.75 | 14.46 | 102.19 | 70.33 |
| Line A | 36 | 36 | 0.012 | 2.0% | 7.07 | 9.42 | 0.75 | 14.46 | 102.19 | 77.42 |
| Line B | 18 | 18 | 0.012 | 0.5% | 1.77 | 4.71 | 0.38 | 4.55 | 8.05 | 8.75 |
| Line B | 24 | 24 | 0.012 | 0.5% | 3.14 | 6.28 | 0.50 | 5.52 | 17.33 | 14.22 |
| Line B | 30 | 30 | 0.012 | 0.5% | 4.91 | 7.85 | 0.63 | 6.40 | 31.42 | 21.13 |
| Line B | 36 | 36 | 0.012 | 0.5% | 7.07 | 9.42 | 0.75 | 7.23 | 51.09 | 43.02 |
| Line C | 24 | 24 | 0.012 | 0.5% | 3.14 | 6.28 | 0.50 | 5.52 | 17.33 | 12.67 |
| Line D | 18 | 18 | 0.012 | n/a | Line D is force main. Design by others | | | | | 1.99 |
| Line E | 36x36 Box | 36 | 0.014 | 0.3% | Refer to Flow Master Calculation | | | | | 45.19 |

# Line E Storm Drain Capacity

| Project Description | |
|---|---|
| Friction Method | Manning Formula |
| Solve For | Full Flow Capacity |

| Input Data | |
|---|---|
| Roughness Coefficient | 0.014 |
| Channel Slope | 0.003 ft/ft |
| Normal Depth | 36.0 in |
| Height | 3.0 ft |
| Bottom Width | 3.00 ft |
| Discharge | 45.30 cfs |

| Results | |
|---|---|
| Flow Area | 9.0 ft² |
| Wetted Perimeter | 12.0 ft |
| Hydraulic Radius | 9.0 in |
| Top Width | 3.00 ft |
| Critical Depth | 23.0 in |
| Percent Full | 100.0 % |
| Critical Slope | 0.007 ft/ft |
| Velocity | 5.03 ft/s |
| Velocity Head | 0.39 ft |
| Specific Energy | 3.39 ft |
| Froude Number | 0.512 |
| Discharge Full | 45.30 cfs |
| Slope Full | 0.003 ft/ft |
| Flow Type | Subcritical |

| GVF Input Data | |
|---|---|
| Downstream Depth | 0.0 in |
| Length | 0.0 ft |
| Number Of Steps | 0 |

| GVF Output Data | |
|---|---|
| Upstream Depth | 0.0 in |
| Profile Description | N/A |
| Profile Headloss | 0.00 ft |
| Average End Depth Over Rise | 0.0 % |
| Normal Depth Over Rise | 0.0 % |
| Downstream Velocity | (N/A) ft/s |
| Upstream Velocity | (N/A) ft/s |
| Normal Depth | 36.0 in |
| Critical Depth | 23.0 in |
| Channel Slope | 0.003 ft/ft |
| Critical Slope | 0.007 ft/ft |

**Rip Rap Apron Analysis for Line A**

| | |
|---|---|
| Equivalent Pipe Diameter (In): | 36.00 |
| Q (Cfs) | 70.1 |
| Outlet Velocity (Fps) | 14.46 |

$$\frac{L_{sp}}{D_0} = 1.7 \times \frac{Q}{D_0^{5/2}} + 8$$

Lsp/D0: 15.64

**Apron Length**

Lsp: 46.93

Use Lsp= 46.9 with a flare of 1:2

**Upstream and Downstream width of Apron**

Upstream Width = 3*D(ft) = 9-ft

Downstream Wdith = (1/2)*Lsp+3*D= 32.5 Ft

Rock size will be determind during final engineering, where an HGL analysis will be conducted and final velocity of the storm drain at the outlet will be known.

# Conc. Trap Channel A1

| Project Description | |
|---|---|
| Friction Method | Manning Formula |
| Solve For | Normal Depth |

| Input Data | |
|---|---|
| Roughness Coefficient | 0.013 |
| Channel Slope | 0.005 ft/ft |
| Left Side Slope | 1.000 H:V |
| Right Side Slope | 1.000 H:V |
| Discharge | 10.78 cfs |

| Results | |
|---|---|
| Normal Depth | 17.3 in |
| Flow Area | 2.1 ft² |
| Wetted Perimeter | 4.1 ft |
| Hydraulic Radius | 6.1 in |
| Top Width | 2.89 ft |
| Critical Depth | 17.8 in |
| Critical Slope | 0.004 ft/ft |
| Velocity | 5.16 ft/s |
| Velocity Head | 0.41 ft |
| Specific Energy | 1.86 ft |
| Froude Number | 1.071 |
| Flow Type | Supercritical |

| GVF Input Data | |
|---|---|
| Downstream Depth | 0.0 in |
| Length | 0.0 ft |
| Number Of Steps | 0 |

| GVF Output Data | |
|---|---|
| Upstream Depth | 0.0 in |
| Profile Description | N/A |
| Profile Headloss | 0.00 ft |
| Downstream Velocity | Infinity ft/s |
| Upstream Velocity | Infinity ft/s |
| Normal Depth | 17.3 in |
| Critical Depth | 17.8 in |
| Channel Slope | 0.005 ft/ft |
| Critical Slope | 0.004 ft/ft |

# Earthened. Trap Channel A2

| Project Description | |
|---|---|
| Friction Method | Manning Formula |
| Solve For | Normal Depth |

| Input Data | |
|---|---|
| Roughness Coefficient | 0.030 |
| Channel Slope | 0.005 ft/ft |
| Left Side Slope | 1.000 H:V |
| Right Side Slope | 1.000 H:V |
| Discharge | 4.72 cfs |

