



# Final Environmental Impact Report

SCH No. 2018041001

## THE PARK @ LIVE OAK SPECIFIC PLAN

1200, 1220, and 1270 Arrow Highway  
City of Irwindale, California

### Lead Agency



**City of Irwindale**  
5050 North Irwindale Avenue  
Irwindale, CA 91706

**Final EIR | December 5, 2019**

# Final Environmental Impact Report

## SCH No. 2018041001

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### The Park @ Live Oak Specific Plan

1200, 1220, and 1270 Arrow Highway  
City of Irwindale, California

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**Lead Agency**

City of Irwindale  
5050 North Irwindale Avenue  
Irwindale, CA 91706

**CEQA Consultant**

T&B Planning, Inc.  
3200 El Camino Real, Suite 100  
Irvine, CA 92602

**Project Applicant**

Irwindale Partners II, LLC  
510 East Foothill Suite 206  
San Dimas, CA 91733

**Lead Agency Discretionary Permits**

General Plan Amendment (GPA) No. 01-2017  
The Park @ Live Oak Specific Plan  
Zone Change (ZC) No. 01-2017  
Tentative Parcel Map (TPM) No. 82551  
Development Agreement (DA) 01-2017  
Zone Ordinance Amendment (ZOA) No. 01-2019

December 5, 2019



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## ACRONYMS, ABBREVIATIONS, AND UNITS OF MEASURE

**Noted As:**      **Definition**

|            |                                                           |
|------------|-----------------------------------------------------------|
| AQMP       | Air Quality Management Plan                               |
| AQIA       | Air Quality Impact Analysis                               |
| C-1        | Commercial zone                                           |
| C-2        | Heavy Commercial zone                                     |
| CalEEMod   | California Emissions Estimator Model                      |
| CALGreen   | California Green Building Standards Code                  |
| CalRecycle | California Department of Resources Recycling and Recovery |
| Caltrans   | California Department of Transportation                   |
| CAPCOA     | California Air Pollution Control Officers Association     |
| CARB       | California Air Resources Board                            |
| CCR        | California Code of Regulations                            |
| CEQA       | California Environmental Quality Act                      |
| C-M        | Commercial Manufacturing zone                             |
| C-P        | Commercial Professional zone                              |
| DEIR       | Draft Environmental Impact Report                         |
| EIR        | Environmental Impact Report                               |
| FEIR       | Final Environmental Impact Report                         |
| GPA        | General Plan Amendment                                    |
| GPCA       | General Plan Consistency Alternative                      |
| HCM        | Highway Capacity Manual                                   |
| HRA        | Health Risk Assessment                                    |
| ICCT       | International Council on Clean Transportation             |
| ITE        | Institute of Transportation Engineers                     |
| JWPCP      | Joint Water Pollution Control Plant                       |
| LAC        | Los Angeles County                                        |
| LACSD      | Los Angeles County Sanitation District                    |
| LEA        | Local Enforcement Agency                                  |
| LID        | Low Impact Development                                    |
| M-1        | Light Manufacturing zone                                  |





|        |                                             |
|--------|---------------------------------------------|
| M-2    | Heavy Manufacturing zone                    |
| MM     | Mitigation Measure                          |
| RME    | Resources Management Element                |
| SCAQMD | South Coast Air Quality Management District |
| TAC    | toxic air contaminants                      |
| TDM    | Transportation Demand Management            |
| TIA    | Traffic Impact Analysis                     |
| TPM    | Tentative Parcel Map                        |
| VFP    | vehicle fueling pump                        |
| WRP    | Water Reclamation Plant                     |



## F.0 FINAL ENVIRONMENTAL IMPACT REPORT

### F.1 INTRODUCTION

This Final Environmental Impact Report (FEIR) was prepared in accordance with the California Environmental Quality Act (CEQA) as amended (Public Resources Code §21000 *et seq.*) and CEQA Guidelines (Title 14, California Code of Regulations, §15000 *et seq.*).

According to CEQA Guidelines §15132, the FEIR shall consist of:

- a. The Draft EIR (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 commenting 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.

In accordance with the above-listed requirements, this FEIR for The Park @ Live Oak Specific Plan project (hereafter, the “Project”) and associated discretionary and administrative actions consists of the following:

- a. Comment letters and responses to public comment; and
- a) The circulated The Park @ Live Oak Specific Plan EIR and Technical Appendices, SCH No. 2018041001 with additions shown as underlined text and deletions shown as stricken text in Table F-2, *Errata Table of Additions, Corrections, and Revisions*

This FEIR document was prepared in accordance with CEQA and the CEQA Guidelines and represents the independent judgment of the CEQA Lead Agency (City of Irwindale).



## F.2 RESPONSES TO COMMENTS

### A. CEQA Requirements

CEQA Guidelines §15204(a) outlines parameters for submitting comments, and notes that the focus of review and comment of DEIRs should be:

*...on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the 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 suggested 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 §15204(c) further advises that, “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.” CEQA Guidelines §15204(d) also notes that “Each responsible agency and trustee agency shall focus its comments on environmental information germane to that agency’s statutory responsibility.” CEQA Guidelines §15204(e) states that “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.”

Pursuant to CEQA Guidelines §15088(b), copies of the written responses shall be provided to commenting public agencies at least ten (10) days prior to certifying the FEIR. The responses shall be provided along with an electronic copy of this FEIR, as permitted by CEQA, and shall conform to the legal standards established for response to comments on DEIRs.

Additionally, a comment which draws a conclusion without elaborating on the reasoning behind or, the factual support for, those conclusions does not require a response. Under the CEQA Guidelines, the Lead Agency is obligated to respond to comments “raising significant environmental issues” with “good faith, reasoned analysis.” (CEQA Guidelines § 15088(a) and (c)). These responses “shall describe the disposition of significant environmental issues raised ... [and] give reasons why specific comments and suggestions were not accepted (CEQA Guidelines § 15088(c)). To the extent that specific comments and suggestions are not made, a specific response cannot be provided and is not required. Per CEQA Guidelines § 15088(c), the level of detail contained in the response may



correspond to the level of detail provided in the comment; responses to general comments may be general.

***B. Responses to DEIR Comments***

CEQA Guidelines §15088 require the Lead Agency to evaluate comments on environmental issues received from public agencies and interested parties who reviewed the DEIR and to provide written responses to any substantive comments received. This subsection provides a copy of all written comments the City received on the DEIR, the City's response to each written comment, and a summary of revisions made to the DEIR as part of the FEIR in response to the various comment letters and to correct any errors. In addition, the City took oral comments into consideration voiced by attendees at two community meetings hosted by the Project Applicant on April 22, 2019, and June 11, 2019.

The City received 11 written comment letters during the DEIR public review period which began on March 18, 2019, and closed on May 1, 2019. A list of the agencies, organizations, and persons that submitted comments on the DEIR is presented in Table F-1, *Organizations, Persons, & Public Agencies that Commented on the DEIR*. A copy of each comment letter and a response to each significant environmental issue raised in those letters is provided on the following pages. No comments submitted to the City of Irwindale on the DEIR have produced substantial new information requiring recirculation or additional environmental review under State CEQA Guidelines §15088.5.

**Table F-1 Organizations, Persons, & Public Agencies that Commented on the DEIR**

| <b>Comment Letter</b> | <b>Commenting Party</b>                                                | <b>Date</b> |
|-----------------------|------------------------------------------------------------------------|-------------|
| A                     | California Department of Resources Recycling and Recovery (CalRecycle) | 04/08/19    |
| B                     | California Department of Transportation (Caltrans)                     | 05/15/19    |
| C                     | Los Angeles County Department of Public Health                         | 04/23/19    |
| D                     | The Sanitation Districts of Los Angeles County                         | 04/30/19    |
| E                     | Los Angeles County Department of Parks and Recreation                  | 05/06/19    |
| F                     | South Coast Air Quality Management District (SCAQMD)                   | 05/15/19    |
| G                     | City of Azusa Department of Economic and Community Development         | 05/15/19    |
| H                     | City of Duarte                                                         | 05/15/19    |
| I                     | Golden State Environmental Justice Alliance                            | 05/11/19    |
| J                     | Robert R. Diaz                                                         | 05/15/19    |
| K                     | Manuel Ortiz                                                           | 05/06/19    |



**C. Tentative Parcel Map No. 82551 Modifications**

Since the time the DEIR was circulated for public review, the Project Applicant made modifications to proposed Tentative Parcel Map (TPM) No. 82551. In summary, the revised TPM No. 82551 would establish a subdivision of 11 numbered lots and 7 lettered lots, instead of 13 numbered lots and 5 lettered lots as was indicated in DEIR Subsection 3.3.4.

The modifications to TPM No. 82551 only affect the locations of proposed parcel lines, are not considered substantial, and do not substantively change the Project Description of the DEIR, nor alter any of the environmental impact significance conclusions disclosed by the DEIR. As such, the DEIR does not require recirculation under State CEQA Guidelines §15088.5. A copy of the modified TPM No. 82551 is shown as Figure 1, *Modified Tentative Parcel Map No. 82551*. For comparison purposes, the version of TPM No. 82551 included disclosed the DEIR is shown as Figure 3-10, *Tentative Parcel Map No. 82551*, in Section 3.0, *Project Description*, of the DEIR.

**D. Truck Traffic Management Plan**

Since the time the DEIR was circulated for public review, the Project Applicant has added a Truck Traffic Management Plan to The Park @ Live Oak Specific Plan to facilitate the efficient turning movements and routing of Project-related truck traffic to and from the I-605 Freeway, and to minimize or avoid the occurrence of trucks entering the surrounding cities of Duarte and Azusa. In summary, the truck traffic management plan provides descriptions of truck routes, directional signage requirements, and describes the ongoing responsibility of the Project's property owners' association to implement the truck management plan.

The addition of the truck traffic management plan does not alter any environmental impact significance conclusions disclosed in the DEIR. The truck management plan will better assure that the truck distribution patterns assumed by the DEIR actually occur. As such, the addition of a truck traffic management plan to The Park @ Live Oak Specific Plan is not considered substantial new information and does not require recirculation of the DEIR under State CEQA Guidelines §15088.5. The truck traffic management plan is available in Chapter 5, *Implementation Plan*, Section G, *Truck Traffic Management Plan*, of The Park @ Live Oak Specific Plan.



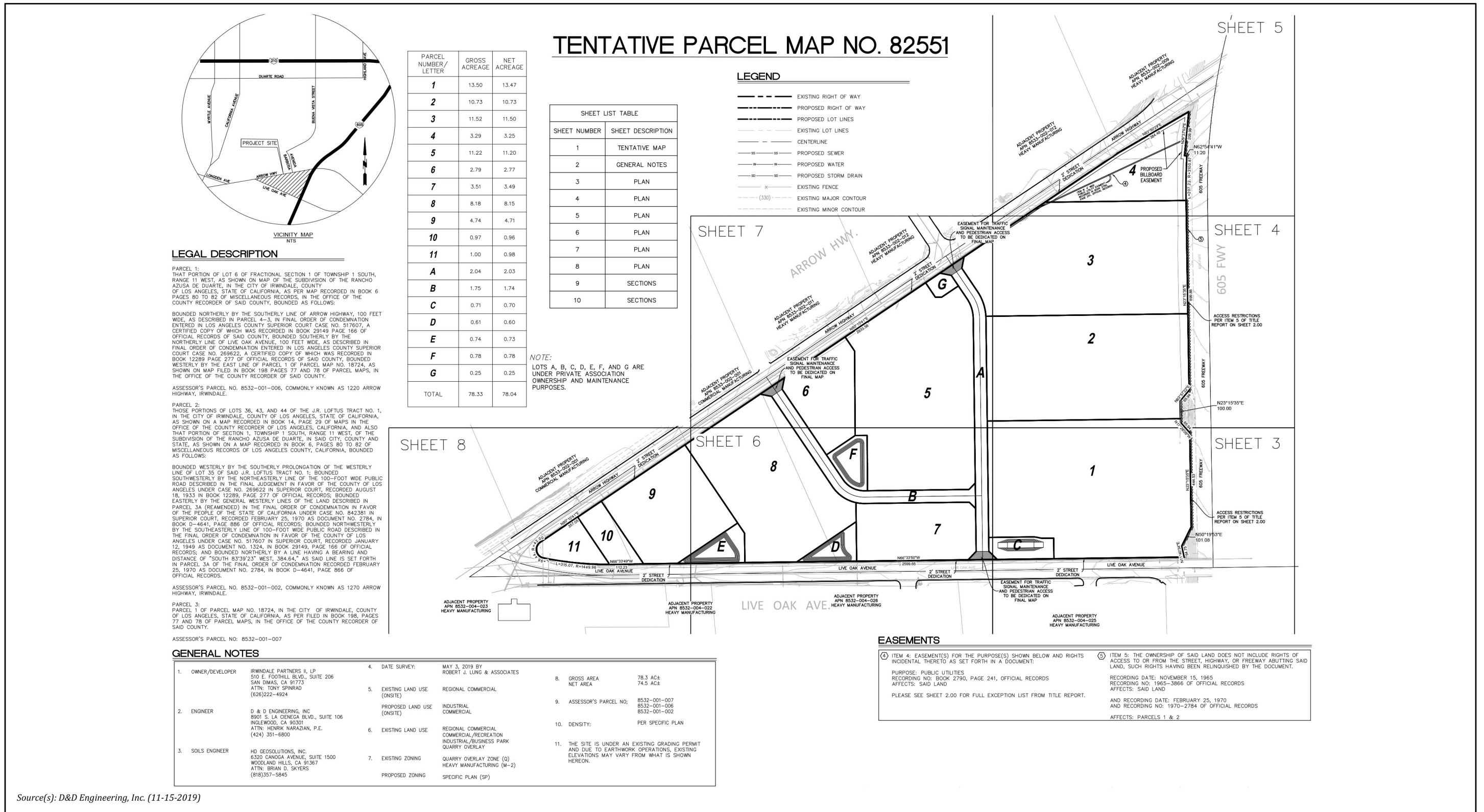


Figure 1



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COMMENT LETTER A

California Environmental Protection Agency

Gavin Newsom, California Governor



DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

1001 I STREET, SACRAMENTO, CALIFORNIA 95814 • WWW.CALRECYCLE.CA.GOV • (916) 322-4027  
P.O. BOX 4025, SACRAMENTO, CALIFORNIA 95812

April 8, 2019

Governor's Office of Planning & Research

APR 08 2019

STATE CLEARINGHOUSE

Marilyn Simpson, Community Development Manager/City Planner  
City of Irwindale City Hall  
5050 Irwindale Avenue  
Irwindale, CA 91706

**Subject:** SCH No. 2018041001 – Draft Environmental Impact Report for The Park @ Live Oak Specific Plan, Los Angeles County

Dear Ms. Simpson:

Thank you for allowing the Department of Resources Recycling and Recovery (CalRecycle) staff to provide comments on the Draft Environmental Impact Report (EIR), titled The Park @ Live Oak Specific Plan (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, proposes to redevelop a 78.3-acre property that is currently occupied by Arrow-Live Oak inert debris engineered fill operation (IDEFO), Facility No. 19-AA-1074. The redevelopment will consist of an industrial park/logistics/commercial retail center containing several buildings. The Project site encompasses Assessor's Parcel Numbers (APNs): 8532-001-002, 8532-001-006, and 8532-001-900.

The Project is comprised of:

- Construction of 1,550,000 square feet of building space, of which 1,451,400 square feet will be designated as Industrial/Business Park and 98,600 square feet will be designated as Commercial; and,
- Construction of paved parking, drive aisles, truck courts, utility infrastructure, landscaping, water quality basins, monument signage, lighting, property walls, gates, and fencing.

**COMMENTS**

Solid Waste Regulatory Oversight

The County of Los Angeles, Department of Public Health, Local Enforcement Agency (LEA) and CalRecycle are responsible for providing regulatory oversight of solid waste handling activities, including permitting, inspections, and enforcement. The LEA will make the determination as to whether any business activity conducted on the Project site falls under their regulatory oversight. For additional information and resources regarding business activities that would be classified as solid waste handling activities under 14 and 27 CCR, please visit CalRecycle's webpage:

A-1

A-2

ORIGINAL PRINTED ON 100% POSTCONSUMER CONTENT, PROCESS CHLORINE FREE PAPER





COMMENT LETTER A

Draft EIR for The Park @ Live Oak Specific Plan  
April 8, 2019  
Page 2 of 2

<http://www.calrecycle.ca.gov/Laws/Regulations/>

If there are any questions pertaining to whether a business activity on the Project site would be classified as a solid waste handling activity, the LEA should be contacted. The LEA permitting contact is Dorcas (Dee) Hanson-Lugo and she can be reached at 626.430.5540 or by e-mail at [dlugo@ph.lacounty.gov](mailto:dlugo@ph.lacounty.gov).

**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 in 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 approval by the decision making body.

If you have any questions regarding these comments, please contact me at 916.341.6138 or by e-mail at [Benjamin.Escotto@calrecycle.ca.gov](mailto:Benjamin.Escotto@calrecycle.ca.gov).

Sincerely,

Benjamin Escotto, Environmental Scientist  
Permitting & Assistance Branch – South Unit  
Waste Permitting, Compliance & Mitigation Division

cc: Martin Perez, Supervisor  
Permitting & Assistance Branch – South Unit

Jeff Hackett, Manager  
Permitting & Assistance Branch – South Unit

Dorcas Hanson-Lugo, Supervisor  
LEA

A-2  
CONT.

A-3

A-4



**RESPONSES TO COMMENT LETTER A:**

**California Department of Resources Recycling and Recovery**

- A-1** No response is needed to this comment summarizing the project description. The City of Irwindale acknowledges CalRecycle's summary of the project description contained in The Park @ Live Oak Specific Plan DEIR, found at Draft EIR (DEIR) Section 3.0, Project Description.
- A-2** The specific, future businesses/operators that will occupy the Park @ Live Oak Specific Plan project are not known at this time. The City of Irwindale acknowledges that the Local Enforcement Agency (LEA) and CalRecycle are responsible parties for providing regulatory oversight of solid waste handling activities. The City also acknowledges the LEA permitting contact is Dorcas (Dee) Hanson-Lugo.
- A-3** As a commenting party on the DEIR, CalRecycle will receive these responses to comments and the Final EIR (FEIR), and will be notified by the City of Irwindale when associated CEQA compliance documents and public notices pertaining to The Park @ Live Oak project are available.
- A-4** The Park @ Live Oak project will be considered in public hearings before the City of Irwindale Planning Commission and City of Irwindale City Council. CalRecycle will be notified of public hearing dates as part of the City's notification procedures identified in the City of Irwindale Municipal Code Section 1.16.100.(B), which require that the hearings be noticed a minimum of 10 days in advance. (City of Irwindale, 2019)



COMMENT LETTER B

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION

DISTRICT 7  
100 S. MAIN STREET, MS16  
LOS ANGELES, CA 90012  
PHONE (213) 897-6536  
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TTY 711  
www.dot.ca.gov



Making Conservation  
a California Way of Life.