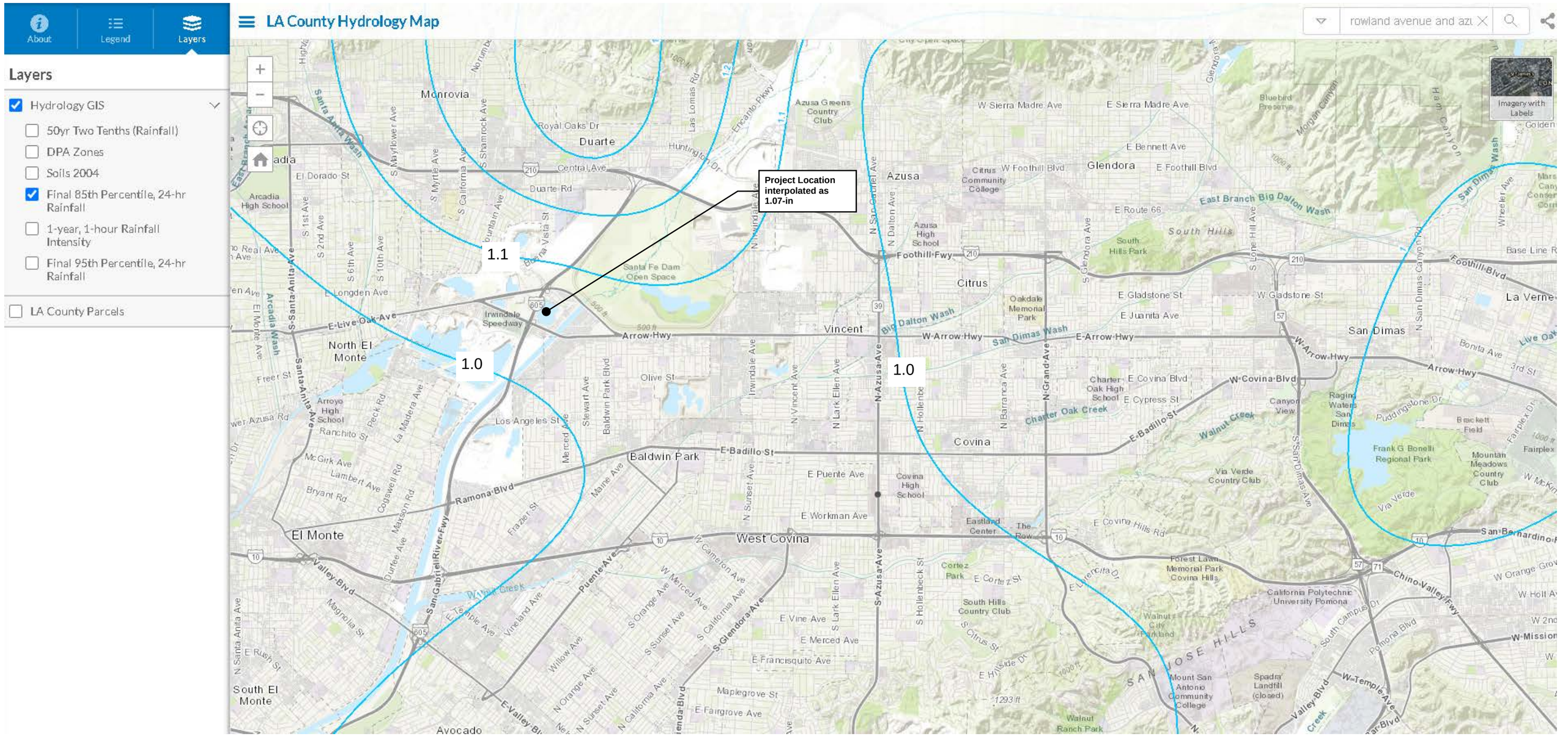
| Results | |
|---|---|
| Normal Depth | 17.4 in |
| Flow Area | 2.1 ft² |
| Wetted Perimeter | 4.1 ft |
| Hydraulic Radius | 6.2 in |
| Top Width | 2.90 ft |
| Critical Depth | 12.8 in |
| Critical Slope | 0.026 ft/ft |
| Velocity | 2.24 ft/s |
| Velocity Head | 0.08 ft |
| Specific Energy | 1.53 ft |
| Froude Number | 0.465 |
| Flow Type | Subcritical |

| GVF Input Data | |
|---|---|
| Downstream Depth | 0.0 in |
| Length | 0.0 ft |
| Number Of Steps | 0 |

| GVF Output Data | |
|---|---|
| Upstream Depth | 0.0 in |
| Profile Description | N/A |
| Profile Headloss | 0.00 ft |
| Downstream Velocity | 0.00 ft/s |
| Upstream Velocity | 0.00 ft/s |
| Normal Depth | 17.4 in |
| Critical Depth | 12.8 in |
| Channel Slope | 0.005 ft/ft |
| Critical Slope | 0.026 ft/ft |

# Appendix F: References

- 85th Percentile 24-Hour Rainfall (For Reference Only)
- 50 Year 24-Hour Isohyetal
- Soil Classification from GIS
- Los Angeles County Rip Rap Design Guidelines
- Information Request Summary
- Specific Plan Excerpt, Page 19 (Previous "Conceptual Storm Water Management Plan Exhibit")
- Specific Plan Excerpt, Page 29 (Option 2 BESS)