Governor's Office of Planning & Research

MAY 15 2019

STATE CLEARINGHOUSE

May 15, 2019

Ms. Marilyn Simpson, AICP  
Community Development Manager  
City of Irwindale, Planning Division  
5050 Irwindale Avenue  
Irwindale, CA 91706

RE: The Park @ Live Oak Specific Plan  
Vic. LA-605/PM 23.91  
SCH # 2018041001  
Ref. GTS # LA-2018-01402AL-NOP  
GTS # LA-2018-02373-DEIR

Dear Ms. Simpson:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The proposed Project would redevelop a 78.3-acre property that is presently occupied by an inert debris engineered fill operation in accordance with the land uses proposed in The Park @ Live Oak Specific Plan. The Park at Live Oak Specific Plan proposes to develop the property with an industrial park/logistics/commercial retail center containing several buildings that would collectively provide a maximum of 1,550,000 square feet of building space, including up to 1,451,400 square feet of industrial/business park uses and up to 98,600 square feet of commercial uses.

B-1

After reviewing the DEIR, Specific Plan, and Traffic Impact Analysis (TIA) prepared on December 12, 2018 by Urban Crossroad, Caltrans has the following comments:

1. On page 39 of TIA, "For the purpose of this analysis, an impact is considered significant if the Project causes the level of service of a facility to go from acceptable to unacceptable or adds 50 or more peak hour trips to a facility already operating at unacceptable level of service." Based on previous phone consultations and the meeting on April 23, 2019 with the City staff, it is confirmed that the City and Caltrans was not aware of this threshold on the State facilities for this project. As a reminder, Caltrans consultation is required when the City plans to set a significant project direct/cumulative traffic impact threshold on the State facilities.
2. On page 67 of the TIA, Table 3-4 Basic Freeway Segment Analysis for Existing (2017) Conditions did not provide any traffic volume reference, as a result we are not able to verify the existing LOS conditions. In addition, the current I-605 is

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B-3

"Provide a safe, sustainable, integrated and efficient transportation system  
to enhance California's economy and livability"



COMMENT LETTER B

Ms. Marilyn Simpson, AICP  
May 15, 2019  
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operating at or near capacity during the peak hours. For all future projects, please work with Caltrans to validate all existing LOS for the State facilities when preparing the traffic impact analysis.

3. On page 77 of the TIA, Table 4-2 Project Trip Generation Summary (PCE) stated that the project would generate 15,867 daily trips and 1,280/1,644 AM/PM peak hour trips. Table 4-3 Project Trip Generation Summary (Actual) stated that the project would generate 14,607 daily trips and 1,198/1,562 AM/PM peak hour trips. On page 88 of the TIA, there will be as high as 289 AM peak hour project trips traveling on the off-ramp.
4. There are 82 related projects in the project vicinity. It would be beneficial if the TIA discloses the total daily trips and AM/PM peak hour trips. On page 94 of the TIA, there are as high as 258 cumulative project peak hour trips traveling on the State facilities. Caltrans anticipates potential significant cumulative traffic impacts on the State facilities when the current freeway condition is at or near capacity during the peak hours. As a reminder, the decision makers should be aware of this issue and be prepared to mitigate potential significant cumulative traffic impacts.
5. As a reminder, Caltrans is concerned that additional traffic exiting the freeway may potentially back into the mainline through lanes if the queue exceeds the storage capacity on the off ramps. A queuing analysis should be performed using HCM methodology. The capacity of the off-ramp should be calculated by the actual length of the off-ramp between the terminuses to the gore point with some safety factor. The existing queue length should be calculated from the traffic counts, actual signal timing and the actual percent of truck assignments with an adequate passenger car equivalent factor. Signal optimization should be considered as a mitigation measure.
6. Caltrans' concern in terms of traffic is that the potential traffic conflict (rear-end accident) may occur at off-ramps when a speed differential is occurred. This may lead to potential cumulative significant traffic impact on the State facilities. From our meeting with you on April 23, 2019 and the letter prepared on May 2, 2019, we learned that the Project entitlements include a Development Agreement (DA), a Tentative Parcel Map, General Plan Amendment, and Zone Change. We concur the following proposal from the City:

From the Specific Plan:

- A pro rata fair share payment of \$703,655.81 shall be made to the City, prior to the issuance of the first building permit, towards the preparation of a study of potential improvements to the I-605 corridor

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CONT.

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that may be initiated by Caltrans and/or City of Irwindale in the future. If a fair share calculation has been determined for improvements to the I-605 on/off ramp at Live Oak Avenue and/or the I-605 on/off ramp at Arrow Highway, then, the project applicant shall provide the City of Irwindale with a payment of \$1,600,000 to be applied toward the cost of Caltrans improvements as specified in The Park @ Live Oak Development Agreement.

From the Development Agreement:

- *Caltrans Studies.* Additionally, Developer shall be responsible for paying its pro rata fair share cost to Caltrans to fund the preparation of a study of potential improvements to the I-605 Corridor that may be initiated by Caltrans and/or City in the future Prior to issuance of the first building permit, Developer shall pay \$703,665.81 to City toward this study. If a fair share calculation has been determined for improvements to I-605 on/off ramp at Live Oak Avenue and I-605 on/off ramp at Arrow Highway, then upon receipt of the completed Caltrans feasibility study for the improvements to the affected on/off ramps, Developer shall provide the City with a cash deposit in the amount of \$1,600,000.00 to be applied to the cost of the Caltrans improvements. City shall commit to requiring all future developments, which City reasonably determines will impact such Caltrans improvements, to contribute a fair share amount toward this study so that each developer is not contributing more than its fair share and the costs of this study are borne equally.

7. Storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Please be mindful that projects should be designed to discharge clean run-off water. Additionally, discharge of storm water run-off is not permitted onto State highway facilities without any storm water management plan.

8. Transportation of heavy construction equipment and/or materials, which requires the use of oversized-transport vehicles on State highways, will require a transportation permit from Caltrans. It is recommended that large size truck trips be limited to off-peak commute periods.

As a reminder, the mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. Senate Bill 743 (2013) mandated that CEQA review of transportation impacts of proposed development be modified by using Vehicle Miles Traveled (VMT) as the primary metric in identifying transportation impacts for all future development projects. For future project,

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CONT.

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COMMENT LETTER B

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you may reference to The Governor's Office of Planning and Research (OPR) for more information.

<http://opr.ca.gov/ceqa/updates/guidelines/>

As mentioned in Caltrans NOP letter, Caltrans is aware of challenges that the region faces in identifying viable solutions to alleviating congestion on State and Local facilities. With limited room to expand vehicular capacity, future development should incorporate multi-modal and complete streets transportation elements that will actively promote alternatives to car use and better manage existing parking assets. Prioritizing and allocating space to efficient modes of travel such as bicycling and public transit can allow streets to transport more people in a fixed amount of right-of-way.

Also, Caltrans supports the implementation of complete streets and pedestrian safety measures such as road diets and other traffic calming measures. Please note the Federal Highway Administration (FHWA) recognizes the road diet treatment as a proven safety countermeasure, and the cost of a road diet can be significantly reduced if implemented in tandem with routine street resurfacing.

Again, we encourage the Lead Agency to integrate transportation and land use in a way that reduces Vehicle Miles Traveled (VMT) and Greenhouse Gas (GHG) emissions by facilitating the provision of more proximate goods and services to shorten trip lengths, and achieve a high level of non-motorized travel and transit use. We also 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). The reference is available online at:

<http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf>

A discussion of mitigation measures appropriate to alleviate anticipated traffic impacts is needed. Any mitigation involving transit or Transportation Demand Management (TDM) is encouraged and should be justified to reduce VMT and greenhouse gas emissions. Such measures are critical to facilitating efficient site access.

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Ms. Marilyn Simpson, AICP  
May 15, 2019  
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When those fair share contributions are made, Caltrans traffic concerns are addressed. If you have any questions, please feel free to contact Alan Lin the project coordinator at (213) 897-8391 and refer to GTS # 07-LA-2018-02373AL-DEIR.

B-16

Sincerely,

MIYA EDMONSON  
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

Attachment

*"Provide a safe, sustainable, integrated and efficient transportation system  
to enhance California's economy and livability"*





COMMENT LETTER B

Attachment



May 2, 2019

Miya Edmonson, IGR/CEQA Branch Chief  
California Department of Transportation  
District 7 – Office of Regional Planning  
100 Main Street, MS #16  
Los Angeles, CA 90012

Dear Ms. Edmonson:

**RE: IRWINDALE DEVELOPMENT PROJECT AFFECTING CALTRANS  
FACILITIES ON I-605**  
(The Park @ Live Oak Specific Plan Project – 1200, 1220, 1270 Live Oak  
Avenue, Irwindale CA) DEIR SCH # 2018041001

Irwindale City staff met with Caltrans staff, coordinated by Alan Lin, on April 23, 2019 to consult on the above listed project. Caltrans is concerned with how the Park @ Live Oak Specific Plan (Project) will impact existing State facilities on I-605.

The Project provides for the development of a 1,550,000 square foot industrial & commercial business park on ±78.3 acres. The site is located southwest of the Santa Fe Dam Recreation Area and immediately west of I-605. The I-605 freeway forms the eastern boundary of the Project area with the I-605/Live Oak Avenue interchange located immediately southeast of the property and the I-605/Arrow Highway interchange located to the northeast. Project entitlements include a Development Agreement (DA), a Tentative Parcel Map, General Plan Amendment, and Zone Change.

The City understands Caltrans' concern that the Project will contribute to cumulative significant impact on state facilities. In order to address these concerns, the Specific Plan and DA outline the obligation of the developer regarding improvements to Caltrans facilities, as shown below. At this time, both the Specific Plan and DA are in draft form.

From the Specific Plan:

- A pro rata fair share payment of \$703,655.81 shall be made to the City, prior to the issuance of the first building permit, towards the preparation of a study of potential improvements to the I-605 corridor that may be initiated by Caltrans and/or City of Irwindale in the future. If a fair share calculation has been determined for improvements to the I-605 on/off ramp at Live Oak Avenue and/or the I-605 on/off ramp at Arrow Highway, then, the project applicant shall provide the City of Irwindale with a payment of \$1,600,000 to be applied toward the cost

B-17





COMMENT LETTER B

Caltrans Letter-Park @ Live Oak  
Page 2

of Caltrans improvements as specified in The Park @ Live Oak Development Agreement.

From the DA:

- *Caltrans Studies.* Additionally, Developer shall be responsible for paying its pro rata fair share cost to Caltrans to fund the preparation of a study of potential improvements to the I-605 Corridor that may be initiated by Caltrans and/or City in the future Prior to issuance of the first building permit, Developer shall pay \$703,665.81 to City toward this study. If a fair share calculation has been determined for improvements to I-605 on/off ramp at Live Oak Avenue and I-605 on/off ramp at Arrow Highway, then upon receipt of the completed Caltrans feasibility study for the improvements to the affected on/off ramps, Developer shall provide the City with a cash deposit in the amount of \$1,600,000.00 to be applied to the cost of the Caltrans improvements. City shall commit to requiring all future developments, which City reasonably determines will impact such Caltrans improvements, to contribute a fair share amount toward this study so that each developer is not contributing more than its fair share and the costs of this study are borne equally.

The City wants to express our sincere appreciation for the department's guidance and support of our development projects and aspires to continue with this positive collaborative relationship. If you have any additional questions, please contact me at (626) 430-2209.

Best Regards,

*Marilyn Simpson*

Marilyn Simpson, AICP  
Community Development Manager/City Planner

cc: William Tam, City Manager  
Arsanious Hanna, City Engineer/Building Official  
Daniel Co, Assistant Engineer  
Adrian Guerra, Assistant City Attorney

B-17  
CONT.



**RESPONSES TO COMMENT LETTER B:  
California Department of Transportation**

- B-1** The City of Irwindale acknowledges Caltrans' summary of the project description contained in The Park @ Live Oak Specific Plan DEIR, found at DEIR Section 3.0, Project Description.
- B-2** The City of Irwindale has consulted by phone and in-person with Caltrans regarding the proposed Project. The City acknowledges this comment, which recognizes the threshold of significance applied in the DEIR for impacts to State highway facilities. Through consultation and mitigation, and as indicated in Comment B-16, Caltrans' concerns have been satisfactorily addressed.
- B-3** The traffic volume reference for the I-605 Freeway segments volume data is the Caltrans Performance Measurement System (PeMS) website, which is noted in Section 2.7 of the Project's Traffic Impact Analysis (TIA) technical report (refer to EIR Technical Appendix I1). In an effort to conduct a conservative analysis, the maximum value observed within the three-day period was utilized for the weekday morning (AM) and weekday evening (PM) peak hours for data obtained for November 28-30, 2017. As requested, the City will work with Caltrans to validate the LOS on State facilities for future projects.
- B-4** The numerical values cited in this comment are accurate as indicated in the Project's TIA technical report (refer to FEIR Technical Appendix I1) and in EIR Subsection 4.11, Transportation. There is no inconsistency. Passenger car equivalent (PCE) volumes and actual volumes are different, because PCE accounts for the effect that large vehicles have on the circulation system. Because vehicles like large trucks, buses, and recreational vehicles take a longer period of time to pass through an intersection than passenger cars, all large vehicles were converted into PCEs for analysis purposes. A PCE factor of 1.5 was applied to 2-axle trucks, a factor 2.0 was applied for 3-axle trucks and a factor of 3.0 was applied for 4+-axle trucks (see DEIR pg. 4.11-1). The volumes shown on page 88 (Exhibit 4-8) of the TIA (refer to FEIR Technical Appendix I1) are in PCE values and are based on the trip assignment resulting from the PCE trip generation and the truck and passenger car trip distributions shown in the TIA.
- B-5** In response to Caltrans's request, cumulative project trip generation has been added to Appendix 4.2 of the project's TIA technical study (refer to FEIR Technical Appendix I1). The addition of this information merely clarifies and amplifies information presented in the TIA that was appended to the DEIR, and is not significant new information. The TIA appended to the DEIR circulated for public review was fundamentally and basically adequate, and as such, recirculation of the DEIR is not warranted due to the addition of this information as set forth in §15088.5 of the State CEQA Guidelines.



- B-6** Off-ramp queuing analysis was performed utilizing Synchro and the Highway Capacity Manual (HCM) methodology. The analysis is included in the Project's TIA technical study (refer to FEIR Technical Appendix I1, Chapter 3 "Area Conditions," Chapter 5 "E+P Traffic Conditions," Chapter 6 "Opening Year Cumulative (2020) Traffic Conditions" and Chapter 7 "Horizon Year (2040) Traffic Conditions"). This information in summary form also is included in EIR Subsection 4.11, Transportation, on DEIR pp. 4.11-51 to 60 under the subheading "E. Traffic Impact Analysis for CMP Facilities". As shown, the Project's impacts to ramp queuing will be less than significant.
- B-7** As shown in Table 7-3 of the Project's TIA technical report (refer to FEIR Technical Appendix I1) and included as DEIR Table 4.11-29, there are no anticipated queuing issues at the I-605 SB Off-Ramp at Arrow Highway or at the I-605 NB Off-Ramp at Live Oak Avenue under Horizon Year (2040) traffic conditions. The off-ramp queuing analysis is based on the 95th percentile queue length with respect to the available off-ramp storage. The 95th percentile queue length is not necessarily ever observed; it is simply based on statistical calculations (the average queue plus 1.65 standard deviations). As such, the off-ramp queuing analysis would tend to overstate as opposed to understate any queuing issues. Because there are no anticipated queuing issues, based on a conservative analysis under Horizon Year (2040) traffic conditions, the speed differential at the entrance to the freeway off-ramps would be considered low. In other words, based on this technical data, the data presented in The Park @ Live Oak Supplemental Traffic Assessment (refer to FEIR Technical Appendix I3), and in the professional opinion of Urban Crossroads, the author of the Project's TIA, there is sufficient storage on the off-ramps to provide enough time for vehicles to slow down while they exit the freeway, thus reducing the chance of rear-end accidents. (Urban Crossroads, 2019a)
- B-8** The City of Irwindale acknowledges Caltrans' concurrence with the statements in this comment, which are excerpted from The Park @ Live Oak Specific Plan and The Park @ Live Oak Development Agreement.
- B-9** The Park @ Live Oak Low Impact Development (LID) report (refer to EIR Technical Appendix G2) is mindful of Los Angeles County's requirements and regulations regarding storm water runoff and discharges. The future development that occurs in The Park @ Live Oak will be required to comply with both the County's drainage and hydrology standards as well as the LID recommendations specified in EIR Technical Appendix G2. Implementation of the LID recommendations is ensured by the City of Irwindale through a condition of approval placed on The Park @ Live Oak Specific Plan approval. As indicated in the Project's LID, the storm water generated on-site will be detained through a series of on-site storm drains and detention basins. The detained volume will be discharged in accordance with the County's recommendations based on their allowable discharge rates. As indicated in the LID, stormwater generated along the east property line adjacent to the I-605 Freeway will be captured in a drainage swale before reaching the freeway and deposited in a detention basin sized to capture the volume of urban runoff.



Detained stormwater is designed percolate into the native soils along the site perimeter and not run off into Caltrans right of way.

- B-10** The City of Irwindale acknowledges that the Project Applicant will be required to obtain a transportation permit from Caltrans during the construction of the proposed Project to allow oversized transport trucks on the state highway system.
- B-11** The City of Irwindale acknowledges the mission of Caltrans and Senate Bill 743. Senate Bill 743 pertaining to VMT methodology is addressed in EIR Subsection 4.11, Transportation, pp. 4.11-1 and 2, and 4.11-61 and 62 under Threshold b.
- B-12** The City of Irwindale acknowledges these general comments. As required by The Park @ Live Oak Specific Plan, the Project includes the provision of meandering sidewalks along Arrow Highway and Live Oak Avenue and a curb-adjacent sidewalk along proposed Street A. In addition, the provision of bicycle parking at each of the Project site's future buildings is required as part of the California Green Building Standards Code, Title 24, Section 5.106.4, pertaining to non-residential structures.
- B-13** The City of Irwindale acknowledges these general comments. The Project does not preclude the City from implementing a "road diet" which is generally and commonly defined as removing travel lanes from roadways and utilizing the space for other uses and modes of travel. The Project does not entail the removal of vehicular travel lanes, however. As discussed in Response B-12, the Project includes the provision of meandering sidewalks along Arrow Highway and Live Oak Avenue, a curb-adjacent sidewalk along proposed Street A, and on-site bicycle parking to encourage non-vehicular travel.
- B-14** The City of Irwindale acknowledges these general comments. The Project entails the establishment of an industrial/business park and commercial development adjacent to the I-605 Freeway. With close proximity to I-605 on- and off-ramps, the Project facilitates VMT reduction on local streets by locating a land use type that will attract truck traffic as close to the state highway system as possible. In addition, the Project will provide sidewalk and bicycle facilities as described above in Response B-12. Transportation Demand Management (TDM) entails reducing reliance on single occupant vehicles. As specified in EIR Mitigation Measure (MM) 4.2-6, as a condition of building permit issuance, the City of Irwindale will require the installation of passenger car EV charging stations and designated carpool parking stalls per the provisions of the California Green Building Standards Code.
- B-15** The EIR includes mitigation measures to alleviate traffic impacts. In addition, The Park @ Live Oak Specific Plan has been revised to add Chapter 5, Section G, Truck Traffic Management Plan. Refer to EIR Mitigation Measures (MMs) 4.2-6 and 4.11-1 to 4.11-8, as well as The Park @ Live Oak Specific Plan and Development Agreement excerpts that Caltrans cited in Comment B-8, which point out the \$703,655.81 pro-rata fair share fee payment that the Project Applicant will make towards the preparation of a study of



- potential improvements to the I-605 corridor, and the \$1.6 million fee payment the Project Applicant will make toward I-605 improvements.
- B-16** The fair share contributions referenced in this comment are assumed to be those cited in Comment B-8, which are required to be paid pursuant to The Park @ Live Oak Specific Plan and Development Agreement. The City of Irwindale appreciates Caltrans for providing comments on the DEIR.
- B-17** This attachment is a letter provided to Caltrans from the City of Irwindale summarizing the Project's fair share contribution obligations. Refer to Response B-9; no further response is needed.





**COMMENT LETTER C**



**BARBARA FERRER, Ph.D., M.P.H., M.Ed.**  
Director

**MUNTU DAVIS, M.D., M.P.H.**  
Health Officer

**CYNTHIA A. HARDING, M.P.H.**  
Chief Deputy Director

**ANGELO J. BELLOMO, REHS, QEP**  
Deputy Director for Health Protection

**BRENDA J. LOPEZ, REHS**  
Interim Director of Environmental Health

5050 Commerce Drive  
Baldwin Park, California 91706  
TEL (626) 430-5374 • FAX (626) 813-3000



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Fourth District

**Kathryn Barger**  
Fifth District

23 April 2019

Marilyn Simpson, Community Development Manager/City Planner  
City of Irwindale  
5050 Irwindale Avenue  
Irwindale CA 91706

**SUBJECT: 19-AA-1074 Arrow-Live Oak IDEFO: DEIR Response Letter**

Dear Ms. Simpson,

The Los Angeles County Department of Public Health's Solid Waste Management Program (SWMP), acting as Local Enforcement Agency (LEA) for the California Department of Resources Recycling and Recovery (CalRecycle), is pleased to review and offer comments regarding the Draft Environmental Impact Report (DEIR).

The site to be developed, as described in the DEIR, is currently an operating Inert Debris Engineered Fill Operation (IDEFO) which is under the regulatory purview of the LEA and is identified with the Solid Waste Information System (SWIS) number 19-AA-1074. This site has been regularly inspected in the past and continues to be inspected by the LEA.

No construction may begin until the IDEFO has been completed to the satisfaction of the LEA. Title 14 of the California Code of Regulations (CCR) Section 17388.3(g) requires that, upon final placement of waste at the site, the IDEFO must be covered with at least 3 feet of compacted soil above the fill or as determined by the LEA. Also, per 14CCR Section 17388.3(f), all IDEFOs, upon completion of fill activities for more than a year, shall comply with 27CCR Section 21170. This section states that the owner or operator, upon completion of the site, shall file a detailed description of the closed site, including a map, with the County Recorder and the LEA. Please work with your LEA inspector to facilitate the completion process.

Please provide copies of all future environmental documents and advanced notice of any hearings or meetings that pertain to this project. Contact should be made with the LEA's Permitting Section Chief, Ms. Dorcas (Dee) Hanson-Lugo at (626) 430-5540 or [dlugo@ph.lacounty.gov](mailto:dlugo@ph.lacounty.gov).

C-1

C-2

C-3



COMMENT LETTER C

Simpson/19-AA-1074  
April 23, 2019  
Page 2

Please feel free to contact me should you have any questions regarding these comments at (626) 430-5584 or [curbach@ph.lacounty.gov](mailto:curbach@ph.lacounty.gov).

↑ C-3  
← CONT.

Sincerely,

*P. Christine Urbach*

P. Christine Urbach, MPH REHS  
Environmental Health Specialist III



**RESPONSES TO COMMENT LETTER C:**

**Los Angeles County Department of Public Health**

- C-1**        The City of Irwindale acknowledges the facts and statements provided in this comment.
- C-2**        The City of Irwindale acknowledges that the Project Applicant will be required by mandatory regulatory requirements pertaining to the IDEFO, to comply with both a) Title 14 of the California Code of Regulations (CCR) Section 17388.3(g) to provide at least three feet of compacted soil above the fill or as determined by the LEA; and b) 27 CCR Section 21170 to file a detailed description of the closed site, including a map, with the County Recorder and the LEA. The IDEFO is proposed to be closed in phases and Project construction will not begin until the IDEFO is closed to the satisfaction of the LEA on the portions of the site where construction would occur.
- C-3**        As a commenting party on The Park @ Live Oak DEIR, the County of Los Angeles Public Health LEA, Permitting Section, will receive these responses to comments and the FEIR, and will be notified by the City of Irwindale when associated CEQA compliance documents and public notices pertaining to the proposed Project are available.



COMMENT LETTER D



COUNTY SANITATION DISTRICTS  
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400  
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998  
Telephone: (562) 699-7411, FAX: (562) 699-5422  
www.lacsd.org

GRACE ROBINSON HYDE  
Chief Engineer and General Manager

April 30, 2018

Ref. Doc. No.: 4969891

Ms. Marilyn Simpson, AICP  
Community Development Manager/  
City Planner  
City of Irwindale  
5050 Irwindale Avenue  
Irwindale, CA 91706

CITY OF IRWINDALE  
COMMUNITY DEVELOPMENT

MAY 06 2019

Dear Ms. Simpson:

RECEIVED

DEIR Response for The Park @ Live Oak Specific Plan

The Sanitation Districts of Los Angeles County (Districts) received a Draft Environmental Impact Report (DEIR) for the subject project on March 19, 2019. The proposed project is located within the jurisdictional boundaries of District No. 22. We offer the following comments:

1. Table 1-1, *Page 1-9*, Summary of NOP Comments – In the second box of the Comments section, the average wastewater flow was estimated to be 471,705 gallons per day based on a combined 1,550,000 square feet of commercial and industrial uses. The first paragraph under the Impact Analysis found on *Page 4.4-14* specifies that the site can be developed with up to 1,550,000 square feet of building space and notes permitted maximums of 1,451,400 square feet of Industrial/Business Park uses and 98,600 square feet of Commercial uses. Based on this maximum build-out, the expected average wastewater flow from the project is 322,325 gallons per day.
2. Wastewater Service and Treatment, *Page 4.13-6*, Response C. – The San Jose Creek Water Reclamation Plant (WRP) currently processes an average flow of 58.5 million gallons per day (mgd). The Joint Water Pollution Control Plant (JWPCP) currently processes an average flow of 261.1 mgd.
3. Wastewater Treatment Facilities, *Page 4.13-17*, Response B. second paragraph – The information on this page specifies that the composition of wastewater generated by the Project is similar to the “composition of wastewater generated within homes, small businesses, offices, retail shops, etc. and would not require any alterations to the LACSD wastewater treatment requirements or to their treatment facilities.” However the proposed project includes a component of 1,451,400 square feet of what is described as Industrial/Business Park. If it is determined that an Industrial Wastewater Discharge Permit is required, connection fee charges will be determined by the Industrial Waste Section.
4. Wastewater Treatment Facilities, *Page 4.13-17*, Response B. last paragraph – According to the Project’s Sewer Area Study found in the EIR Technical Appendix J, the Project would generate

D-1

D-2

D-3

D-4

DOC 5072838.D22



COMMENT LETTER D

Ms. Marilyn Simpson

-2-

April 30, 2018

0.32 mgd of wastewater and a peak flow of 0.81 mgd of wastewater based on a 2.5 peak flow factor. This figure is further used in analyzing the impacts to the combined remaining capacities of both the San Jose Creek WRP and the JWPCP. It should be noted the wastewater generated by the proposed project will be treated at the San Jose Creek WRP. All biosolids and wastewater flows that exceed the capacity of the San Jose Creek WRP are diverted to and treated at the JWPCP.

D-4  
CONT.

5. Conclusion, *Page 4.13-23*, Response D. first paragraph – As noted in item no. 2 of this letter, the San Jose Creek WRP currently processes an average flow of 58.5 mgd.
6. All other information concerning Districts' facilities and sewerage service contained in the document is current.

D-5

D-6

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

D-7

Very truly yours,

Adriana Raza  
Customer Service Specialist  
Facilities Planning Department

AR:ar

cc: A. Schmidt  
A. Howard

DOC 5072838.D22



**RESPONSES TO COMMENT LETTER D:**

**The Sanitation Districts of Los Angeles County**

- D-1** Table 1-1 of the LACSD's NOP comment letter summarizes the LACSD's comments on the EIR's NOP; at that time, and based on known information about the Project, the LACSD estimated that the Project's average wastewater flow would be 471,705 gallons per day. Since that time, the Project Applicant completed preparation of the draft The Park @ Live Oak Specific Plan, which refined the differentiation between permitted maximum square feet of industrial use and maximum square feet of commercial use. Using this breakdown, the LACSD's revised and lower average wastewater flow rate value for the Project of 322,325 gallons per day is noted in Table 1-1 (Summary of NOP Comments) of the FEIR. The average flow value of 322,325 was correctly presented in DEIR Technical Appendix J3, Sewer Area Study (see Technical Appendix J3, pg. 3). To assess potential impacts to the wastewater system, DEIR Subsection 4.13, Utilities and Service Systems, used a peak flow value of 0.81 million gallons per day (see DEIR pg. 4.13-24), instead of the average flow value of 322,325, so no revisions to the DEIR's analysis or conclusions are warranted.
- D-2** The flow rates of the San Jose Creek Water Reclamation Plant (WRP) and the Joint Water Pollution Control Plant (JWPCP) have been revised in the text of the FEIR Subsection 4.13 pursuant to this comment. The revisions indicate that the facilities have slightly lower flow rates and thus more available capacity than was reported in the DEIR. The San Jose Creek WRP has an average flow of 58.5 mgd (instead of 64.1 mgd reported in the DEIR) and the Joint Water Pollution Control Plant has an average flow of 261.1 mgd (instead of 263.4 mgd reported in the DEIR). The correction of these numerical value presented in the DEIR is not significant new information and does not change the conclusions reached by the DEIR. The DEIR circulated for public review was fundamentally and basically adequate, and as such, recirculation of the DEIR is not warranted due to the correction of this numerical value as set forth in §15088.5 of the State CEQA Guidelines.
- D-3** This comment pertains to the composition of wastewater that will be conveyed from the built-out Project to the LACSD system. Based on the list of permitted uses contained in The Park @ Live Oak Specific Plan, some of the uses are expected to generate wastewater that would not require an Industrial Wastewater Discharge Permit ("Permit"), while some other of the permitted uses would require a Permit. According to the Los Angeles County Sanitation District (LACSD), "Industrial wastewater" is defined as all wastewater from any manufacturing, processing, institutional, commercial, or agricultural operation, or any operation where the wastewater discharged includes significant quantities of waste of non-human origin. (LASCD, 1998). The LACSD's issuance of a Permit, which would occur in accordance with the LACSD Wastewater Ordinance, would ensure that controls are established "on users of the Sanitation Districts' sewerage system in order to protect the environment and public health, and to provide for the maximum beneficial use of the Sanitation Districts' facilities (LASCD, 1998). Text clarifying this topic has been added to





Final EIR page 4.13-17. A discussion of industrial wastewater discharges and LASCD's Wastewater Ordinance was disclosed in on DEIR page 4.13-24. The City of Irwindale acknowledges that if any business locates in The Park @ Live Oak that requires an Industrial Wastewater Discharge Permit, the business will be obligated to obtain such a permit and pay requisite connection fees to LACSD.

- D-4** The City acknowledges the facts and statements provided in this comment.
- D-5** Refer to Response D-2
- D-6** The City acknowledges the County Sanitation District of Los Angeles County's concurrence with information presented in the DEIR.
- D-7** The City acknowledges the County Sanitation District of Los Angeles County's contact as Adriana Raza.



COMMENT LETTER E



COUNTY OF LOS ANGELES  
DEPARTMENT OF PARKS AND RECREATION

*"Parks Make Life Better!"*

John Wicker, Director

Norma E. Garcia, Chief Deputy Director

May 6, 2019

Ms. Marilyn Simpson  
Community Development Manager  
Planning Division  
City of Irwindale  
5050 Irwindale Avenue  
Irwindale, CA 91706

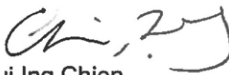
Dear Ms. Simpson:

**NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT  
FOR THE PARK @ LIVE OAK SPECIFIC PLAN PROJECT**

The proposed project has been reviewed for potential impacts on the facilities of the Los Angeles County Department of Parks and Recreation (DPR). The Park @ Live Oak Specific Plan Project involves the development of the 78.3-acre property with an industrial park/logistics/commercial retail center. The project will not impact any DPR facilities and we have no comments.

Thank you for including this Department in the review of this document. Should you have any questions or require additional information, please feel free to contact me at (626) 588-5317 or [jchien@parks.lacounty.gov](mailto:jchien@parks.lacounty.gov)

Sincerely,

  
Jui Ing Chien  
Park Planner

JIC:jic

c: Parks and Recreation (K. King, C. Lau)

E-1



**RESPONSE TO COMMENT LETTER E:**

**Los Angeles County Department of Parks and Recreation**

- E-1**        The City of Irwindale acknowledges that the Los Angeles County Department of Parks and Recreation does not have facilities that would be impacted by the proposed Project.



COMMENT LETTER F



South Coast  
Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

SENT VIA E-MAIL AND USPS:

[Msimpson@irwindaleca.gov](mailto:Msimpson@irwindaleca.gov)

Marilyn Simpson, AICP

Community Development Manager/City Planner

City of Irwindale, Planning Division

5050 Irwindale Avenue

Irwindale, CA 91706

May 15, 2019

**Draft Environmental Impact Report (Draft EIR) for the Proposed  
Park @ Live Oak Specific Plan Project (SCH No.: 2018041001)**

South Coast Air Quality Management District (South Coast AQMD) staff appreciates the opportunity to comment on the above-mentioned document. The following comments are meant as guidance for the Lead Agency and should be incorporated into the Final EIR.

**South Coast AQMD Staff's Summary of Project Description**

The Lead Agency proposes to construct 1,550,000 square feet of industrial and commercial uses on 78.3 acres (Proposed Project). The Proposed Project is located on the northeast corner of Arrow Highway and Live Oak Avenue in the City of Irwindale. Construction of the Proposed Project will begin in July 2019 and will be complete by December 2020<sup>1</sup>. Once operational, the Proposed Project is expected to attract 808 truck trips per day<sup>2</sup>. Based on a review of the Draft EIR and aerial photographs, South Coast AQMD staff found that sensitive receptors are within 1,900 feet of the Proposed Project<sup>3</sup>.

F-1

**South Coast AQMD Staff's Summary of Air Quality Analysis**

In the Air Quality Analysis section, the Lead Agency quantified the Proposed Project's construction and operational emissions and compared those emissions to South Coast AQMD's recommended regional and localized air quality CEQA significance thresholds. Based on the analyses, the Lead Agency found that the Proposed Project's regional construction, and localized construction and operational air quality impacts would be less than significant<sup>4</sup>. The Lead Agency also found that the Proposed Project would result in significant and unavoidable regional air quality impacts during operation<sup>5</sup> for VOC and NOx emissions, which would also be cumulatively considerable<sup>6</sup>. The Lead Agency is committed to implementing air quality Mitigation Measures (MMs) 4.2-1 through 4.2-12, which include, but are not limited to, installation of passenger car EV charging stations, installation of infrastructure to support future solar power and electric trucks<sup>7</sup>, and use of electric or Tier 4 cargo handling equipment. Additionally, the Lead Agency prepared a mobile source Health Risk Assessment (HRA) and found that operation of the Proposed Project would result in a cancer risk of 0.54 in one million at the maximum impacted sensitive receptor<sup>8</sup>, which would not exceed South Coast AQMD's CEQA significance threshold of 10 in one million for cancer risk<sup>9</sup>.

F-2

<sup>1</sup> Draft EIR. Section 4.2 Air Quality. Page 4.2-17.

<sup>2</sup> *Ibid.* Section 3 Project Description. Page 3-15.

<sup>3</sup> *Ibid.* Section 4.2 Air Quality. Page 4.2-19.

<sup>4</sup> *Ibid.* Section 4.2 Air Quality. Page 4.2-28 - 31.

<sup>5</sup> *Ibid.* Page 4.2-35 -37.

<sup>6</sup> *Ibid.*

<sup>7</sup> *Ibid.* Pages 4.2-41 -42.

<sup>8</sup> *Ibid.* Page 4.2-33.

<sup>9</sup> South Coast AQMD has developed the CEQA significance threshold of 10 in one million for cancer risk. When South Coast AQMD acts as the Lead Agency, South Coast AQMD staff conducts a HRA, compares the maximum cancer risk to the threshold of 10 in one million to determine the level of significance for health risk impacts, and identifies mitigation measures if the risk is found to be significant.



COMMENT LETTER F

Marilyn Simpson

May 15, 2019

South Coast AQMD's 2016 Air Quality Management Plan

On March 3, 2017, the South Coast AQMD's Governing Board adopted the 2016 Air Quality Management Plan (2016 AQMP)<sup>10</sup>, which was later approved by the California Air Resources Board on March 23, 2017. Built upon the progress in implementing the 2007 and 2012 AQMPs, the 2016 AQMP provides a regional perspective on air quality and the challenges facing the South Coast Air Basin. The most significant air quality challenge in the Basin is to achieve an additional 45 percent reduction in nitrogen oxide (NOx) emissions in 2023 and an additional 55 percent NOx reduction beyond 2031 levels for ozone attainment.