About
Legend
Layers
LA County Hydrology Map
rowland avenue and azu
Layers
Hydrology GIS
50yr Two Tenths (Rainfall)
DPA Zones
Soils 2004
Final 85th Percentile, 24-hr Rainfall
1-year, 1-hour Rainfall Intensity
Final 95th Percentile, 24-hr Rainfall
LA County Parcels
Project Location interpolated as 1.07-in
1.1
1.0
1.0
Imagery with Labels
Monrovia
Duarte
Azusa
Glendora
Citrus
Vincent
San Dimas
La Verne
North El Monte
Irwindale Speedway
Santa Fe Dam Open Space
Arcadia High School
Azusa Greens Country Club
Citrus Community College
Azusa High School
South Hills Park
Oakdale Memorial Park
Charter Oak High School
Bluebird Preserve
Morgan Canyon
Ham Canyon
Golden
Wheeler Ave
Base Line R
Bonita Ave
3rd St
Live Oak
Puddingstone Dr
Brackett Field
Fairplex
Raging Waters San Dimas
Canyon View
Via Verde Country Club
Frank G Bonelli Regional Park
Mountain Meadows Country Club
Via Verde
Covina
West Covina
El Monte
South El Monte
Baldwin Park
Avocado
Covina High School
Eastland Center
The Row
Cortez Park
South Hills Country Club
Walnut City Parkland
Forest Lawn Memorial Park Covina Hills
California Polytechnic University Pomona
Mount San Antonio Community College
Spadra Landfill (closed)
Walnut Ranch Park
Frank G Bonelli Regional Park
Mountain Meadows Country Club
Via Verde
Via Verde Country Club
Creek
Arrow Hwy
Foothill Fwy
Foothill Blvd
Ramona Blvd
Valley Blvd
Puente Ave
Azusa Ave
Glendora Ave
Grand Ave
Citrus St
Gladstone St
Covina Blvd
Badillo St
Chino Valley Fwy
Big Dalton Wash
San Dimas Wash
East Branch Big Dalton Wash
Charter Oak Creek
Walnut Creek
South Hills
SAN JOSE HILLS
Santa Anita Wash
Arcadia Wash
San Gabriel River Fwy
Santa Fe Dam Open Space
Irwindale Speedway
Arroyo High School
Citrus Community College
Azusa High School
South Hills Park
Oakdale Memorial Park
Charter Oak High School
Bluebird Preserve
Morgan Canyon
Ham Canyon
Golden
Wheeler Ave
Base Line R
Bonita Ave
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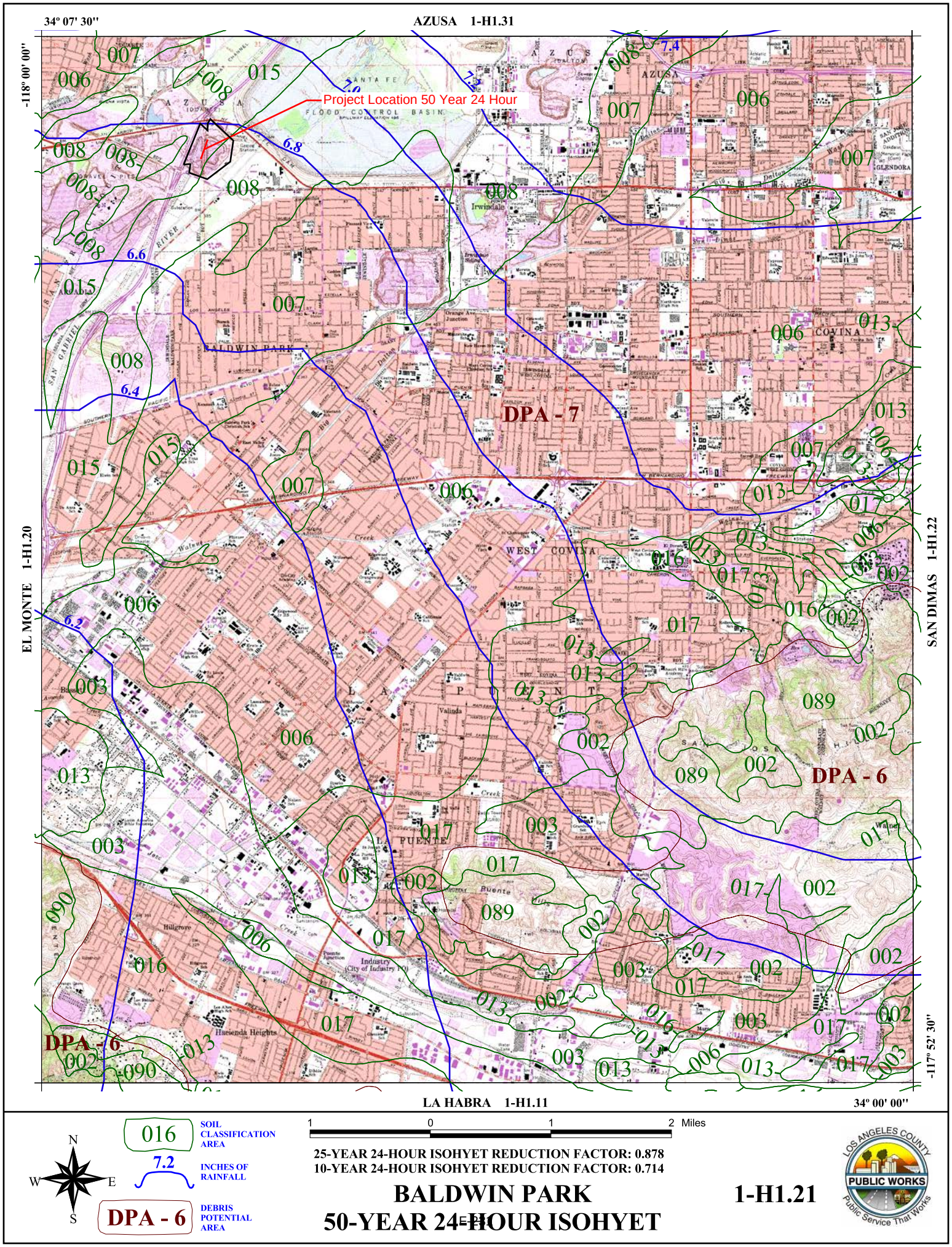
Brackett Field
Fairplex
Raging Waters San Dimas
Canyon View
Via Verde Country Club
Frank G Bonelli Regional Park
Mountain Meadows Country Club
Via Verde
Creek


34° 07' 30"
AZUSA 1-H1.31
-118° 00' 00"
Project Location 50 Year 24 Hour
FLOOD CONTROL BASIN
AZUSA
Irwindale
BALDWIN PARK
COVINA
WEST COVINA
LA PUENTE
Hacienda Heights
Industry
(City of Industry P.O.)
DPA - 7
DPA - 6
DPA - 6
EL MONTE 1-H1.20
SAN DIMAS 1-H1.22
-117° 52' 30"
LA HABRA 1-H1.11
34° 00' 00"
016
SOIL CLASSIFICATION AREA
7.2
INCHES OF RAINFALL
DPA - 6
DEBRIS POTENTIAL AREA
N
W
E
S
1 0 1 2 Miles
25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714
BALDWIN PARK
50-YEAR 24-HOUR ISOHYET
1-H1.21
LOS ANGELES COUNTY
PUBLIC WORKS
Public Service That Works

COUNTY OF LOS ANGELES
OPEN DATA

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# LA County Soil Types

Based on LA County Soil Types

This layer was created to represent soil types in Los Angeles County. Polygons were derived from scanned soil maps. Attributes include ▸

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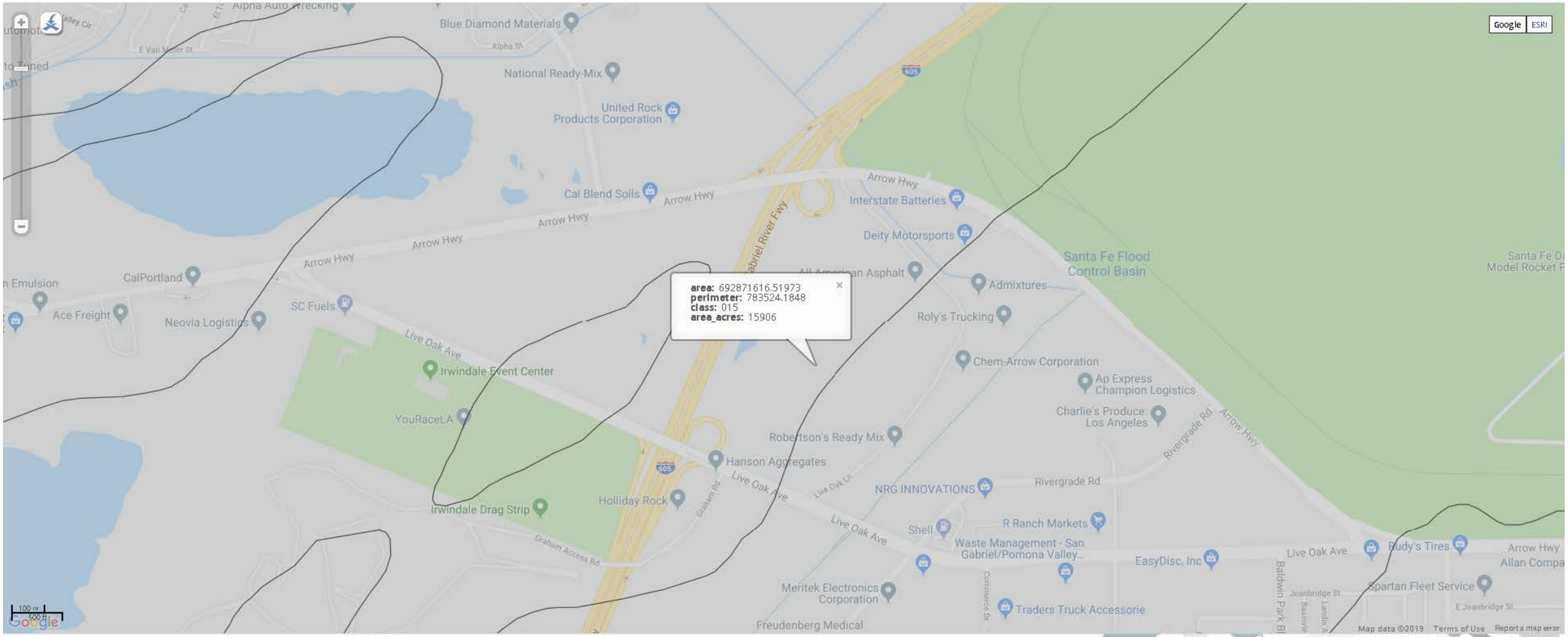