F-3

South Coast AQMD Staff's General Comments

South Coast AQMD staff has comments on the HRA modeling parameters performed for the Proposed Project. Please see the attachment for more information. Additionally, as described in the 2016 AQMP, achieving NOx emissions reductions in a timely manner is critical to attaining the National Ambient Air Quality Standard (NAAQS) for ozone before the 2023 and 2031 deadlines. South Coast AQMD is committed to attaining the ozone NAAQS as expeditiously as practicable. The Proposed Project plays an important role in contributing to regional VOC and NOx emissions during operation. To further reduce those emissions, South Coast AQMD staff recommends revisions to existing MMs 4.2-6, 4.2-8, and 4.2-11 and that the Lead Agency incorporate additional mitigation measures in the Final EIR. The attachment also includes recommendations that the Lead Agency should include discussions to demonstrate compliance with South Coast AQMD Rule 403(e), Rule 1470, and Rule Series 1146 in the Air Quality Section of the Final EIR.

F-4

Conclusion

Pursuant to California Public Resources Code Section 21092.5(a) and CEQA Guidelines Section 15088(b), South Coast AQMD staff requests that the Lead Agency provide South Coast AQMD staff with written responses to all comments contained herein prior to the certification of the Final EIR. In addition, issues raised in the comments should be addressed in detail giving reasons why specific comments and suggestions are not accepted. There should be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice (CEQA Guidelines Section 15088(c)). Conclusory statements do not facilitate the purpose and goal of CEQA on public disclosure and are not meaningful, informative, or useful to decision makers and to the public who are interested in the Proposed Project. Further, when the Lead Agency makes the finding that the recommended changes to the existing MMs 4.2-6, 4.2-8, and 4.2-11 and new mitigation measures are not feasible, the Lead Agency should describe the specific reasons for rejecting them in the Final EIR (CEQA Guidelines Section 15091).

F-5

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 Alina Mullins, Assistant Air Quality Specialist, at [amullins@aqmd.gov](mailto:amullins@aqmd.gov) or (909) 396-2402, should you have any questions. 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 Alina Mullins, Assistant Air Quality Specialist, at [amullins@aqmd.gov](mailto:amullins@aqmd.gov) or (909) 396-2402, should you have any questions.

F-6

Sincerely,

*Lijin Sun*

Lijin Sun, J.D.

Program Supervisor, CEQA IGR

Planning, Rule Development & Area Sources

Attachments A and B

LS:AM

LAC190321-06

Control Number

<sup>10</sup> South Coast AQMD. March 3, 2017. 2016 Air Quality Management Plan. Accessed at: <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan>.



COMMENT LETTER F

Marilyn Simpson

May 15, 2019

ATTACHMENT A

**Air Quality Analysis – Health Risk Assessment**

1. Upon a review of Appendix B2 Mobile Source Health Risk Assessment<sup>11</sup> and the technical files<sup>12</sup>, South Coast AQMD staff found that the Lead Agency used the daily breathing rates of 273 and 758 for the third trimester age bin and the “0 to 2” age bin, respectively. They represent the 80<sup>th</sup> percentile daily breathing rate. South Coast AQMD staff recommends that when there are different daily breathing rates for the same age bin, the most appropriate and conservative daily breathing rates, such as the 95<sup>th</sup> percentile daily breathing rates, should be used. Therefore, South Coast AQMD staff recommends that the Lead Agency revise the HRA to use the most conservative daily breathing rates to estimate cancer risk.

F-7

**Recommended Revisions to Existing Mitigation Measures (MMs)**

2. 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. Since the Proposed Project will result in significant and unavoidable long-term air quality impacts from VOC and NOx emissions, South Coast AQMD staff recommends that the Lead Agency incorporate the following revisions to existing mitigation measures in the Final EIR to further reduce those emissions.

F-8

**MM 4.2-6**

As a condition of building permit issuance, the City of Irwindale shall require installation of passenger car EV charging stations, requiring at least 5% of all vehicle parking spaces to include EV charging stations, or at a minimum, require the Proposed Project to be constructed with the appropriate infrastructure to facilitate sufficient electric charging for passenger vehicles and trucks to plug-in. Electrical panels should be appropriately sized to allow for future expanded use. The Lead Agency should also include analyses to evaluate and identify sufficient power available for zero emission passenger cars and trucks, and supportive infrastructures (e.g., EV charging stations) in the Energy and Utilities and Service Systems Sections of the Final EIR, where appropriate. Additionally, the Lead Agency should implement a rideshare program for warehouse, manufacturing, and other commercial employees, and set a goal to achieve a certain participation rate over a period of time. The Lead Agency should provide incentives for employees to encourage the use of public transportation or carpooling, such as discounted transit passes, carpool rebates, and designated carpool parking stalls per the provisions of the California Green Building Standards Code.

F-9

F-10

F-11

**MM 4.2-8**

Require the use of zero-emission or near-zero emission heavy-duty trucks during operation, such as trucks with natural gas engines that meet CARB's adopted optional NOx emissions standard of 0.02 grams per brake horsepower-hour (g/bhp-hr). At a minimum, as a condition of certificates of occupancy, owner users and tenants of buildings with loading docks shall be required to ensure that all heavy-heavy duty (HHD) vehicles accessing the building comply with 13 California Code of Regulations Section 2025, as may be amended (the "Regulations"), and that all HHD vehicles accessing the Project site comply with the required registration and reporting provisions of the Regulations. Developer and all successors also shall include these obligations in all leases of buildings with loading docks. The building owner and occupant shall allow periodic inspection of the site by the City of Irwindale or its designee to confirm compliance. Require that the Proposed Project's tenant(s) shall maintain records of all trucks visiting the Proposed Project and make these records available to the Lead Agency upon request. The records will serve as evidence to prove that each truck called to the Proposed Project meets the minimum 2010 model year engine emission standards. The Lead Agency should conduct regular inspections of the

F-12

F-13

<sup>11</sup> Draft EIR, Appendix B: Mobile Source Health Risk Assessment, Page 21.

<sup>12</sup> Draft EIR Technical Files Excel Workbook “11111-04 HRA Risk Calculation”.





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records to the maximum extent feasible and practicable to ensure compliance with this mitigation measure.

F-13  
CONT.

**MM 4.2-11**

Prior to the issuance of a building permit for any building with loading docks having over 200,000 square feet of floor space, the City of Irwindale shall verify that the building will be constructed with an adequately sized electrical panel(s) and conduit to accommodate future EV charging stations at 2% of the tractor trailer parking spaces, in an appropriate location on the building site where truck charging would likely occur in the future when EV trucks become commercially available. Electrical panels should be appropriately sized to allow for future expanded use. The Lead Agency should also include analyses to evaluate and identify sufficient power available for zero emission trucks and supportive infrastructures (e.g., EV charging stations) in the Energy and Utilities and Service Systems Sections of the Final EIR where appropriate.

F-14

**Additional Recommended Mitigation Measures for Operational Air Quality Impacts**

3. South Coast AQMD staff provided comments on the Notice of Preparation (NOP) for the Proposed Project on May 1, 2018. South Coast AQMD staff's NOP comments included, among others, a list of 30 potential mitigation measures as guidance to the Lead Agency to reduce significant air quality impacts from mobile sources and area sources during operation. The Lead Agency evaluated the applicability of the recommended mitigation measures<sup>13</sup>. South Coast AQMD staff has additional comments on the Lead Agency's applicability findings for four mitigation measures. Please see Attachment B for more information. Based on the reasoning discussed in Attachment B, South Coast AQMD staff recommends that the Lead Agency reconsider and include the following mitigation measures for mobile sources during operation in the Final EIR.

F-15

- Limit the daily number of truck trips allowed to visit the warehouse and manufacturing portions of the Proposed Project to the level that was analyzed in the Final EIR (e.g., 808 daily truck trips). If higher daily truck volumes are anticipated during operation, the Lead Agency should commit to re-evaluating the Proposed Project's air quality impacts through CEQA prior to allowing higher activity levels.
- Have truck routes clearly marked with trailblazer signs, so that trucks will not enter residential areas located adjacent to the Myrtle Avenue/Peck Road & Live Oak Avenue intersection.
- Develop, adopt, and enforce truck routes both in and out of the Proposed Project such that trucks are not traversing past nearby neighbors or other sensitive receptors (i.e. residential uses located adjacent to the Myrtle Avenue/Peck Road & Live Oak Avenue intersection), as feasible.
- Establish area(s) within the Proposed Project site for repair needs.

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**Responsible Agency, Permits, and Compliance with South Coast AQMD Rules**

4. Implementation of the Proposed Project may require permits from South Coast AQMD. If operation of the Proposed Project will involve the use of stationary diesel-fueled internal combustion or compression engines (i.e., generators or firefighting equipment), South Coast AQMD Rule 1470 – Requirement for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines<sup>14</sup> and South Coast AQMD Rule Series 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters<sup>15</sup>, including Rule 1146.1 – Emissions of

F-20

<sup>13</sup> Draft EIR. Technical Appendix B1. Table 1-1. Pages 8-14.

<sup>14</sup> South Coast AQMD. Rule 1470 – Requirement for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines. Accessed at: <http://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1470.pdf>.

<sup>15</sup> South Coast AQMD. Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters. Accessed at: <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1146.pdf>.



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Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters<sup>16</sup> and Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters<sup>17</sup> would apply and should be discussed in the Air Quality Section of the Final EIR. Therefore, South Coast AQMD staff recommends that the Lead Agency consult with South Coast AQMD Permitting and Engineering staff as early as feasible to determine permit requirements and any applicable rules and regulations that should be discussed in the CEQA document for the Proposed Project. Additionally, in the event that the Proposed Project will require new stationary equipment that requires a permit from South Coast AQMD, the Lead Agency should identify South Coast AQMD as a Responsible Agency for the Proposed Project in the Final EIR. Questions on permits and applicable South Coast AQMD rules can be directed to South Coast AQMD's Engineering and Permitting staff at (909) 396-3385. For more general information on permits, please visit South Coast AQMD's webpage at: <http://www.aqmd.gov/home/permits>.

F-20  
CONT.

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5. The Lead Agency included a discussion of general compliance with South Coast AQMD Rule 403 – Fugitive Dust in the Draft EIR. Since the Proposed Project is a large operation of approximately 78.3 acres<sup>18</sup> and will disturb 81.5 acres during construction<sup>19</sup> (50-acre sites or more of disturbed surface area; or daily earth-moving operations of 3,850 cubic yards or more on three days in any year) in the South Coast Air Basin, the Lead Agency is required to comply with Rule 403(e) – Additional Requirements for Large Operations<sup>20</sup>. Additional requirements may include, but are not limited to, Large Operation Notification (Form 403 N), appropriate signage, additional dust control measures, and employment of a dust control supervisor that has successfully completed the Dust Control in the South Coast Air Basin training class<sup>21</sup>. Therefore, South Coast AQMD recommends that the Lead Agency include a discussion to demonstrate specific compliance with South Coast AQMD Rule 403(e) in the Final EIR. Compliance with South Coast Rule 403(e) will further reduce regional and localized emissions from particulate matters during construction.

F-23

<sup>16</sup> South Coast AQMD. Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters. Accessed at: <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1146-1.pdf>.

<sup>17</sup> South Coast AQMD. Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters. Accessed at: <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1146-2.pdf>.

<sup>18</sup> Draft EIR. Proposed Project. Page 3-2.

<sup>19</sup> *Ibid*. Page 3-13.

<sup>20</sup> South Coast AQMD. Rule 403. Last amended June 3, 2005. Accessed at: <http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf>.

<sup>21</sup> South Coast AQMD Compliance and Enforcement Staff's contact information for Rule 403(e) Large Operations is (909) 396-2608 or by e-mail at [dustcontrol@aqmd.gov](mailto:dustcontrol@aqmd.gov).



**COMMENT LETTER F**

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May 15, 2019

**ATTACHMENT B**

**South Coast AQMD Staff's Comments on the Lead Agency's Evaluation of Applicability of Recommended Mitigation Measures**

| <b>South Coast AQMD Staff's Recommended Mitigation Measures in the NOP<sup>22</sup></b>                                                                                                                                                                                                                                  | <b>Lead Agency's Evaluation of Applicability of Recommended Mitigation Measures<sup>23</sup></b>                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>South Coast AQMD Staff's Comments on the Applicability Findings</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Limit the daily number of trucks allowed at the Proposed Project to levels analyzed in the 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 land use or higher activity level. | The traffic volumes analyzed for the Project are based on a reasonable expectation of trip volume considering the allowable uses and intensities identified in the proposed Specific Plan and a conservative assessment of potential market absorption of each use. Given that multiple buildings of various commercial, industrial, and business park user types are expected to be constructed in the Specific Plan area, there is no practical way to monitor the number of truck trips that will occur to all of the buildings. | The Draft EIR should include a conservative representation of a worst-case operational scenario for daily truck trips that are expected to occur at the Proposed Project. In the Draft EIR, the Lead Agency used 808 truck trips per day used to quantify the Proposed Project's air quality and health risk impacts. If it is reasonably foreseeable before the EIR is certified that the Proposed Project would generate more than 808 truck trips per day, the Lead Agency should take into account additional daily truck trips and re-evaluate the Proposed Project's air quality and HRA impacts (CEQA Guidelines Section 15088.5). If information becomes available, after the Proposed Project is approved, suggesting that the Proposed Project will generate more than 808 truck trips per day, the Lead Agency is required to determine if a Subsequent EIR is required under CEQA Guidelines Section 15162. This recommended mitigation measure is to ensure that the modeling assumption (e.g., 808 truck trips per day) for quantifying the Proposed Project's operational emissions and health risks will serve as a condition of project approval. A deviation from it warrants additional analysis through the CEQA process. |
| 2. Have truck routes clearly marked with trailblazer signs, so that trucks will not enter residential areas.                                                                                                                                                                                                             | This mitigation measure is not applicable to the Project because the Project Applicant has no authority to post signs off-site. Given that the Project site is located adjacent to I-605, it is reasonable to expect that trucks serving the Project will access the site from I-605. There are no residential areas between I-605 and the Project site.                                                                                                                                                                            | As a part of the Proposed Project's Traffic Impact Analysis, the Lead Agency analyzed the Proposed Project's traffic impacts to nearby streets, such as the Myrtle Avenue/Peck Road & Live Oak Avenue intersection. Upon a review of aerial photographs, South Coast AQMD staff found that sensitive receptors (e.g., residential uses) are                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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<sup>22</sup> South Coast AQMD staff commented on the Notice of Preparation (NOP) for the Proposed Park @ Live Oak Specific Plan on May 1<sup>st</sup>, 2018. South Coast AQMD staff's comments on the NOP can be accessed here: <http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/noptheparkatliveoak-050118.pdf>.

<sup>23</sup> Draft EIR Appendix R1 Air Quality Impact Analysis, Pages 7 through 14



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|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                    | adjacent to this intersection. Since the Lead Agency included this intersection in the Traffic Impact Analysis, it is reasonable to assume that trucks visiting the Proposed Project could use this intersection. Additionally, there is no information in the Draft EIR to suggest that truck drivers called to the Proposed Project are familiar with the area and/or will receive training on planned truck routes. Common sense is that truck drivers might turn right on Live Oak Avenue instead of left, and traverse past residential uses. Since the Traffic Impact Analysis in the Draft EIR has included trucks going on Myrtle Avenue adjacent to existing residential uses, to prevent trucks from turning right at the Myrtle Avenue/Peck Road & Live Oak Avenue intersection to go to the residential areas, it is recommended that the Lead Agency mark truck routes with trailblazer signs at that intersection. The Lead Agency has the land use authority to post signs off-site, and a duty to protect public health by using its best efforts to minimize exposures of diesel particulate matter emissions to residents living west of the Myrtle Avenue/Peck Road & Live Oak Avenue intersection. The project applicant should work closely with the Lead Agency to ensure truck routes are clearly defined and marked. |
| 3. Develop, adopt and enforce truck routes both in and out of the city, and in and out of facilities. | This mitigation measure is not applicable to the proposed Project. The Project does not have regulatory authority to control truck routes. Given that the Project site is located adjacent to I-605, it is reasonable to expect that trucks serving the Project will access the site from I-605 and not heavily utilize local streets in the area. | As discussed in Comment No. 2 in this table, there is no information in the Draft EIR to suggest that truck drivers called to the Proposed Project are familiar with the area and will receive training on the planned truck routes. Common sense is that some truck drivers might unknowingly turn right at the Myrtle Avenue/Peck Road & Live Oak Avenue intersection and traverse past sensitive receptors. The Lead Agency has land use authority to develop, adopt, and enforce truck routes in and around the city within which the Proposed Project is located. The project applicant should work closely with the Lead Agency to develop, adopt, and enforce truck                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

F-25  
CONT.

F-26



COMMENT LETTER F

Marilyn Simpson

May 15, 2019

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|                                                                         |                                                                                                                                                                                                             | routes both in and out of the Proposed Project to ensure that trucks serving the Proposed Project use the routes that are identified and analyzed in the EIR and avoid traversing through sensitive land uses. If different truck routes are going to be used, they should be disclosed and analyzed in the EIR for the Proposed Project. | F-26<br>CONT. |
| 4. Establish area(s) within the proposed Project site for repair needs. | The Project entails a Specific Plan entitlement. No buildings are proposed at this time, and there are no restrictions specified in the Specific Plan that would prohibit the inclusion of repair services. | Since there are no restrictions in the Specific Plan to prohibit the inclusion of repair services, the EIR should disclose where repair areas will be located within the Proposed Project site and ensure that the areas are away from any sensitive land uses.                                                                           | F-27          |



**RESPONSES TO COMMENT LETTER F:  
South Coast Air Quality Management District**

- F-1** The SCAQMD's summary of the Project Description presented in DEIR Section 3.0 is accurate.
- F-2** The SCAQMD's summary of the Project's air quality analysis presented in DEIR Subsection 4.2 is accurate.
- F-3** The City of Irwindale acknowledges the SCAQMD's summary of its 2016 Air Quality Management Plan (AQMP) and air quality challenges in the South Coast Air Basin.
- F-4** Refer to Responses F-7 through F-27, which comprise responses to comments contained in SCAQMD's Attachment.
- F-5** As a commenting party on the DEIR, the SCAQMD will receive these responses to comments and the FEIR, and will be notified by the City of Irwindale when associated CEQA compliance documents and public notices pertaining to The Park @ Live Oak project are available.
- F-6** The City acknowledges the SCAQMD's contact as Alina Mullins.
- F-7** Comment noted that the SCAQMD prefers use of the most conservative breathing rate (95<sup>th</sup> percentile). The 80th percentile breathing rates were used in the Project's analysis and are appropriate and applicable for CEQA determinations because they represent breathing rates that are high for the human body (80% higher than the average population). Regardless, in response to this comment, Urban Crossroads calculated the risk estimates requested by the SCAQMD to use the 95th percentile breathing rates for the third trimester and "0 to 2" age bins. Based on the revised risk calculation performed by Urban Crossroads, Inc., a recognized air quality technical expert and author of the Project's health risk assessment report (refer to DEIR Technical Appendix B2), the Maximum Exposed Residential Receptor would result in a risk of 0.59 in one million compared to the 0.54 in one million identified in the DEIR. As such, no new significant impacts occur as a result of changing the breathing rates in the analytical evaluation as requested by SCAQMD. The revised risk estimates are summarized in Attachment "A" to these Response to Comments (Urban Crossroads, 2019b). The revised calculation, resulting in a five-tenths of one-one millionth increase in health risk is not significant new information and does not change the conclusions reached by the DEIR. The DEIR circulated for public review was fundamentally and basically adequate, and as such, recirculation of the DEIR is not warranted due to the revision to this analytical calculation as set forth in Section 15088.5 of the State CEQA Guidelines.
- F-8** Refer to Responses F-9 through F-19.