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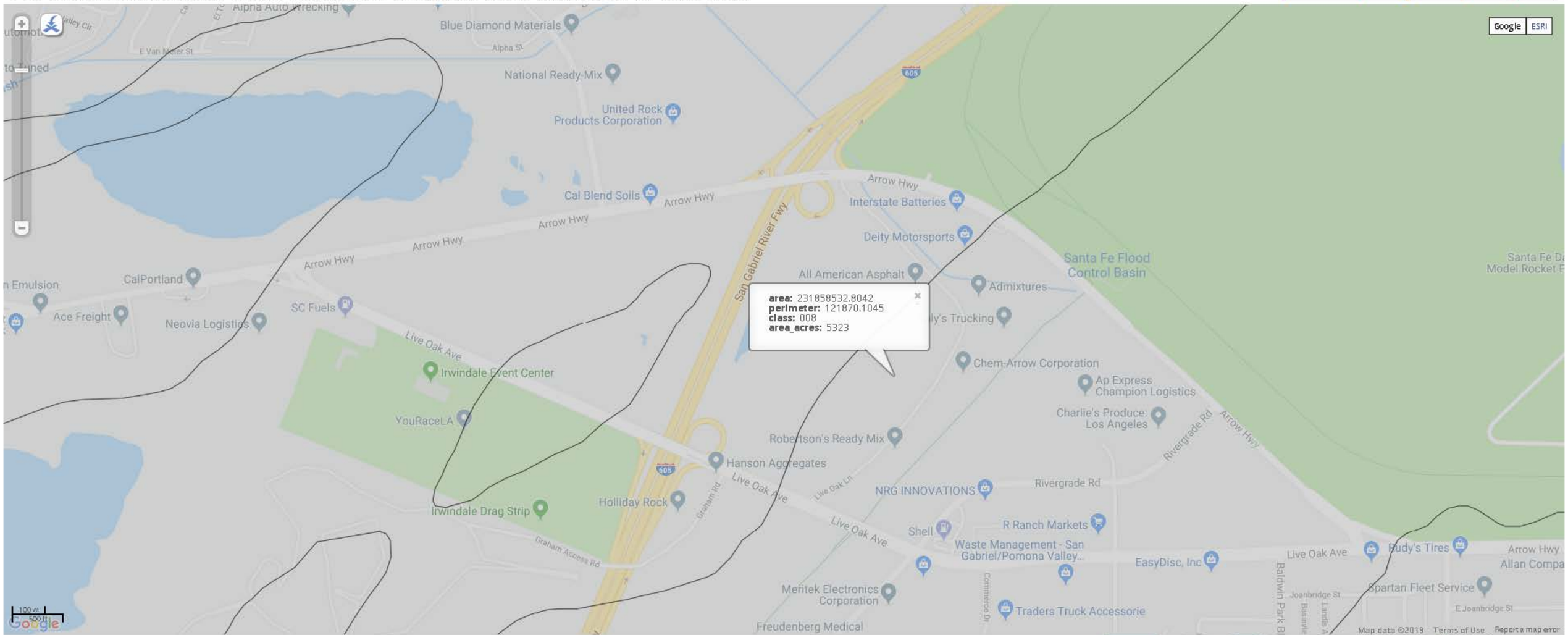


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## 2.3 RIP RAP AND APRONS

### 2.31 Rock Rip Rap

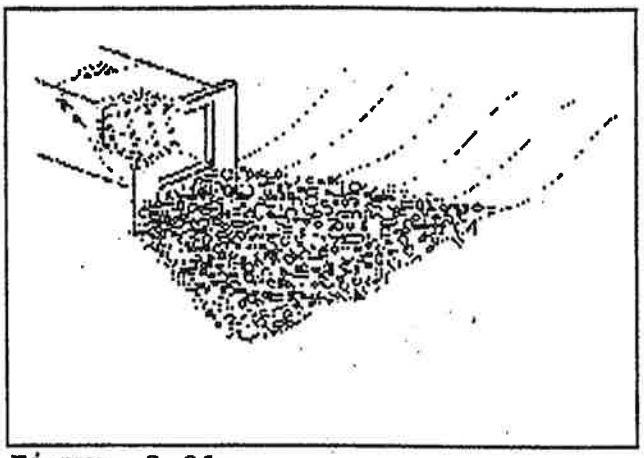


Figure 2.31a

In situations where velocities discharging from a drain are moderate (<15 fps), rock rip rap may be the most economical type of dissipator to construct. Aesthetically, the rock may blend into the natural environment. However, in some areas, it may be more of an eyesore than a formed structure that can be effectively screened with landscaping.

There are two possible approaches. One is a horizontal apron with sufficient length and width to allow the flows to disperse. The other alternative would be a preformed scour hole, lined with rock.

Preformed scour holes can effectively dissipate flow energy and reduce downstream erosion. However, uncontrolled scour holes can undermine the drain and result in subsequent structural failure. A scour hole is objectionable in most areas because it collects debris and presents a safety hazard. The ponded water also breeds insects without proper maintenance.

The criteria presented in this report will be for horizontal rock rip rap aprons, and it is recommended that they be used instead of a preformed scour hole. Energy dissipation may not be as effective, but there will not be the hazards discussed above.