- F-9** The SCAQMD's request for more EV charging stations is noted. Although a large portion of Project-related mobile source air pollution emissions would be attributable to diesel-fueled vehicles (trucks) as opposed to gasoline powered passenger vehicles, in recognition that electric vehicle technology is advancing in the marketplace, Mitigation Measure 4.2-6 has been revised in the FEIR to require that each building be constructed with an adequately sized electrical panel(s) and conduit to accommodate future EV charging stations at a minimum of 5% of the passenger car parking spaces. Mitigation Measure 4.2-11 already addresses a similar requirement for EV truck accommodation.
- F-10** The SCAQMD's request to disclose EV charging station power demand is noted. EIR Subsection 4.3, Energy, has been supplemented to address energy demand and infrastructure for EV charging. As noted therein, the Project Applicant has estimated that the approximate energy demand to power a combination of 2% of the truck parking spaces and 5% of the auto spaces with EV charging under maximum buildout of the Specific Plan is 3,054.125 amps.
- F-11** In response to the SCAQMD's request to encourage rideshare programs, Mitigation Measure 4.2-6 specifies the mandatory CalGreen provision to provide preferential parking for rideshare vehicles, to which the Project is obligated to comply, and is meant to encourage carpooling. The Park @ Live Oak is a proposed private development project whereby private businesses will occupy the Project site. There is no mechanism by which the City of Irwindale can feasibly or legally require private enterprises to implement ride share programs or provide incentives for ridesharing, nor can the City enforce the utilization of such private programs. Additionally, even if carpool programs were to be established and incentivized, there is no assurance that these programs would be utilized to the extent of substantially lessening the Project's air quality impacts; a large portion of Project-related mobile source air pollution emissions would be attributable to diesel-fueled vehicles (trucks) as opposed to passenger vehicles, and carpooling is targeted to passenger vehicles. Carpooling in trucks, where a single driver is commonplace as part of truck-related commerce, is found to be illogical. At this time, the City does not have a public ridesharing program, but acknowledges the SCAQMD's recommendation to consider such a program.
- F-12** The SCAQMD's request for zero- and near-zero trucks is noted. The City of Irwindale acknowledges that technological advancements in the transportation sector are advancing and will continue to advance and phase into use over time. Yet, there are still many unknowns and much speculation about the nature and pace of such advancements becoming available in mass. As a large majority of trucks traveling on the roads today in California are diesel-fueled, prohibiting diesel-fueled trucks from accessing the Project site would essentially render the entire Project inviable.

As reported by the International Council on Clean Transportation (ICCT) on May 5, 2019, in a working paper titled "Zero-emission tractor-trailers in Canada," the ICTT concluded



that the battery technology does not yet exist for zero-emission trucks to carry heavy loads.<sup>1</sup> Further, in a report titled “Transitioning to Zero-Emission Heavy Duty Freight Vehicles,” the ICCT provides an overview of advancing technologies (ICCT, September 2017)<sup>2</sup>. 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, p. 31). The ICCT further reports that their detailed analysis “. . . indicates that these technologies will be insufficient (emphasis added) to achieve decarbonization of heavy-duty vehicles by 2050” (ICCT, p. 32). “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” (ICCT, p. 33).

In summary, imposing specific restrictions and requirements on the proposed Project related to emerging technology, when the various types of technological advancements and their timeframes for common availability are not known with any certainty, provides no to little assurance that restrictions and requirements that may be imposed on the Project by the City of Irwindale related to zero-emission technologies could feasibly be implemented and enforced. CEQA does not require the incorporation of mitigation that is infeasible, nor must an EIR analyze in detail mitigation measures that it concludes are infeasible (*Clover Valley Foundation v. City of Rocklin* (2011) 197 Cal. App.4th 200, 245; *Cherry Valley Pass Acres and Neighbors v. City of Beaumont* (2010) 190 Cal. App.4th 316, 351). As acknowledged by the ICCT, all of the heavy-duty vehicle technologies analyzed by the ICCT world-wide are “. . . in research, exploratory, and early demonstration phases” (ICCT, p. 33). Also, “. . . investments in low-carbon and low-cost hydrogen pathways and refueling infrastructure will have to be made in parallel with vehicle technology advances” (ICCT, p. 33). There is no known timeframe for when these costly and widespread investments by the government and utility industries will be accomplished and available. For these reasons, the City has determined that the suggestion made by the SCAQMD in this comment is non-viable.

- F-13** The SCAQMD’s suggestion to compile truck arrival and departure records and mandate 2010 or better engines is noted. Compliance with California Code of Regulations, Title 13, Division 3, Chapter 1, Article 4.5, Section 2025, adopted in 2008 and titled “Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles” and otherwise known as the “Truck and Bus Regulation” is mandatory in California. Pursuant to this State law, on-

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<sup>1</sup> <http://www.theicct.org/publications/zero-emission-tractor-trailers-canada>

<sup>2</sup> [https://www.theicct.org/sites/default/files/publications/Zero-emission-freight-trucks\\_ICCT-white-paper\\_26092017\\_vF.pdf](https://www.theicct.org/sites/default/files/publications/Zero-emission-freight-trucks_ICCT-white-paper_26092017_vF.pdf)



road diesel-fueled trucks are required to comply with various air quality and GHG emissions standards, including but not limited to the type of fuel used, engine model year stipulations, aerodynamic features, and idling time restrictions. Compliance with State law is mandatory and inspections of on-road diesel trucks subject to applicable State laws are regularly conducted by the California Air Resources Board (CARB). Under the Truck and Bus Regulation, all diesel truck fleets operating in California are required to adhere to an aggressive schedule for upgrading and replacing heavy-duty truck engines. Older, more polluting trucks are required to be replaced first, while trucks that already have relatively clean engines are not required to be replaced until later. Pursuant to the Truck and Bus Regulation, all pre-1994 heavy trucks (trucks with a gross vehicle weight rating greater than 26,000 pounds) were to be removed from service on California roads by 2015. Between 2015 and 2020, all pre-2000 heavy trucks are required to be equipped with particulate matter filters and be upgraded or replaced with an engine that meets 2010 emissions standards. The upgrades/replacements will occur on a rolling basis based on model year. By 2023, all heavy trucks operating on California roads must have engines that meet 2010 emissions standards. Lighter trucks (those with a gross vehicle weight rating of 14,001 to 26,000 pounds) must adhere to a similar schedule and will all be replaced by 2020. The implementation of this State law will result in measurable GHG emission reductions for warehouse projects like the proposed Project for which the primary source of GHG emissions is on-road vehicles.

Considering these mandatory requirements, the only potential for heavy trucks to access the Project site that are equipped with an engine that does not meet 2010 standards would be between the Project's opening year and 2023. Nonetheless, in response to this comment, Mitigation Measure 4.2-8 has been expanded to state that "Building users/operators with truck check-in gates shall maintain truck access records which shall be made available for inspection by the City of Irwindale. This requirement shall expire on January 1, 2023."

- F-14** In response to this comment, "Electrical panels should be appropriately sized to allow for future expanded use" has been added to Mitigation Measure 4.2-9 in the FEIR. As noted in Response F-10, FEIR Subsection 4.3, Energy, has been supplemented to address energy demand and infrastructure for EV charging.
- F-15** Refer to Responses F-16 to F-27.
- F-16** The recommendation to impose and enforce a truck trip cap is not feasible or practical nor required by CEQA. The Project entails the establishment of an industrial/business park and commercial center development that will accommodate several buildings, with uses limited to those permitted by The Park @ Live Oak Specific Plan. CEQA requires that an EIR evaluate the proposed Project based on reasonable assumptions and foreseeable actions. The number of truck trips that the Project is expected to generate is based on Institute of Transportation Engineers (ITE) and SCAQMD recommendations, which rely on surveyed data from other industrial, business park, and commercial buildings, which is reasonable



and reliable information. Information on ITE and SCAQMD trip rate and vehicle type mixes is found in EIR Section 4.11, Transportation, on EIR p. 4.11-26 and Table 4-1 of EIR Technical Appendix I1. The comment does not present any evidence that truck trips associated with the Project would be greater than disclosed in the DEIR. Instituting a cap on the number of trucks that can access the Project's building is not required under CEQA, nor would it be reasonable or feasible for the City of Irwindale to monitor and enforce such a requirement. The DEIR has made reasonable assumptions based on substantial evidence by using ITE and SCAQMD recommendations based on a reasonable mix of building occupants that would be permitted by the proposed Specific Plan. For this reason, the City respectfully rejects the SCAQMD's recommendation to impose and enforce a numerical cap on the number of trucks that the Project attracts during its operation.

Further, EIR includes Mitigation Measure 4.11-6, which is a performance based measure that obligates the Project Applicant to prepare, prior to the issuance of each building permit for future implementing development projects, a trip generation calculation, trip distribution exhibit, and additional analytical traffic analyses so that the City of Irwindale Public Works Department can confirm that the traffic that will be generated specific to the proposed building. With Mitigation Measure 4.11-6 in place, there is no reason to place an additional condition on the project as suggested by this comment.

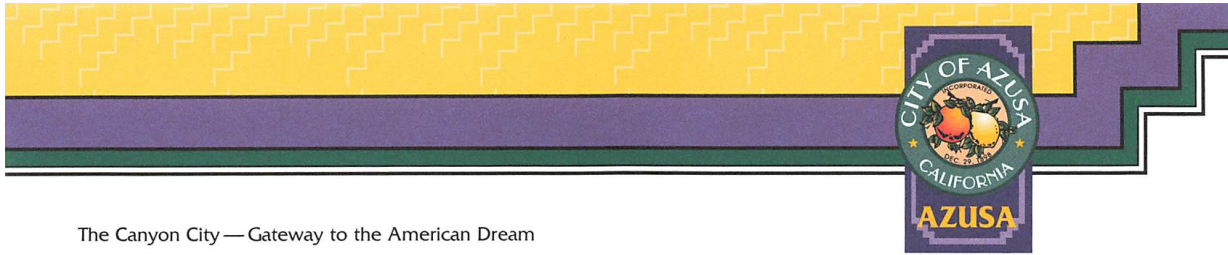
- F-17** Refer to Response G-3. The Park @ Live Oak Specific Plan has been revised to add Chapter 5, Section G, Truck Traffic Management Plan, which includes a requirement for the installation of trailblazer signage.
- F-18** Refer to Response G-3. The Park @ Live Oak Specific Plan has been revised to add Chapter 5, Section G, Truck Traffic Management Plan, which includes a truck routing plan and a requirement to establish a building owner/operator system for the purpose of monitoring and controlling the directional distribution of the Project's truck traffic.
- F-19** Please refer to The Park @ Live Oak Specific Plan, Chapter 3, Section D, which contains a list of permitted and conditionally permitted uses for the project. Automobile and truck repair services is a permitted accessory use in every planning area of the Specific Plan.
- F-20** The future users/operators of the Project's buildings are unknown at this time. The City of Irwindale acknowledges the requirement for users/operators to obtain SCAQMD permits as may be needed for the operation of their business.
- F-21** The potential need for SCAQMD permits has been added to FEIR Table 3-4, Matrix of Project Approvals/Permits. In addition, the SCAQMD has been added to Subsection 1.5, Responsible and Trustee Agencies, in the FEIR, acknowledging the potential need for building user/operators to obtain SCAQMD permits for stationary source equipment.
- F-22** The City of Irwindale acknowledges the SCAQMD's contact information.



- F-23** A discussion of SCAQMD Rule 403(e) has been added to FEIR pp. 4.2-17 and 4.2-28, and the requirement to comply with Rule 403(e) has been added to Mitigation Measure 4.2-2.
- F-24** Refer to Response F-16.
- F-25** Refer to Response F-17.
- F-26** Refer to Responses F-17 and F-18.
- F-27** Refer to Response F-19. As indicated in The Park @ Live Oak Specific Plan, Chapter 3, Section D, automobile, and truck repair services is a permitted accessory use in every planning area of the Specific Plan. No sensitive receptors would be adversely impacted regardless of where these facilities are located inside the Specific Plan area. As disclosed on DEIR p. 4.2-23, the residential land use with the greatest potential exposure to Project-site operations is located approximately 1,900 feet north of the Project site. Between the Project site and the residential use is a mining pit, which is sufficient separation as discussed in DEIR Subsection 4.2, to preclude Project-related significant adverse effects to this receptor location.



**COMMENT LETTER G**



The Canyon City — Gateway to the American Dream

May 15, 2019

Ms. Marilyn Simpson, AICP  
Community Development Manager/City Planner  
City of Irwindale  
Planning Division  
5050 North Irwindale Avenue  
Irwindale, CA 91706

**Subject: Comments on Park @ Live Oak Specific Plan and Park @ Live Oak Specific Plan  
Project Draft Environmental Impact Report**

Dear Ms. Simpson:

The City of Azusa is in receipt of the Park @ Live Oak Specific Plan (Specific Plan) and Park @ Live Oak Specific Plan Project Draft Environmental Impact Report (Draft EIR), both dated March 15, 2019.

The Park @ Live Oak Specific Plan area is located approximately 2.3 miles east of the City of Azusa's western boundary at West Gladstone Street (east of Irwindale Avenue). The City of Azusa has reviewed both documents, comments are provided below.

**PARK @ LIVE OAK SPECIFIC PLAN**

Chapter I, Introduction, Section E includes the following two objectives that clearly indicate a variety of industrial, business park, warehousing, and logistic uses are proposed in the Specific Plan.

- Be responsive to changes in the economy and the ways that people shop for goods by accommodating uses that support warehousing to consumer goods movement, such as manufacturing and assembly.
- Allow for the accommodation of industrial, manufacturing and assembly, warehouse distribution, logistics, and fulfillment center buildings that are designed to attract a wide range of users and are economically competitive with other contemporary buildings of these types in the region.

In total, the Specific Plan proposes to develop the 78.3-acre property with an industrial park/logistics/commercial retail center with a maximum of 1,550,000 square feet of building space, including up to 1,451,400 square feet of Industrial/Business Park uses (general light industrial, manufacturing, assembly, warehouse/distribution, parcel delivery, and e-commerce fulfillment center operations) and up to 98,600 square feet of Commercial use as shown in Specific Plan Table 2-1 below.

G-1

G-2





COMMENT LETTER G

DEIR Response – Park @ Live Oak – City of Irwindale  
May 15, 2019  
Page 2 of 4

TABLE 2-1 LAND USE PLAN STATISTICAL SUMMARY

| PA     | LAND USE DESIGNATION     | ACRES (AC)                   |                           | MAXIMUM USABLE BUILDING<br>SQUARE FOOTAGE (SF)                                                                                                                                                                                                     |
|--------|--------------------------|------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |                          | INDUSTRIAL/<br>BUSINESS PARK | COMMERCIAL/<br>INDUSTRIAL |                                                                                                                                                                                                                                                    |
| 1      | Industrial/Business Park | 28.3                         | --                        | A maximum of 1,550,000 SF of building floor space is permitted, of which a minimum of 15,000 SF of commercial floor space is required and a maximum of 98,600 SF of commercial floor space is permitted in areas designated Commercial/Industrial. |
| 1A     | Commercial/Industrial    | --                           | 12.5                      |                                                                                                                                                                                                                                                    |
| 2      | Industrial/Business Park | 6.4                          | --                        |                                                                                                                                                                                                                                                    |
| 2A     | Commercial/Industrial    | --                           | 10.2                      |                                                                                                                                                                                                                                                    |
| 3      | Industrial/Business Park | 4.6                          | --                        |                                                                                                                                                                                                                                                    |
| 3A     | Commercial/Industrial    | --                           | 12.1                      |                                                                                                                                                                                                                                                    |
| 4      | Commercial/Industrial    | --                           | 4.2                       |                                                                                                                                                                                                                                                    |
| TOTALS |                          | 39.3 AC                      | 39.0 AC                   | 1,550,000 SF                                                                                                                                                                                                                                       |
|        |                          | 78.3 AC                      |                           |                                                                                                                                                                                                                                                    |

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CONT.

Circulation System and Vehicle/Truck Trips

The Specific Plan would generate an additional 14,607 daily trips to the surrounding street and highway systems.

It is unrealistic to assume that truck and vehicle trips to the Specific Plan area will utilize only I-605 on- and off-ramps, limited to the four intersections listed below and analyzed in *The Park @ Live Oak Traffic Impact Analysis, City of Irwindale*, dated December 12, 2018 (Urban Crossroads):

- I-605 Southbound Off-Ramp & Arrow Highway
- I-605 Southbound On-Ramp & Live Oak Avenue
- I-605 Northbound On-Ramp & Live Oak Lane & Arrow Highway
- I-605 Northbound Off-Ramp & Live Oak Avenue

Given the significant traffic congestion in this part of the San Gabriel Valley on weekdays, and specifically during the morning and afternoon peak hours, it is likely that both truck and vehicle trips will utilize other highways (I-10, I-210) and adjacent City streets (e.g., Irwindale Boulevard, Buena Vista Street, Mountain Avenue, Myrtle Street, Peck Road, Huntington Drive/Foothill Boulevard, Duarte Road). Thus, it is imperative that the Specific Plan address the management of truck trips. As currently drafted, Chapter 2, Development Plan, is silent regarding the management of truck trips.

To provide assurances to the City of Irwindale and to surrounding communities such as Azusa, a Truck Traffic Management Plan must be added to the Specific Plan. A sample of a Truck Traffic Management Plan from the West Valley Logistics Specific Plan (City of Fontana) is attached – refer specifically to Section 4.3. This section identifies Specific Plan Truck Routes; Physical Improvements and Fair Share Payments; and Property Owners Association and Transportation Management Committee. The Specific Plan should incorporate these three components in Chapter 2, Development Standards, Section B, as well as any other topics that clearly identify truck travel routes and provide assurances throughout project operations (short-term and long-term) for future site users and within existing communities that surround the site.

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COMMENT LETTER G

DEIR Response – Park @ Live Oak – City of Irwindale  
May 15, 2019  
Page 3 of 4

**PARK @ LIVE OAK SPECIFIC PLAN PROJECT DRAFT ENVIRONMENTAL IMPACT  
REPORT**

**Section 4.11, Transportation**

*The Park @ Live Oak Traffic Impact Analysis, City of Irwindale*, dated December 12, 2018 (Urban Crossroads) is summarized in Section 4.11 and contained in its entirety in Appendix 11 of the Draft EIR.

See comments above regarding Circulation System and Vehicle/Truck Trips.

Mitigation Measures

It is unclear in the Draft EIR text if Mitigation Measures MM 4.11-1 through 4.11-8 have been vetted for feasibility with the City of Irwindale or other affected agencies. Please confirm that all improvements identified are consistent with the appropriate agency's Circulation Element or other applicable plans, and can be constructed/improved within existing rights-of-way. If not, the mitigation measures may not be feasible, and the analysis and mitigation measures would need to be revised.

**Section 6.0, Alternatives – Need for Additional Alternatives**

Existing Zoning Consistency Alternative

The Draft EIR rejected the General Plan Consistency Alternative. However, it did not include an Existing Zoning Consistency Alternative. The Existing Zoning is a realistic alternative to the proposed project and has the potential to meet identified project objectives, and should be added to the Draft EIR. The project site is zoned Quarry and M2 Heavy Manufacturing. It is estimated that 75 percent of the site is designated M2 (58.7 acres), which would allow up to 1.28 million square feet of building space. No development would be assumed for the area designated as Quarry. This alternative gives decision makers and interested parties a useful comparative analysis of what is currently allowed on this site with the proposed project and project alternatives.

Reduced Specific Plan Development Alternative

In addition, the City should add a reduced Specific Plan development alternative to the EIR. This alternative can focus on ways to reduce or eliminate the significant unavoidable impacts identified for Air Quality, Greenhouse Gas Emissions, and Transportation.

**Conclusion**

On behalf of City of Azusa, we appreciate the opportunity to provide the City of Irwindale with comments on the Park @ Live Oak Specific Plan and Park @ Live Oak Specific Plan Project Draft EIR. The City of Azusa is available to discuss our comments in more detail.

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G-6

G-7

G-8



**COMMENT LETTER G**

DEIR Response – Park @ Live Oak – City of Irwindale  
May 15, 2019  
Page 4 of 4

Sincerely,

Matt Marquez  
Director of Economic and Community Development Department

Attachment:  
Fontana – West Valley Logistics Center Specific Plan Chapter 4, Transportation and Circulation



COMMENT LETTER G

## Chapter 4: Transportation and Circulation

### 4.1 Introduction

Circulation improvements constructed for the West Valley Logistics Center will improve the functional efficiency of the circulation system in the southeastern Fontana area, and will enhance the aesthetics of the street network through landscape improvements along the project's frontage.

Access from the Specific Plan area to the north will be from the I-10 freeway at the Sierra Avenue and Cedar Avenue interchanges. Access to the Specific Plan area from the south will be from the SR-60 freeway at the Rubidoux Boulevard and Market Street interchanges.

Building sites within the Specific Plan area will take access from Armstrong Road, Locust Avenue, and Alder Avenue. Armstrong and Locust avenues through the Specific Plan area are public roadways to be maintained by the City of Fontana. The portion of Alder Avenue within the Specific Plan area is proposed to be a private street.

Off-site transportation improvements will be provided to ensure there is sufficient capacity to accommodate future traffic from the Specific Plan area in combination with other developments in the area. As described in Section 4.3, a Traffic Management Plan will be implemented to guide project traffic to the regional transportation network and minimize impacts on adjacent residential neighborhoods.

As part of the Specific Plan, the following roadway improvements will be provided:

#### Roadway Improvements within/adjacent to the Specific Plan Area

- **Locust Avenue:** 102-foot right-of-way, 72-foot curb to curb roadway section, 3 to 6-foot buffer or planter strip, and a painted median.
- **Armstrong Road:** 92-foot right-of-way, 68-foot curb-to-curb roadway section, 3-6-foot buffer or planter strip, and a painted median.
- **Alder Avenue:** cul-de-sac with an 80-foot right-of-way and 56-foot curb-to-curb pavement section.
- **Jurupa Avenue:** half-width improvements along the south side of the roadway adjacent to parcel 7, based on an ultimate 102-foot right-of-way and a 72-foot curb to curb roadway section.

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**COMMENT LETTER G**

West Valley Logistics Center Specific Plan

**Offsite Roadway Improvements along the Primary Truck Routes Connecting the Specific Plan Area to the I-10 and SR-60 Freeways (See Section 4.3)**

- Geometric improvements along the primary truck routes to the I-10 and SR-60 freeways to provide adequate site distance and room for turning movements.
- Improvements to roadway pavement sections along Locust Avenue, which is not currently identified as a truck route to provide adequate support for proposed truck traffic.
- Signage directing trucks from and to the Specific Plan area to the I-10 and SR-60 freeways.
- Payment of Development Impact Fees pursuant to the City of Fontana Ordinance and Development Mitigation Fees pursuant to the San Bernardino County Development Mitigation Nexus Study.
- Fair share payment for other project-related traffic impacts within San Bernardino County and the cities of Jurupa Valley and Riverside.
- Funding for a feasibility study for improvements of the Valley Way/SR-60 freeway interchange. To date, no feasible improvements have been identified for this interchange and as a consequence, no improvement program has been established to which a fair share payment for improvements can be made.

**4.2 Area Roadways**

**4.2.1 Roadways Directly Serving the Specific Plan Area**

**Locust Avenue (south of Jurupa Avenue)**

Locust Avenue runs in a north-south direction through the northern portion of the Specific Plan area, and is designated by the City's General Plan Circulation Element as a Modified Primary Highway south of Jurupa Avenue through the Specific Plan area. Within the Specific Plan area, Locust Avenue will be developed with a right-of-way of 102 feet, a 72-foot curb to curb roadway section, a 3 to 6-foot buffer or planter strip, and a painted median.

**Armstrong Road (north of the Riverside County line)**

Armstrong Road runs north-south through the southerly portion of the Specific Plan area. It is designated by the City's General Plan Circulation Element as a Modified Primary Highway. Armstrong Road through the Specific Plan area will be provided with a right-of-way width of 92 feet, a 68-foot curb-to-curb roadway section, a 3-6-foot buffer or planter strip, and a painted median.

**G-9  
CONT.**



COMMENT LETTER G

4. Transportation and Circulation

### Alder Avenue

Alder Avenue currently runs in a north from Jurupa Avenue to northwest of the Specific Plan area, and it is designated by the City's General Plan Circulation Element as a Modified Secondary Highway for most of its length. The City's Circulation Plan shows Alder Avenue as a Secondary Highway (92-foot right-of-way) through the project site along a proposed alignment south from Jurupa Avenue, and then east, bisecting the Specific Plan area to connect at the intersection of Armstrong Road and 7<sup>th</sup> Street. However, the steep topography and existing habitat areas within the western portion of the Specific Plan area make a roadway extension from Jurupa Avenue to Locust Avenue problematic.

Thus, the Specific Plan is proposing a General Plan Amendment to delete the extension of Alder Avenue from Jurupa Avenue to the Armstrong Road - 7<sup>th</sup> Street intersection. Deletion of this roadway extension will also assist in the management of truck traffic generated within the Specific Plan area. A portion of Alder Avenue west of Armstrong Road will be constructed within an 80-foot right-of-way (56-foot curb-to-curb pavement section) to provide local access to building sites within the Specific Plan area.

### Jurupa Avenue

Jurupa Avenue runs in an east-west direction north of the project. Jurupa Avenue is designated by the City's General Plan Circulation Element as a Primary Highway with a base right-of-way width of 104 feet, including sidewalks except the section of Jurupa Avenue between Locust and Alder Avenues where it is designated as 102 feet. Offsite street improvements would occur on Jurupa Avenue East (Locust Avenue to Cedar Avenue) because it is located within the County of San Bernardino.

#### 4.2.2 Roadways Providing Access between the Specific Plan and the I-10, I-15, and SR-60 Freeways

### Locust Avenue (north of Jurupa Avenue)

Locust Avenue runs in a north-south direction from the Specific Plan area to Slover Avenue, and is designated by the City's General Plan Circulation Element as a Modified Secondary Highway north of Jurupa Avenue and the Specific Plan area.

### Armstrong Road (south of the Riverside County line)

Armstrong Road runs south from the Specific Plan area to the SR-60 freeway through the City of Jurupa Valley. It is designated by the Jurupa Valley General Plan Circulation Element as a Modified Primary Highway.

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CONT.



**COMMENT LETTER G**

West Valley Logistics Center Specific Plan

**Jurupa Avenue (east of Locust Avenue)**

Jurupa Avenue runs east from the Specific Plan area to South Riverside Avenue in the City of Colton. Jurupa Avenue is designated by the Fontana General Plan Circulation Element as a Primary Highway with a base right-of-way width of 104 feet, including sidewalks except the section of Jurupa Avenue between Locust and Alder Avenues where it is designated as 102 feet.

**Slover Avenue**

Slover Avenue is the key roadway alternative to the I-10 freeway, and runs east-west parallel to and south of the freeway. Between Sierra Avenue and Cedar Avenue, Slover Avenue is designated as a Primary Highway with a 102-foot right-of-way. Slover Avenue, in its existing two-lane configuration, carries between 10,000 and 18,000 vehicles per day, including large volumes of trucks.

**Sierra Avenue**

Sierra Avenue is generally a four-lane divided arterial, which serves the primary commercial areas of the City. As is the case for all the arterials approaching the I-10 freeway from the north and south, traffic converges on Sierra Avenue to access the freeway with heavy traffic volumes on the north side of I-10. South of the I-10 freeway, Sierra Avenue is designated as an 8-Lane Major Highway.

**Cedar Avenue**

Cedar Avenue is designated as a 4-lane Major Highway by San Bernardino County, with a 104-foot minimum right-of-way, and an 80-foot curb-to-curb roadway section.

**Rubidoux Boulevard**

South of the Riverside County line, Cedar Avenue becomes Rubidoux Boulevard in the City of Jurupa Valley. This roadway is designated as an Arterial Highway (4-6 lanes with a 128-foot right-of-way) north of Market Street, and an Urban Arterial (6-8 lanes with a 152-foot right-of-way) south of Market Street.

**Market Street**

Market Street is designated as a 4-lane Secondary within the City of Jurupa Valley and as a 4-lane Arterial within the City of Riverside. Both cities propose a 100-foot right-of-way for Market Street.

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CONT.





COMMENT LETTER G

4. Transportation and Circulation

### 4.3 Truck Traffic Management Plan

#### 4.3.1 Specific Plan Truck Routes

Truck access from the Specific Plan area to the north will be from the I-10 freeway at the Sierra Avenue and Cedar Avenue interchanges (see Figure 4-1). Access to the Specific Plan area from the south will be from the SR-60 freeway at the Rubidoux Boulevard (City of Jurupa Valley) and Market Street (City of Riverside) interchanges. Truck routes between the Specific Plan and area freeways are described below.

**From the Specific Plan Area to the I-10 Freeway Westbound (Sierra Avenue)**

- North on Locust Avenue to Slover Avenue;
- West along Slover to Avenue Sierra Avenue; and
- North on Sierra Avenue to the I-10 interchange.

**From the Specific Plan Area to the I-10 Freeway Eastbound (Cedar Avenue)**

*Either:*

- East on Jurupa Avenue; and
- North on Cedar Avenue to the I-10 interchange.

*Or:*

- North on Locust Avenue to Slover Avenue;
- East along Slover to Cedar Avenue; and
- North on Cedar Avenue to the I-10 interchange.

**From the Specific Plan Area to the SR-60 Freeway Westbound (Rubidoux Avenue)**

- North on Locust Avenue to Jurupa Avenue;
- East on Jurupa Avenue to Cedar Avenue;
- South on Cedar Avenue, which becomes Rubidoux Boulevard; and
- South on Rubidoux Boulevard to the SR-60 interchange.

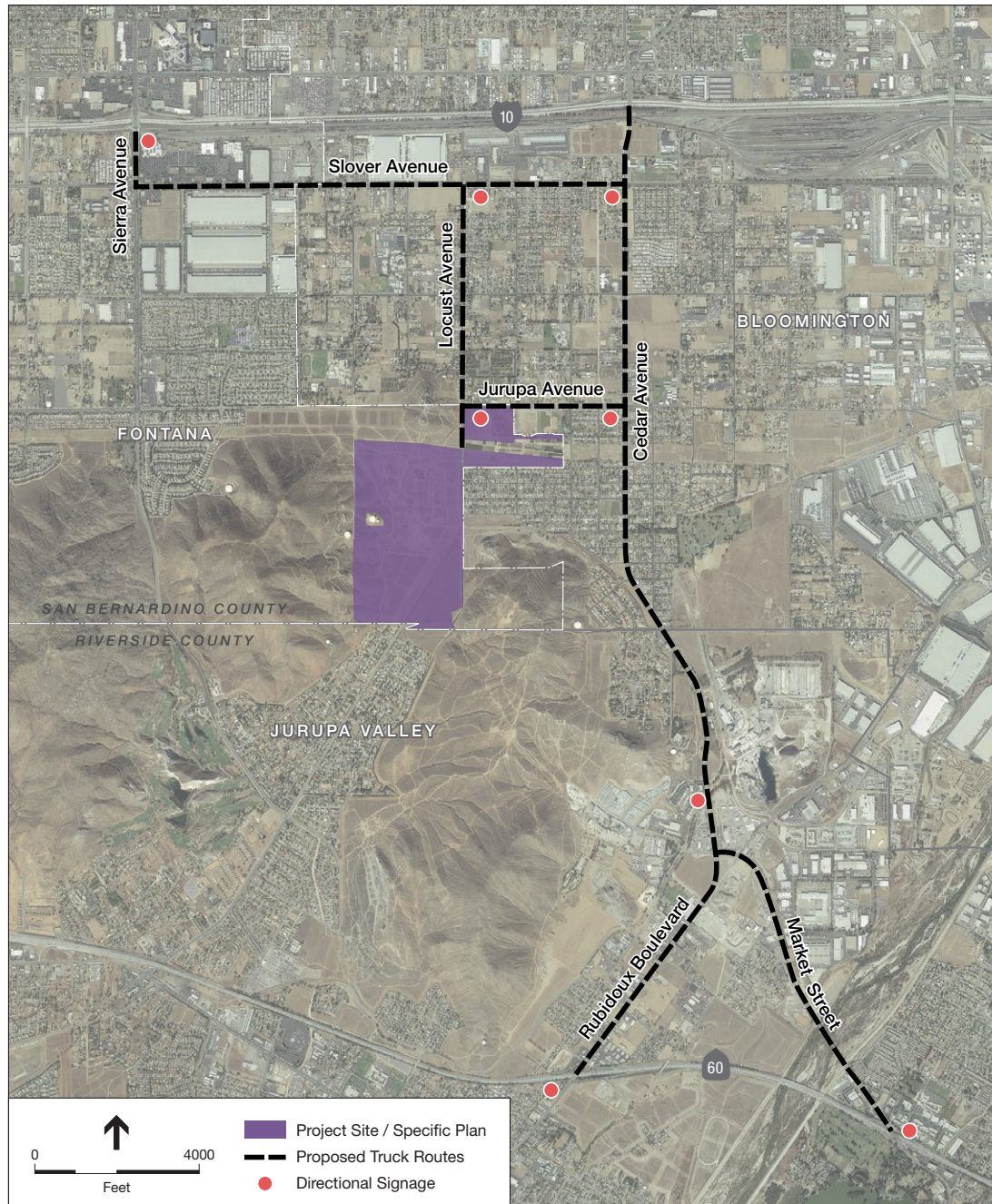
**From the Specific Plan Area to the SR-60 Freeway Eastbound (Rubidoux Avenue)**

- North on Locust Avenue to Jurupa Avenue;
- East on Jurupa Avenue to Cedar Avenue;
- South on Cedar Avenue, which becomes Rubidoux Boulevard;
- South on Rubidoux Boulevard to Market Street;
- South on Market Street to the SR-60 interchange.

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CONT.



COMMENT LETTER G



SOURCE: ESRI, 2012; Google Earth Pro, 2016; Metis, 2017

West Valley Logistics Center . 211220

**Figure 4-1**  
Proposed Truck Routes

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CONT.





COMMENT LETTER G

4. Transportation and Circulation

**4.3.2 Physical Improvements, Fair Share Payments, and Feasibility Studies to Accommodate West Valley Logistics Center Truck Traffic**

To minimize impacts on the residential neighborhoods adjacent to the Specific Plan area, as well as those neighborhoods between the site and area freeways, the following physical improvements will be provided to direct truck traffic along the routes described above. In addition, Specific Plan development will contribute fair share payments for a series of other improvements to accommodate project-related traffic. Finally, the Specific Plan sponsor is offering funding to the City of Jurupa Valley to conduct a feasibility studies for the Valley Way interchange on SR-60. Project related automobile traffic will contribute to increased congestion at this interchange. However, there is no fee program into which a fair share payment can be made, and there is currently no plan outlining feasible improvements on which a mitigation fee program could be based.

*Improvements within the Specific Plan Area*

- Driveway access onto Armstrong Avenue for Buildings 3-6 will be designed to facilitate northbound truck turning movements and discourage southbound truck turning movements.
- The intersection of Alder Avenue and Locust Avenue/Armstrong Road will be designed to facilitate northbound truck turning movements and discourage through truck movements onto 7<sup>th</sup> Street, as well as discourage southbound truck turning movements.
- Directional signage within the Specific Plan area will be placed as follows:
  - At driveway access points onto Armstrong Road for Buildings 3-6, a requirement for all trucks to turn northbound only onto Armstrong Road, prohibiting southbound truck turning movements.
  - On the eastbound approach of Alder Avenue to Locust Avenue, a requirement for all trucks to turn left (northbound) onto Locust Avenue, prohibiting through (eastbound) and right-turn (southbound) truck movements.
  - On the southbound approach of Locust Avenue to Alder Avenue, a prohibition of truck traffic south of Alder Avenue on Armstrong Road, except for local deliveries to Specific Plan building sites 3-6.
  - On the northbound approach of Locust Avenue to Jurupa Avenue, trucks will be instructed to:
    - Continue north on Locust Avenue for the I-10 freeway; and
    - Turn right on Jurupa Avenue for the SR-60 freeway.

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CONT.