*Sample Problem:*

*Given:*

*Storm drain discharging into a retention basin.*
*$D_o$= 36" RCP*
*Q = 60 cfs*
*$V_o$ = 8.5 fps*
*Design a rock rip-rap apron to reduce scour*

*Solution:*

*Using the empirical equation*

$$\frac{L_{sp}}{D_0} = 1.7 \times \frac{Q}{D_0^{5/2}} + 8$$

*Yields*

$$\frac{L_{sp}}{D_0} = 1.7 \times \frac{Q}{D_0^{5/2}} + 8 = 14.56$$

*Solving for apron length,*
*$L_{sp}$ = (3')(14.56) = 43.69'*

*Use $L_{SP}$ = **44'**, with a flare of **1:2***
*(transverse:long.)*

*Use an upstream width = $3D_0$ = **9'***

*Therefore, downstream width =*
*$\frac{1}{2}L_{SP} + 3D_0$ = **31'***

*Find stone sizing per Chart Q-10 in the Sedimentation Manual*
***$D_{50}$ = 11"***

## 2.32 Flared Apron with Sill

For drains with moderate flow rates and moderate velocities ( < 15 fps), a flared apron with an end sill can provide a simple and effective dissipator. The apron can be constructed of concrete or rock rip rap. The apron should have a width of at least 3 pipe diameters. The divergence angle should be at least 1:1.75 if an end sill is employed (See Fig. 2.32a), and at least 1:3 without. A small channel should be cut in the sill to accommodate low flows,

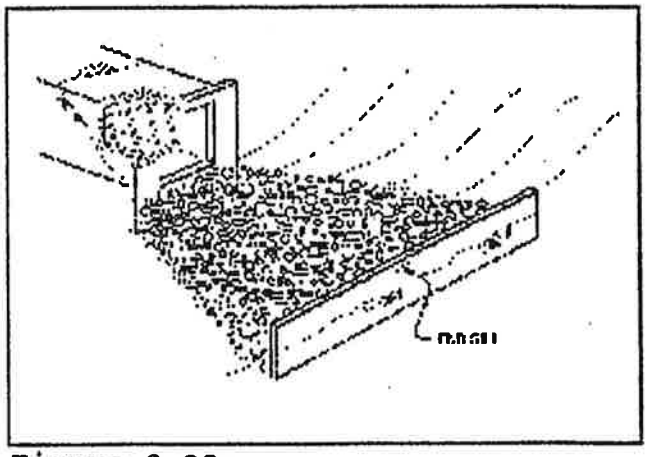
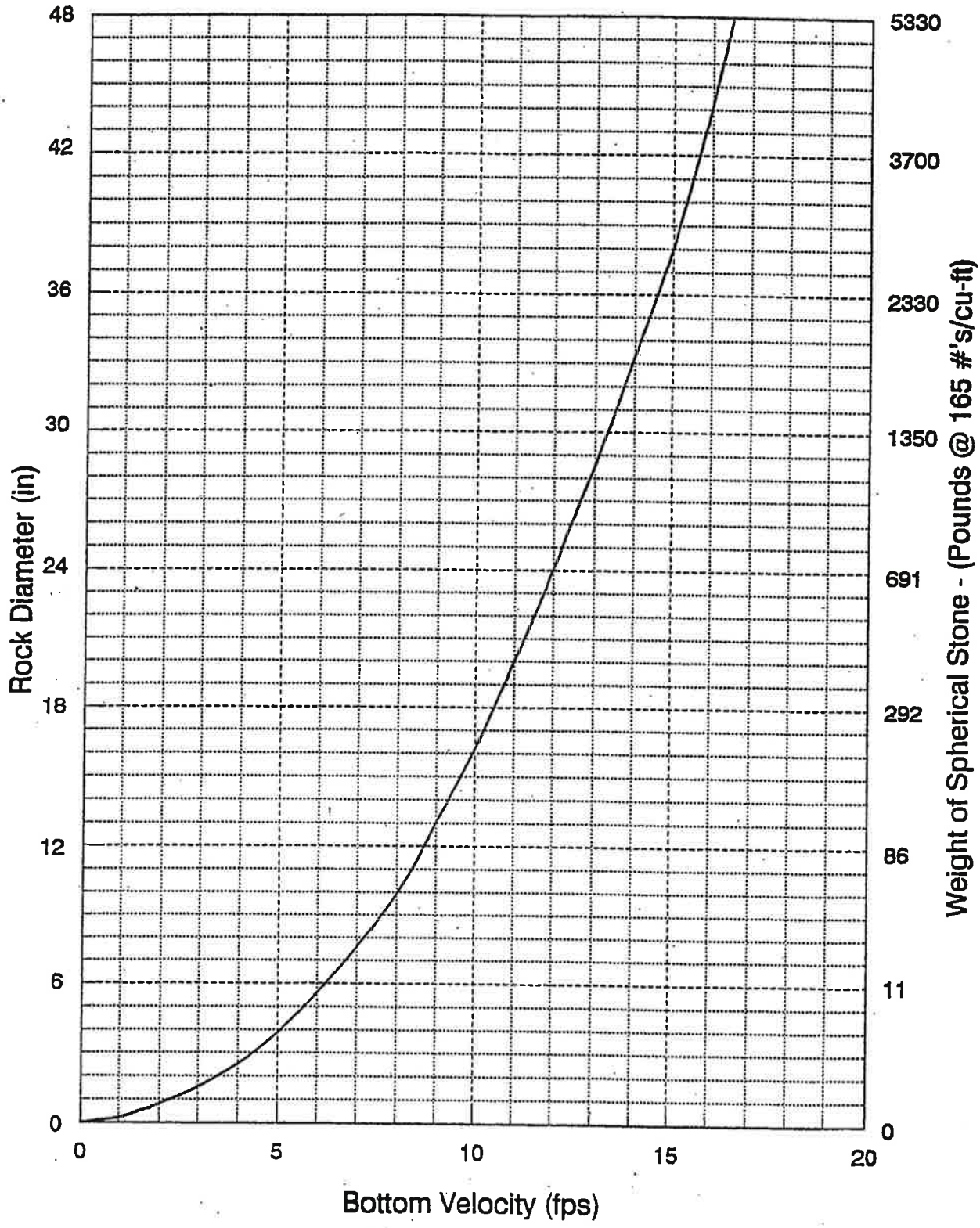