COMMENT LETTER G

West Valley Logistics Center Specific Plan

*Improvements and Mitigation Measures along Truck Routes Outside of Specific Plan Area*

- Widen Locust Avenue between Jurupa Avenue to Slover Avenue to provide four travel lanes with a pavement section adequate support for proposed truck traffic.
  - Locust Avenue/Slover Avenue intersection: provide northbound left turn lane, westbound left turn lane, and northbound right turn lane.
- Provide full half-width roadway improvements along the south side of Jurupa Avenue from Locust Avenue to Kessler Park, where full half-width improvements along the south side of Jurupa Avenue are currently in place.
- Widen the westbound approach of Jurupa Avenue to Locust Avenue to accommodate a westbound left turn pocket.
- Provide traffic signals at the following intersections:
  - Locust Avenue / Jurupa Avenue (construct)
  - Locust Avenue/11<sup>th</sup> Street (construct)
  - Locust Avenue/7<sup>th</sup> Street (construct)
  - Linden Avenue / Slover Avenue (pay full cost of signalization, installation to be undertaken by San Bernardino County as part of intersection improvements funded under the Nexus Study).
  - Maple Avenue/Slover Avenue (pay full cost of signalization, installation to be undertaken by San Bernardino County)
- Payment of fair share fees
  - SANBAG Development Mitigation Nexus Study (Nexus Study)
  - City of Fontana Development Impact Fee
  - To the County of San Bernardino for:
    - Alder Avenue/Slover Avenue (fair share payment for signalization that is not included as part of the Nexus Study. Development within the Specific Plan will provide fair share payments at the same rate as the County is collecting from projects within the adjacent unincorporated area)
    - Cedar Avenue/Slover Avenue (fair share payment for intersection improvements)
  - To the City of Jurupa Valley for:
    - Rubidoux Boulevard/20<sup>th</sup> Street-Market Street (fair share of intersection improvements costs)
  - To the Western Riverside Council of Governments
    - Fair share payment for the shortfall between interchange costs and the maximum available under the County's Transportation Uniform Mitigation Fee (TUMF) program.

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CONT.





COMMENT LETTER G

4. Transportation and Circulation

- The Specific Plan will provide needed funding for the preparation of feasibility studies at the following freeway interchanges for which no feasible improvements have been identified to date and as a consequence, improvement program has been established to which a fair share payment for improvements can be made.
  - Valley Way/SR-60 freeway interchange. Funds to be paid to the City of Jurupa Valley for the feasibility study.
- Work with the cities of Fontana and Jurupa Valley to identify Armstrong Road south of the southernmost West Valley Logistics Center driveway as not a truck route and to place appropriate signage along Armstrong Road prohibiting trucks except for local deliveries.
- Work with Caltrans to place signs along the SR-60 freeway indicating that trucks are not permitted on Armstrong Avenue north of the freeway, directing eastbound trucks to existing at Rubidoux Boulevard and westbound trucks to exit at Market Street.
- Provide directional signage along routes between the Specific Plan area and area freeways will be placed as follows:
  - Northbound Locust Avenue approach to Santa Ana Avenue: requirement for all trucks to proceed north through the intersection, truck turning movements prohibited.
  - Northbound Locust Avenue approach to Slover Avenue: directional sign to guide I-10 westbound truck traffic to turn left, and I-10 eastbound truck traffic to turn right.
  - Eastbound Jurupa Avenue approach to Cedar Avenue: directional sign to guide I-10 truck traffic to turn left and SR-60 truck traffic to turn right.
  - On the southbound approach of Rubidoux Boulevard to Market Street, trucks will be instructed to:
    - Continue south on Rubidoux Boulevard for the SR-60 freeway westbound; and
    - Turn left onto Market Street for the SR-60 freeway eastbound.

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CONT.

#### 4.3.2 Property Owners Association, Transportation Management Committee

As part of the Property Owners' Association to be established for the Specific Plan area, a Transportation Management Committee will be formed to guide project traffic to the regional transportation network along the routes identified in Section 4.3.1. The Transportation Management Committee will be required to create a tenant-based system and set of regulations for monitoring and providing feedback for vehicles, specifically including truck traffic, entering and exiting the Specific Plan area. Entry drives will also be clearly marked by special features, including enhanced paving, landscaping features, decorative walls, and signage, to promote safety and to increase the visibility of driveway



COMMENT LETTER G

West Valley Logistics Center Specific Plan

intersections. The Transportation Management Committee will, at a minimum, have the responsibility and obligation to:

- Require building owners/lessees to inform truck drivers of the approved routes to and from the West Valley Logistics Center;
- Require dispatchers to provide truck drivers leaving the building with verbal and written instructions regarding approved truck routes to area freeways;
- Implement and maintain a monitoring program to identify the actual routes trucks are taking to and from the West Valley Logistics Center are taking;
- Use commercially reasonable means to enforce the use of approved truck routes; and
- Provide quarterly reporting to the City of Fontana regarding the actual routes trucks are taking to and from the West Valley Logistics Center are taking.

CC&Rs for the Specific Plan area will establish the City of Fontana as a third-party beneficiary of the Property Owners' Association Traffic Guidelines, and provide the City with the right to take over administration of the Traffic Guidelines, if the Transportation Management Committee fails to discharge its obligations.

#### 4.4 Non-Vehicular Circulation

Sidewalks along the frontage of Locust Avenue, Alder Avenue, and Armstrong Road will be constructed as part of street improvements to facilitate pedestrian access throughout the Specific Plan area. In addition, the roadways will be provided with signage as Class III routes. Bicycle racks will be provided within each building site for employees who wish to bicycle to/from work.

G-9  
CONT.





**RESPONSES TO COMMENT LETTER G:**

**City of Azusa Department of Economic and Community Development**

- G-1** The City of Azusa's location in relation to the Project site is acknowledged herein and show on Figure 2-1, Regional Map, of the EIR.
- G-2** The City of Azusa's summary of the Project as presented in DEIR Section 1.0, Introduction, and Section 3.0, Project Description, is accurate.
- G-3** The City of Azusa's concern about truck routing is noted. Truck routes are established in the City of Irwindale, City of Baldwin Park, and City of Monrovia, as shown on Figures 3-8, 3-9, and 3-10 of the Project's Traffic Impact Analysis (TIA) technical report (refer to EIR Technical Appendix I1). Although not cited in the TIA, the City of Azusa's established truck routes are listed in the City of Azusa Municipal Code Chapter 10.44, Truck Routes. The components of the example Truck Traffic Management Plan attached as Comment G-9 are contained in The Park @ Live Oak Specific Plan Chapter 2 Section B, Conceptual Circulation and Access Plan, Chapter 5 Section E, Roadway Infrastructure Improvements, as well as Chapter 5 Section F, State Highway System Facilities, which obligates the Project Applicant to make a \$703,655.81 payment to the City of Irwindale to be used towards the preparation of a study of potential improvements to the I-605 corridor that may be initiated by Caltrans and/or City of Irwindale in the future. In response to this comment, The Park @ Live Oak Specific Plan has been revised to add Chapter 5, Section G, Truck Traffic Management Plan, which includes a truck routing plan, directional signage plan, and a requirement to establish a building owner/operator system for the purpose of monitoring and controlling the directional distribution of the Project's truck traffic.
- G-4** Comment acknowledged.
- G-5** This comment pertains to the feasibility of mitigation measures to address the Project's significant transportation impacts. Mitigation Measure MM 4.11-7 requires a fair share fee payment to Caltrans, which is feasible and assured through the Project's Development Agreement and The Park @ Live Oak Specific Plan. Mitigation Measure MM 4.11-8 requires a temporary traffic control plan during the Project's construction, which is feasible and will be assured through grading and building permit requirements. Mitigation Measures MM 4.11-1 through 4.11-6 require physical roadway improvements or the payment of fair share fees for physical improvements. All of the improvements would occur wholly or partly in the City of Irwindale. Improvements locations that fall partly in other jurisdictions include Intersections #26 (fair share fee to modify traffic signal timing) #27 (lane restripe and signal modification), and #30 (fair share fee for lane restripe and signal modification) which fall partly in Irwindale and partly in Baldwin Park, intersection #23 (fair share fee to add a signal) which falls partly in Irwindale and partly under the jurisdiction of Caltrans, and Intersection #2 (fair share fee for 2nd southbound left turn



lane signal modification) which falls partly in Irwindale and partly in the City of Monrovia and County of Los Angeles. The City of Irwindale has confirmed that the physical improvements identified in MM 4.11-1 through 4.11-6, including those listed above that partly fall under the jurisdiction of other agencies) are feasible and that the specified physical improvements can be accommodated within existing rights-of-way, with exception of the potential bridge widening over Sawpit Wash indicated in Mitigation Measure 4.11-6a for Intersection #1 – Myrtle Avenue & Longden Avenue. The Project is not responsible for the physical construction of the improvement because there is a lack of proportional nexus. The Project's contribution to the cumulative impact is only 2.7% as indicated in Table 1-5 of the Project's Traffic Impact Analysis (TIA) technical report (refer to EIR Technical Appendix I1); thus, the City cannot obligate the Project Applicant to be responsible for more than 2.7% of the needed improvement. Mitigation of the Project's cumulatively considerable impact at Intersection #1 consists of a fair-share monetary payment to the City of Irwindale. Because the City cannot assure that this improvement will actually occur, the EIR concludes that the Project's traffic impact at Intersection #1 is significant and unavoidable.

**G-6** The DEIR identified a reasonable range of alternatives to the proposed Project in Section 6.0, Alternatives. These included the No Project Alternative (Subsection 6.1.1), Industrial Business Park Alternative (Subsection 6.3.2), and High Cube Warehouse Alternative (Subsection 6.3.3). A General Plan Consistency Alternative discussed in DEIR Subsection 6.2.2 was rejected from detailed analysis in the DEIR because it would have resulted in much greater traffic volume and thus greater environmental impacts compared to the proposed Project. Under the rule of reason, an EIR need discuss only those alternatives necessary to permit a reasoned choice. The three alternatives presented in the DEIR permit a reasoned choice.

The alternative suggested by this comment would include approximately 1,280,000 s.f. of building space over 75% of the site containing uses permitted by the City's Heavy Manufacturing zone (M-2), and presumably a vacant lot resulting from a reclaimed quarry on the other 25%, because the aggregate resources have already been extracted and that portion of the site is currently being reclaimed. Uses permitted in the City's Heavy Manufacturing zone (M-2) include heavy manufacturing in addition to the uses permitted in the Light Manufacturing zone (M-1), Commercial Manufacturing zone (C-M), Heavy Commercial zone (C-2), Commercial zone (C-1), and Commercial Professional zone (C-P). All of the uses that would be permitted or conditionally permitted by The Park @ Live Oak Specific Plan are listed as permitted in at least one of these zones. As such, the commenter's suggestion is to reduce the physical size of the Proposed project by 25% and the building square footage by approximately 13%. In comparison, the Industrial Business Park Alternative evaluated in DEIR Subsection 6.3.2 evaluates a scenario that reduces the Project's building scenario by approximately 6.5% and traffic generation by approximately 63.3% by eliminating commercial land uses. For these reasons, the City finds that an existing zoning alternative is merely a slight derivation of the proposed Project and



- Industrial Business Park alternative and would not substantively or meaningfully add to the decision-makers' reasoned choice of alternatives.
- G-8** Comment acknowledged.
- G-9** This comment is an attachment to the City of Azusa's comment letter, and is an excerpt of a truck management plan from a Specific Plan prepared for an unrelated project located in the City of Fontana, San Bernardino County. Refer to Response G-3, which explains that in response to this comment a truck management plan has been added to The Park @ Live Oak Specific Plan Chapter 5, Section G, Truck Traffic Management Plan.



COMMENT LETTER H



# City of Duarte

1600 Huntington Drive, Duarte, CA 91010 - (626) 357-7931 - FAX (626) 358-0018

May 15, 2019

Marilyn Simpson, AICP  
Community Development Manager/City Planner  
City of Irwindale, Planning Division  
5050 N. Irwindale Ave.  
Irwindale, CA 91706

Dear Ms. Simpson:

On behalf of the City of Duarte ("Duarte"), we have reviewed the Notice of Availability ("NOA") advising that the City of Irwindale ("COI") intends to prepare an Environmental Impact Report ("EIR") for the project entitled "The Park @ Live Oak Specific Plan" ("Project"). The Project is characterized by the redevelopment of a 78.3 acre property to a industrial park/logistics/commercial retail center containing several buildings that would collectively provide a maximum of 1.55M square feet of building space, associated improvements and utilities.

H-1

The City has a significant interest in the consideration of the Project. First, the Project includes allowances for logistics, warehousing and other industrial uses that generate disproportionate amounts of heavy truck traffic. Second, the City has strict truckload limits on the major streets that may be considered as access routes between the Project and Interstate 210 north of the site. The streets of concern include: Buena Vista Street, Duarte Road, Mountain Avenue, Huntington Drive, Highland Avenue, and Mt. Olive Drive. Based upon the Draft EIR, substantial truck traffic may be generated by the proposed Project; traffic that may potentially try to access Interstate 210 through Duarte streets; and consequently violate the City's load limit ordinance.

H-2

Our review of the NOA reveals that several issues with the Project may cause significant impacts if not properly analyzed and/or mitigated. The City of Duarte's previous request to provide mitigation measures to prevent truck traffic from traveling through the City in violation of the City's weight restrictions were not responded to in the EIR and the potential impacts went unaddressed. In fact, Chapter 4.11 of the DEIR discusses Monrovia's truck routes, but fails to address or analyze the more proximate truck routes in Duarte. We have listed the issues that continue to concern the City and would like to see them included and further analyzed in the EIR. The City of Duarte's environmental concerns/comments continue to be as follows:

H-3

- **TRAFFIC AND TRANSPORTATION -**

- The traffic analysis should be revised to account for the traffic that will be generated by the newly approved sediment spreading basin, to be operated by Los Angeles County Public Works at the United Rock Quarry #3, which is directly north of this project site. The truck traffic from associated with that project is projected to be routed directly past the project site and will have a direct impact on the traffic analysis for this project and any traffic analysis that does not include this data is incomplete and insufficient.

H-4

 Brand of the original Andres Duarte Rancho



COMMENT LETTER H

- The City has strict roadway weight limits and severe restrictions to truck routes. The City is concerned with any traffic pattern or route that involves truck traffic (construction and operational impacts) that uses Duarte streets to access (ingress or egress) the Project site – especially traffic that attempts to access Interstate 210 through our City.
  - The City requests analysis of these issues and the inclusion of mitigation measures to include roadway signage, site signage or other measures to ensure that truck traffic does not use any of Duarte's roadways to access the Project site. These locations include signage installations at/near the exits of northbound Private Drive A and Drive B, northbound Avenida Barbosa above Arrow Highway, and westbound on Meridian Street before Mountain Avenue. The attached exhibits illustrate the preferred locations where signs are requested to be placed.

H-5

H-6

H-7

Thank you for your careful consideration of these comments. Please contact me directly if you have any questions concerning the matters addressed in this letter.

Sincerely,

Nick Baldwin, AICP  
Associate Planner

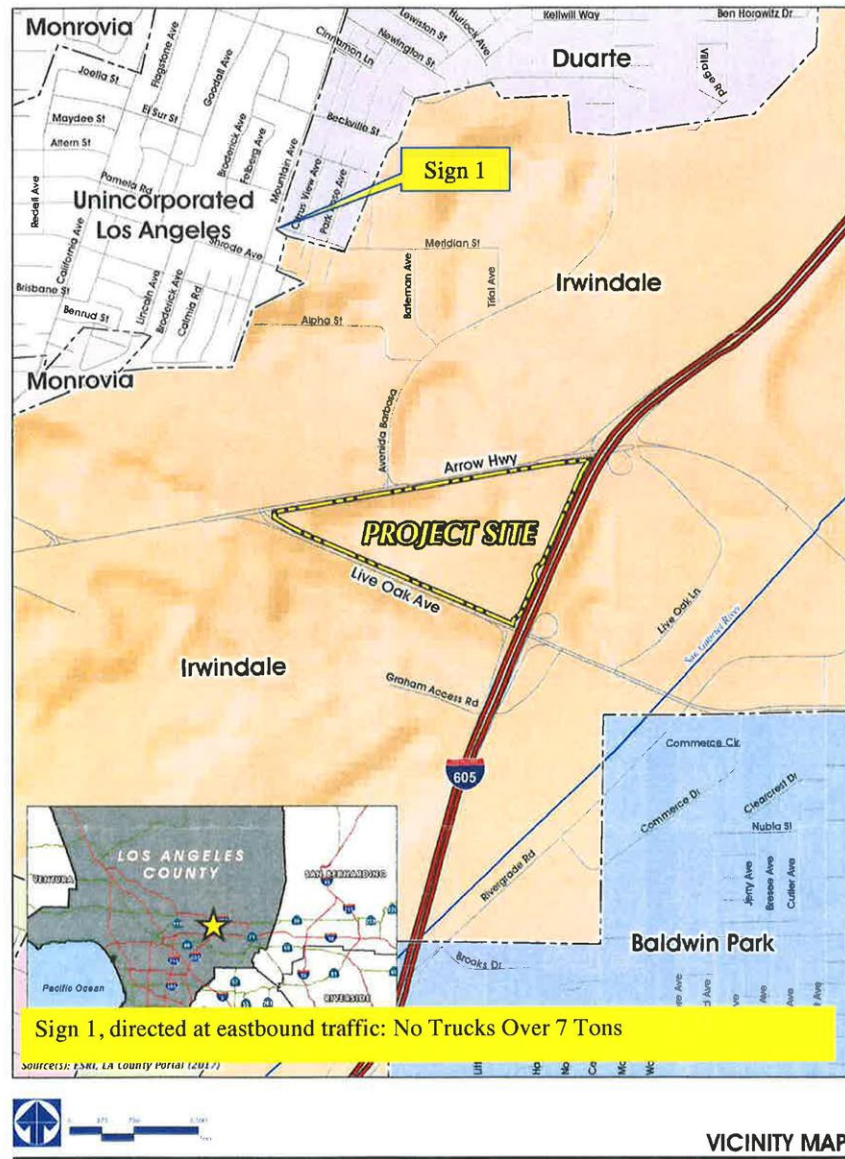
cc: Kevin Taylor, Executive Director, Facilities Design and Construction, City of Hope  
Craig Hensley, AICP, Community Development Director  
Dominic Milano, City Engineer  
Jason Golding, Planning Manager  
Amanda Hamilton, Public Works Manager







COMMENT LETTER H



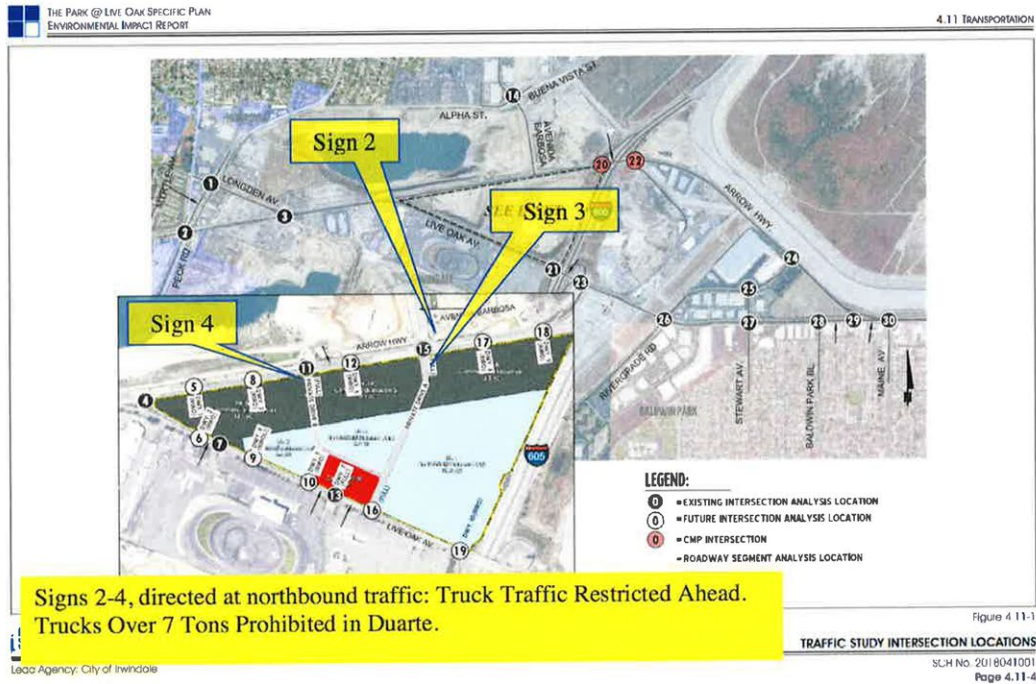
H-8







COMMENT LETTER H



H-8  
CONT.