Figure 2.32a

# RIPRAP ROCK SIZE




For rock with specific gravity = 2.65

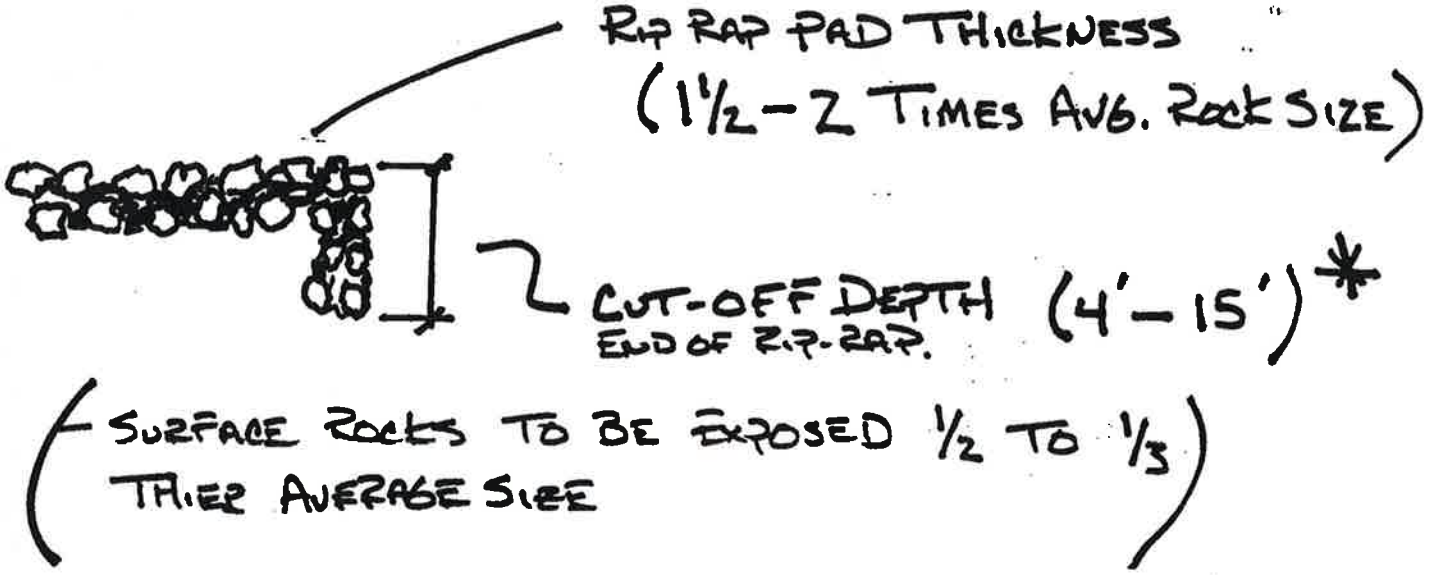
Source: Bureau of Reclamation

EXAMPLE OF THE WAY RIP-RAP SIZES SHOULD BE SHOWN ON P.D. PLANS:

| USE D50 50# RIP-RAP | |
|---|---|
| % LARGER THAN | SIZE |
| 0-5 | 100 # |
| 50-100 | 50 # |
| 95-100 | 25 # |

ROCK SIZE BASED ON OUTLET VELOCITY. (Pg. F-32 HYDRAULICS MANUAL)

Required gradations for D-50 classification can be found on page F-33 of L.A.C.F.C.D. Hydraulics Manual.




* REQUIRED CUT-OFF DEPTHS DEPENDS ON OUTLET VELOCITIES, SOIL TYPE, VEGETATION, FLOW RATE, CHANNEL TYPE & SLOPE.

— A GOOD ESTIMATE FOR CUT-OFF DEPTH IN ABSCENSE OF SOILS REPORT IS ± ½ DEPTH SHOWN FOR CURVED REACH ON PAGE F-31 HYDRAULICS MANUAL.

# LEVEE CRITERIA

## Cut-Off Depths

| Velocities | Straight Reaches | *Curved Reach |
|---|---|---|
| 0 - 6 f.p.s. | 6-ft. | 9-ft. |
| 6 - 10 f.p.s. | 8-ft. | 12-ft. |
| 10 - 15 f.p.s. | 10-ft. | 15-ft. |
| 15 - 18 f.p.s. | 12.5 ft. | 18-ft. |
| 18 - 20 f.p.s. | 14 ft. | 21-ft. |

*Check the cut off depth for curved reach on Chart F-06 on Page F-38 Use that depth if greater than given hereon.

## Material and Structural Requirements

Concrete Levees (1 1/2:1 max. side slope)

| Velocities | Levee Thickness - T | | Reinforcing |
|---|---|---|---|
| | Straight Reach | Curved Reach | |
| 0 - 10 f.p.s. | 6-inch | 8-inch | #4 @ 18" Bothways |
| 10 - 20 f.p.s. | 8-inch | 10-inch | #4 @ 18" Bothways |

Gunite Levees (1 1/2:1 max. side slopes)

| Velocities | Levee Thickness - T | | Reinforcing |
|---|---|---|---|
| | Straight Reach | Curved Reach | |
| 0 - 10 f.p.s. | 8-inch | 10-inch | #4 @ 18" Bothways |
| Gunite levees not permitted where velocities exceed 10 f.p.s. | | | |

Material and Structural Requirements

Rip-Rap Levees (2:1 max. side slopes)

(Ungrouted)

| Velocities | Rock Size (D50 Size) | Levee Thickness - T | | Filter Thickness |
|---|---|---|---|---|
| | | Straight Reach | Curved Reach | |
| 0 - 7 f.p.s. | 50 lb. (10") | 15-inch | 20-inch | 6-inch |
| 7 - 9 f.p.s. | 100 lb. (12") | 18-inch | 24-inch | 6-inch |
| 10 f.p.s. | 150 lb. (15") | 23-inch | 30-inch | 9-inch |
| 11 f.p.s. | 300 lb. (18") | 27-inch | 36-inch | 9-inch |
| 12 f.p.s. | 1/4-ton (21") | 32-inch | 42-inch | 9-inch |
| 13 f.p.s. | 1/2-ton (27") | 41-inch | 54-inch | 12-inch |
| 13 - 15 f.p.s. | 1-ton (34") | 51-inch | 68-inch | 12-inch |
| 16 - $17^5$ f.p.s. | 2-ton (43") | 65-inch | 86-inch | 12-inch |
| 18 - 20 f.p.s. | 4-ton (54") | 81-inch | 108-inch | 12-inch |
| (Grouted) Can be used only with special District approval | | | | |
| 16 - 20 f.p.s. | 1-ton (34") | 51-inch | 68-inch | 12-inch |

Gabion Levees (2:1 side slopes)

| Velocities | Levee Thickness (Straight or Curved Reach) | Rockfill | Wire Gage of Baskets | Apron Length |
|---|---|---|---|---|
| 0 - 7 f.p.s. | 12-inch Baskets | 4" - 8" | 12 ga. | 12 feet |
| 8 - 10 f.p.s. | 18-inch Baskets | 4" - 8" | 11 ga. | 18 feet |
| 11 - 15 f.p.s. | 18-inch Baskets | 4" - 8" | 11 ga. | 21 feet |

Gabion levees not permitted where velocities exceed 15 f.p.s.

# RIPRAP NOTES

1. ROCKS FOR GROUTED RIPRAP SHALL BE GOOD QUALITY BROKEN CONCRETE AND/OR RIVER RUN ROCK. THE SMALLEST DIMENSIONS SHALL EXCEED 6 INCHES AND THE LARGEST DIMENSION SHALL NOT EXCEED 24 INCHES. THE LARGEST DIMENSION SHALL NOT EXCEED 4 TIMES THE SMALLEST DIMENSION.
2. THERE SHALL BE A GROUT BED OF AT LEAST 2 INCHES BENEATH THE FIRST LAYER OF ROCK. ALL THE VOIDS BETWEEN THE ROCKS SHALL BE FILLED WITH GROUT. MAXIMUM SPACING BETWEEN ROCKS SHALL BE 2 INCHES.
3. SURFACE ROCKS SHALL BE IMBEDDED FROM 1/2 TO 2/3 OF THEIR MAXIMUM DIMENSION

**NOTE: CONCRETE MAY BE SUBSTITUTED FOR THE GROUT.**

Office Use Only
☐ Sent Initials: _____
☐ Fax ☐ Email ☐ Other: _____
Date: _____ Time: _____

# LOS ANGELES COUNTY
# DEPARTMENT OF PUBLIC WORKS
## DESIGN DIVISION – HYDRAULIC ANALYSIS UNIT

## INFORMATION REQUEST SUMMARY

**INFORMATION REQUESTED BY**

*Requester's Name: Oscar Rivera
Company: David Evans and Associates, Inc.
*Phone Number: 510-862-1907 Fax Number: _____
*Email: orivera@deainc.com

Method of Contact: ☐ Walk-in ☐ Phone ☐ Fax ☒ Email ☐ Prelim. Mtg. Date: 10/1/20

Intended Use: New Development Due Diligence

Proposed Project Type: Commercial/Warehouse Acreage Involved: 64

*Will information be used in any litigation? ☐ YES ☒ NO
Case Info. Name: _____ No: _____ Location: _____

**INFORMATION REQUESTED** (Attach Assessor Map)

LACFCD Facility: Name: San Gabriel River/Buena Vista Channel
Unit: _____ Line: _____ Station: _____
City: Irwindale
*Street/Cross-street: Live Oak Lane/Live Oak Avenue
*Thomas Guide: Page: _____ Grid: _____ ☐ Site Map/Plans Submitted
Info. Requested: Can the project make a connection to the Buena Vista Channel or San Gabriel River? What will be the allowable Q?

***Required Information. See Page 2 of 2 for Instructions.**

BELOW SECTION TO BE COMPLETED BY THE HYDRAULIC ANALYSIS UNIT

**INFORMATION PROVIDED:**

**REFERENCES SEARCHED:**

**COMMENTS, ETC:**
The project is tabled into the San Gabriel river with an allowable Q of 1CFS/AC.

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
DESIGN DIVISION
Hydraulic Analysis Unit
OFFICIAL RECORD DOCUMENT
Issued By: Calvin T
Date: 9/7/22
Public Service That Works

**INFORMATION PROVIDED BY:** Lynn Hassoun Sawas Date: 9.7.22

**INFORMATION REVIEWED BY:** Calvin Tran Date: 9.7.22

Print F-241 Save a Copy

# LOS ANGELES COUNTY
# DEPARTMENT OF PUBLIC WORKS
## DESIGN DIVISION – HYDRAULIC ANALYSIS UNIT

## INFORMATION REQUEST INSTRUCTIONS

1. Please fill out the Information Request Summary in Adobe Acrobat Reader. The fields marked with an asterisk are required. At the bottom are buttons that you may use to Save and/or Print the form. Please save the form and email it as an attachment with "Information Request" in the subject line along with any other attachments for allowable flow rate ("allowable q") requests as described in items 2 - 4 below. Address the email to designinfo@dpw.lacounty.gov. Please note that an incomplete form will cause a delay in processing.

2. Include the as-built drawing showing the proposed connection location and identify the station or catch basin at the proposed connection. Most as-built drawings can be obtained from the following website: http://dpw.lacounty.gov/des/plans/. Please make sure that you select the "Drainage" tab prior to searching. The Los Angeles County Storm Drain System website http://dpw.lacounty.gov/fcd/stormdrain/. is also a useful reference.

3. Shade the area with your proposed improvements on the assessor map, including any offsite areas draining into this area, and attach it with your email request. You can obtain the assessor map from http://assessor.lacounty.gov/. Any other kind of map (e.g. Google) is unacceptable.

4. In addition, submit a preliminary sketch or plan showing any proposed improvements in the areas you indicated on the assessor map.

If you have any questions, contact Design Division staff via email at designinfo@dpw.lacounty.gov.

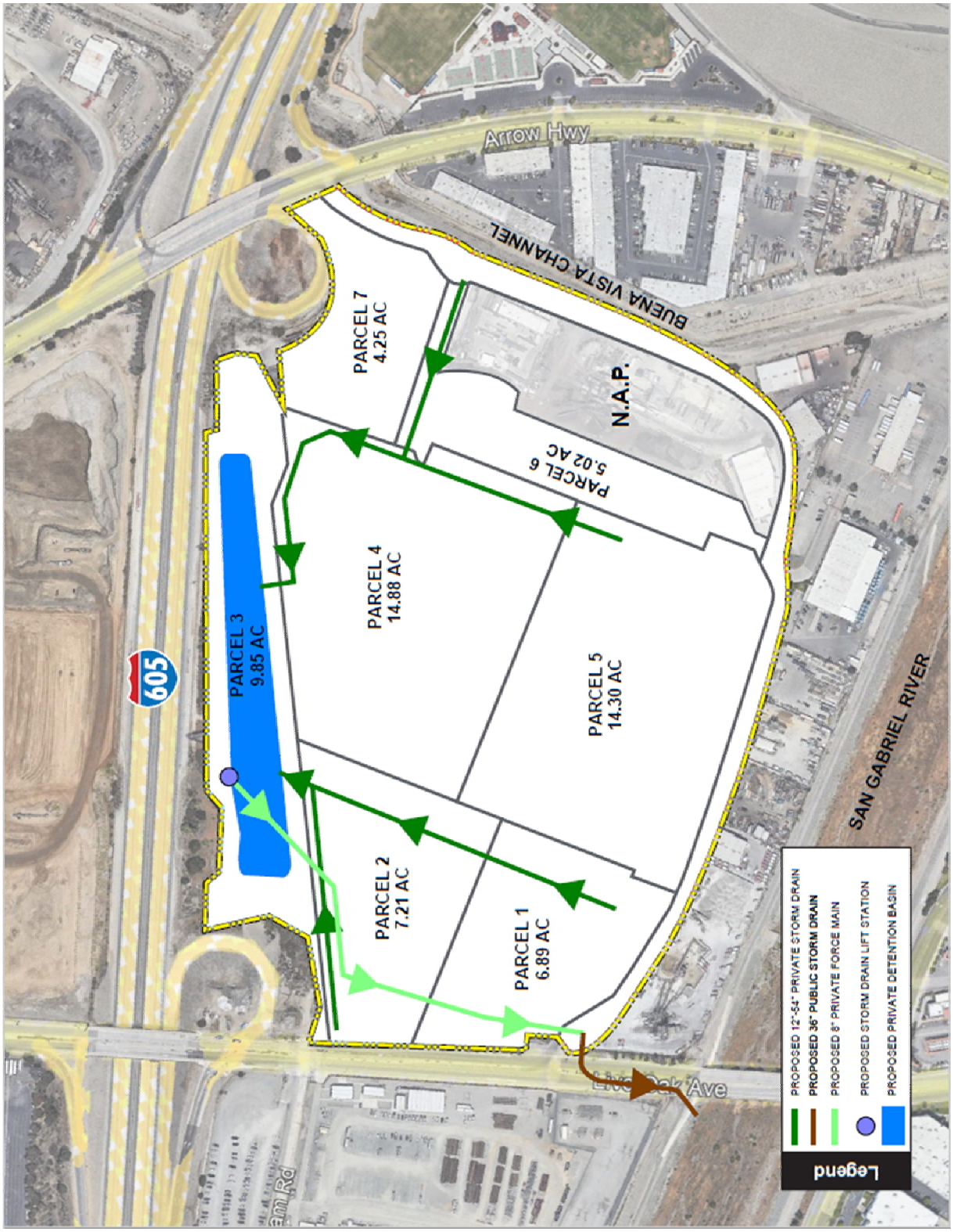
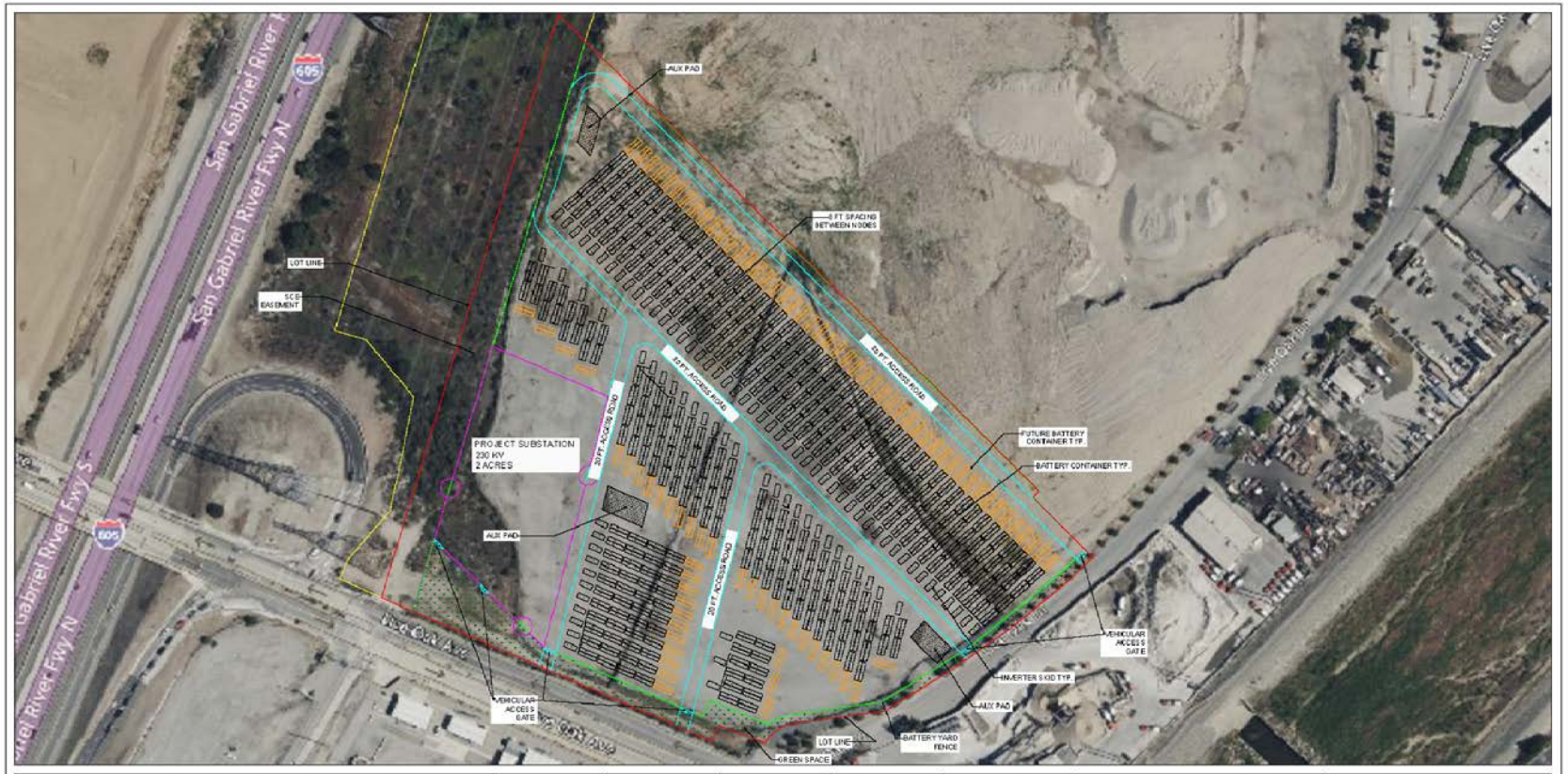



**Figure 2-7**, *Conceptual Storm Water Management Plan*

# OPTION 2: BESS (Battery Energy Storage System)

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|---|---|---|---|---|---|---|---|---|---|---|---|
| NOTES:<br>• EQUIPMENT QUANTITIES, LOCATIONS AND LAYOUTS SHOWN ARE INDICATIVE AND SUBJECT TO CHANGE DURING DETAILED DESIGN.<br>• SIZE OF CAPACITOR BANK ESTIMATED ASSUMING REQUIRED PF OF 0.95 AT POI.<br>• SITE SPECIFIC FEATURES SUCH AS DETENTION PONDS AND DRAINAGE TO BE SHOWN DURING DETAILED DESIGN.<br>• SPACE FOR AUGMENTATION CONTAINERS CAN BE USED FOR LAYDOWN DURING INITIAL CONSTRUCTION.<br>• SYSTEM SIZED FOR SELF FEEDING AUX POWER DURING DISCHARGE. | AC MW AT POI | 400 | | AC MWh AT POI | 1600 | DEV STAGE | EARLY STAGE | | | GABRIEL BESS LAYOUT<br>400 MW/1600 MWh |
| | DC MWh | 1959 | | AUX LOAD EST. | 7.5 MVA | LOCATION | IRWINDALE, CA, USA<br>APN (8532002042) | | | |
| | PLANNED CMA | 20 YEARS | | AC OVERBUILD | 13.88% | BATTERY | SUNGROW ST-2752UX | | | |
| | CAP. BANK | 72 MVAR | | ACREAGE | 14 | INVERTER | SUNGROW SC5000-UD-MV-US | | | aypa A BLACK STONE PORTFOLIO COMPANY |
| | BY | RG | REV | A | DATE | 10/12/2022 | BATT. COUNT | 712 | INVERTER COUNT | 89 | |