**RESPONSES TO COMMENT LETTER H:**

**City of Duarte**

- H-1** The City of Irwindale acknowledges the City of Duarte's receipt of the NOA and summary of the project description contained in The Park @ Live Oak Specific Plan DEIR, found at DEIR Section 3.0, Project Description.
- H-2** The City of Duarte's concern about truck routing is noted. Refer to Response G-3, which explains that a truck management plan has been added to The Park @ Live Oak Specific Plan Chapter 5, Section G, in order route Project-related truck traffic to and from the I-605 Freeway at Arrow Highway and Live Oak Avenue and away from City of Duarte streets. The City of Duarte's truckload limits on its streets are acknowledged. Load limit violations on these streets, should they ever occur, are customarily addressed by Code Enforcement actions, which further discourage trucks from using these roads. With adherence to the Truck Management Plan contained in The Park @ Live Oak Specific Plan, which will be assured through the Project's Property Owners Association or Transportation Management Committee (see Specific Plan Chapter 5, Section G, Part 4d), Project-related truck traffic in the City of Duarte will be avoided to the maximum feasible extent.
- H-3** As explained in Responses G-3 and H-2, a truck management plan has been added to The Park @ Live Oak Specific Plan Chapter 5, Section G, in order route Project-related truck traffic to and from the I-605 Freeway at Arrow Highway and Live Oak Avenue and away from City of Duarte streets. With adherence to the Truck Management Plan contained in The Park @ Live Oak Specific Plan, which will be assured through the Project's Property Owners Association or Transportation Management Committee (see Specific Plan Chapter 5, Section G, Part 4d), Project-related truck traffic in the City of Duarte will be avoided to the maximum feasible extent. The Project's traffic analysis considered all intersections that would receive 50 or more of the Project's peak hour trips, which are listed in EIR Table 4.11-1. As shown in in Table 4.11-1, no intersections in Duarte will receive 50 or more of the Project's peak hour trips, and no trucks were routed through Duarte in the analytical study because of truckload limits on City of Duarte streets. In comparison, the City of Monrovia does have a truck route, which is why Monrovia's truck route was considered as a possible route for Project-related truck traffic in the EIR. Refer to Responses G-3, H2, and H-4 through H-6.
- H-4** A supplemental traffic assessment has been performed by Urban Crossroads to add the United Rock Quarry #3 project as a cumulative project. The results are discussed in a supplemental memorandum dated June 13, 2019 and added as Appendix I3 to the FEIR (Urban Crossroads, 2019a). As stated in the memorandum, with the addition of traffic generated by the United Rock Quarry #3 project, there are no additional roadway improvements required in addition to the improvements already identified in the DEIR and the TIA, which was included as Appendix I1 to the DEIR. As such, no revisions to the DEIR or TIA are required. The addition of this supplemental analytical information is not



- significant new information, as none of the DEIR's conclusions have changed. The TIA appended to the DEIR circulated for public review was thorough and comprehensive, and as such, recirculation of the DEIR is not warranted due to the addition of this information as set forth in §15088.5 of the State CEQA Guidelines.
- H-5** The City of Irwindale acknowledges the concern presented in this comment. Refer to EIR Figures 4.11-2 through 4.11-5 for graphic depictions of the Project's reasonably expected truck and passenger car travel routes.
- H-6** Refer to Response G-3 and the associated additions made to The Park @ Live Oak Specific Plan.
- H-7** The City of Irwindale acknowledges the City of Duarte's contact as Nick Baldwin.
- H-8** Refer to Responses G-3 and H-6 and the associated additions made to The Park @ Live Oak Specific Plan.



COMMENT LETTER I

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May 11, 2019

VIA E-MAIL

Marilyn Simpson, AICP  
Community Development Manager/City Planner  
City of Irwindale  
5050 Irwindale Avenue  
Irwindale, CA 91706  
[msimpson@IrwindaleCA.gov](mailto:msimpson@IrwindaleCA.gov)

Re: The Park @ Live Oak Specific Plan EIR (SCH Number: 2018041001)

To whom it may concern:

Thank you for the opportunity to comment on the Environmental Impact Report (EIR) for the proposed The Park @ Live Oak Specific Plan EIR. 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.

As we understand it, the project proposes the implementation of The Park @ Live Oak Specific Plan, resulting in development of the 78.3-acre site with a maximum of 1,550,000 s.f. of building space, of which 15,000 s.f. of commercial uses is required and 98,600 s.f. of commercial uses is permitted in and across Planning Areas 1A, 2A, 3A, and/or 4; a maximum of 1,451,400 s.f. of industrial uses are permitted in all Planning Areas. Retail sales related to a primary industrial/

I-1

I-2





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business park permitted use are also permitted in all Planning Areas. Buildings constructed in these areas would house users such as general light industrial, wholesale trade, manufacturing, warehouse/distribution/logistics, shipping/parcel delivery, and e-commerce fulfillment center operations. Up to 387,500 s.f. of refrigerated (cold storage) warehouse is permitted.

Discretionary actions required to implement the proposed project include:

- (1) General Plan Amendment (GPA) No. 01-2017 proposes to amend the City of Irwindale's General Plan Land Use Map by changing the land use designation for the 78.3-acre project site from "Regional Commercial" to "Commercial/Industrial." The "Commercial/Industrial" designation would allow for the Project site to be developed in accordance with the land uses and development standards set forth in The Park @ Live Oak Specific Plan.
- (2) Zone Change (ZC) No. 01-2017 proposes to amend the City of Irwindale's Zoning Map to change the existing zoning designations of the Project site from "Heavy Manufacturing" (M-2) and "Quarry Overlay Zone (Q)" to "The Park @ Live Oak Specific Plan." The Park @ Live Oak Specific Plan zoning designation would allow for a variety of uses including general light industrial, manufacturing, warehouse/distribution, e-commerce fulfillment center operations, commercial uses, retail services, professional offices, and other uses permitted by The Park @ Live Oak Specific Plan. A complete list of the project's proposed permitted uses is provided within Table III-1, Permitted Uses, of The Park @ Live Oak Specific Plan.
- (3) Tentative Parcel Map (TPM) No. 82551 to subdivide the approximately 78.3-acre project site into 13 numbered lots to accommodate development and five lettered lots to accommodate common areas such as landscaping, surface water quality basins, and roads.
- (4) Development Agreement (DA) No. 01-2017 to provide the project applicant with assurance that development of the project may proceed subject to the rules and regulations in effect at the time of project approval.

#### 4.2 Air Quality

The EIR maintains that the reclamation project at the site and construction of the proposed project will not overlap. Chapter 1, Section D of the proposed The Park @ Live Oak Specific Plan states "The fill operation is expected to be complete in about 2020". Chapter 5, Section D of the proposed The Park @ Live Oak Specific Plan states "Development of The Park @ Live Oak is expected to occur in two phases *in response to the site's reclamation schedule*". The EIR and Air Quality Analysis (AQA) assume the project will begin construction in 2019 and continue

I-2  
CONT.

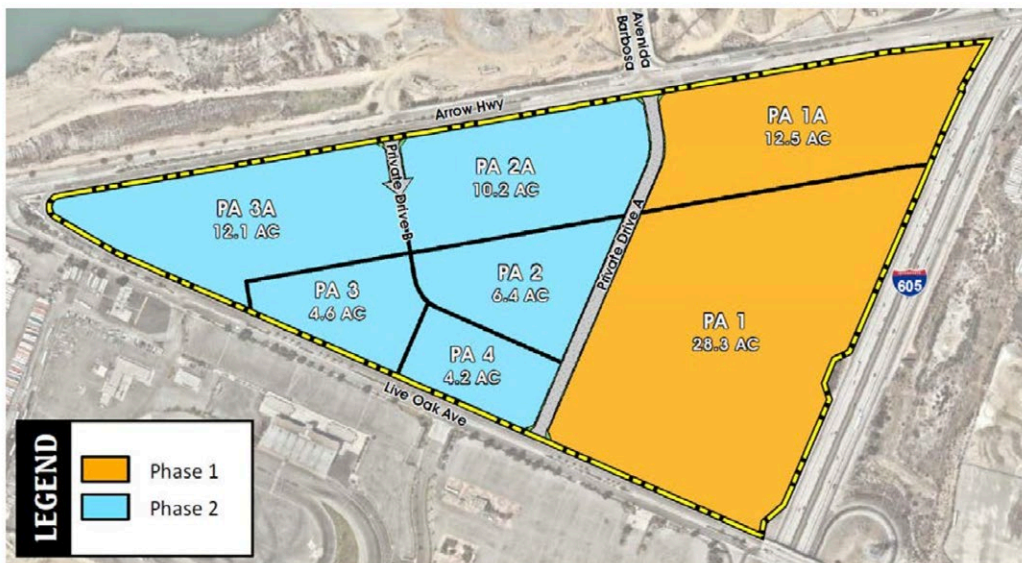
I-3



COMMENT LETTER I

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as a single phase through December 2020 and be operational thereafter. The EIR and AQA do not accurately analyze the proposed project as it is reasonably anticipated (and stated by The Park SP) that construction of the proposed project and the reclamation project will occur simultaneously. This is further evidenced by the two phase construction scheduled outlined in The Park SP as construction of Phase 1 of the proposed project will begin as site reclamation activities move towards the Phase 2 area of the proposed project.



Conceptual Phasing Plan. Refer to Figure 5-1 in the Appendix for a larger copy.

Section 2.0, Environmental Setting, of the EIR states that “the former mine operator was required to provide financial assurance to the City of Irwindale that reclamation activities will be completed on the site as permitted by the Grading Permit. Therefore, this EIR is not required to evaluate the continued filling of the quarry because doing so would be misleading in terms of evaluating the proposed Project, and without informative value to decision-makers and the public.” The former mine operator must complete the scope of work outlined in the grading permit, but there is clearly no restriction preventing the proposed project from beginning construction while the quarry reclamation continues. It is common practice in the construction industry for grading and building permits to be issued simultaneously. There is no mechanism





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preventing construction of the project and the quarry filling from occurring simultaneously and the timelines given in the EIR and Live Oak SP corroborate that the activities will overlap. The EIR and AQA do not adequately represent the project or provide an accurate analysis of site conditions and construction characteristics. The EIR must be revised and recirculated with an accurate Air Quality Analysis to include a “worst case scenario” of overlap with the quarry filling activity in order to comply with CEQA’s requirements for meaningful disclosure (CEQA § 21003(b)).

I-4  
CONT.

The AQA indicates that the CalEEMod modeling sheets do not accurately reflect the components of the proposed project. The EIR states the project proposes 1,550,000 s.f. of building space, of which 15,000 s.f. of commercial uses is required and 98,600 s.f. of commercial uses is permitted and a maximum of 1,451,400 s.f. of industrial uses are permitted. A 3,000 s.f. coffee shop *with* drive-through window is proposed but is analyzed in CalEEMod as fast food restaurant *without* drive-through because “CalEEMod does not provide a separate land use subtype category for Coffee Shop with Drive-Through.” It is not appropriate to categorize any type of restaurant, coffee shop, etc with a drive-through as a land use category without a drive-through. The CalEEMod and AQA must be revised to include the coffee shop with drive-through under the fast food restaurant with drive-through land use category. The convenience market for the gas station is also stated to be 2,000 s.f. in the EIR while it was input as only 1,129 s.f. in CalEEMod for analysis.

I-5

The CalEEMod analysis did not include analysis of any surface parking lots at the project site. Surface parking is defined as a separate land use in the CalEEMod User Guide<sup>1</sup> and must be entered into the analysis separately. The CalEEMod output sheets indicate that 3.79 acres of Other Asphalt Surfaces were included for analysis, but CalEEMod defines Other Asphalt Surfaces as “an asphalt area *not* used as a parking lot (e.g., long driveway, basketball court, etc.).” The AQA must be revised to include analysis of all surface parking at the project site. The number of parking spaces required for the project can be reasonably estimated by applying the parking standards contained within the draft The Park @ Live Oak SP to the land use mix proposed in the EIR.

I-6

Additionally, The Park @ Live Oak Specific Plan permits industrial retail sales in all 7 Planning Areas (Page 22, The Park @ Live Oak Specific Plan). The AQA and Traffic Impact Analysis (TIA) do not account for the additional trips and environmental impacts generated by permitting each industrial user to also function as a retail business. The industrial uses will not only

I-7

<sup>1</sup> CalEEMod User Guide [http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01\\_user-39-s-guide2016-3-1.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2)



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generate employees and truck loading/unloading but also retail customers. There is also no maximum square footage of retail space within an industrial building listed in the SP. The retail customer emissions are not captured in the AQA.

I-7  
CONT.

Further, the inaccuracy of the land use mix in the TIA results in inaccuracy on the project trip summary in the CalEEMod sheets since the AQA relies on data from the TIA. For example, the TIA does not include any refrigerated warehousing in its analysis. The AQA methodology does not explain how it generated an operational average daily trip (ADT) rate for the refrigerated warehouse land use included in the AQA. Additionally, the TIA includes only 8,700 s.f. of fast food restaurant with drive-through while the AQA and EIR state there will be 27,700 s.f. of this land use. The EIR and AQA must be revised to properly categorize each use within the proposed project to adequately and accurately estimate the potentially significant air quality impacts. They must be included in a recirculated EIR for public review and comment.

I-8

Section 9.28.110 of the Irwindale Municipal Code permits construction activity between the hours of 7:00 A.M. and 7:00 P.M. Monday through Saturday. The EIR does not provide a “worst-case scenario” analysis of construction equipment emitting pollutants for the legal 12 hours per day, 6 days per week. It is legal for construction to occur for much longer hours (12 hours per day permitted while 8 hours per day analyzed) and an additional day (6 days per week permitted while 5 days per week analyzed) than modeled in the Air Quality Analysis. The EIR must be revised and recirculated for public review with a revised Air Quality modeling to account for these legally possible longer construction days and increased number of construction days. If shorter hours of construction are proposed, this must be included as an enforceable mitigation measure with field verification by an enforcement entity of the lead agency (CEQA § 21081.6 (b)).

I-9

It must also be noted the EIR does not include for analysis relevant environmental justice issues in reviewing potential impacts, including cumulative impacts from the proposed project. The EIR does not present any environmental justice analysis even though it is required by the City of Irwindale General Plan:

*Resource Management Element*

Policy 19: 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.

I-10



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This is especially significant as the surrounding community is highly burdened by pollution. According to CalEnviroScreen 3.0, 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 95 percent of the rest of the state overall<sup>2</sup>. The project's census tract is in the 100th percentile for pollution burden, meaning it is more polluted than all other 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 has a higher burden of ozone than 74 percent of the state, more ozone burden than 85 percent of the state, and worse drinking water and more issues with solid waste than 99 percent of the state.

I-11

Further, the project's census tract is a diverse community including 91 percent Hispanic residents and especially vulnerable to the impacts of pollution. The community has a very high rate of linguistic isolation, meaning 46 percent of households speak little to no English. The community has very high unemployment rates (90 percent compared to the rest of the state), which is an indication that they may lack health insurance or access to medical care. Additionally, the surrounding community has a higher proportion of babies born with low birth weights than 82 percent of the state, which makes those children more vulnerable to asthma and other health issues.

I-12

#### 4.3 Energy

The EIR states the project is consistent with RME Policy 11 of the City of Irwindale General Plan because it "promotes non-vehicular transportation and has the potential to reduce vehicle miles traveled." However, the EIR does not provide supporting details regarding how the project promotes non-vehicular transportation. Section 2.5.10 of the EIR states "field observations indicated that there is nominal pedestrian and bicycle activity in the area (Urban Crossroads, Inc., 2018f, p. 52)" and "The nearest bike path/lane to the project site is located approximately 0.2 mile to the east-northeast in Arrow Highway." The EIR does not discuss any project design features that support non-vehicular transportation such as connecting to existing bicycle infrastructure, providing bicycle parking spaces, adding a public transit stop to the property, etc to demonstrate that the project "promotes non-vehicular transportation". The design of the project, especially the proposed 30,000 s.f. of fast food restaurants with drive-through, demonstrate that the project promotes vehicle travel and is a destination for vehicles. The EIR

I-13

<sup>2</sup> CalEnviroScreen 3.0, California Office of Environmental Health Hazard Assessment <https://oehha.ca.gov/calenviroscreen>



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must be revised to provide supporting evidence for this statement in order to comply with CEQA's requirements for meaningful disclosure (CEQA § 21003(b)).

I-13  
CONT.

**4.8 Land Use and Planning**

The General Plan Land Use compatibility table is misleading to the public and decision makers. For example, the EIR states the project complies with Resource Management Element 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."

I-14

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 the project's total annual GHG emissions per year is estimated to be 46,531.47 MTCO<sub>2</sub>e per year, which is fifteen times greater than the SCAQMD's threshold of 3,000 MTCO<sub>2</sub>e per year.

Further, the Resource Management Element of the General Plan provides the following guidance for the reuse of quarry lands<sup>3</sup>:

"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."

I-15

The EIR does not address this portion of the RME. The EIR also states it is consistent with CDE Policy 17:

"The City of Irwindale will continue to encourage a balance of commercial uses to avoid an over-concentration of uses to best serve the residents, employee population, and business community."

<sup>3</sup> Resource Management Element, Irwindale General Plan. (page 104) <http://ci.irwindale.ca.us/DocumentCenter/View/38>





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The proposed General Plan Amendment to change the General Plan Land Use designation from Regional Commercial to Commercial/Industrial will permit the project proposal of 1,451,400 s.f. of industrial uses and only 98,600 s.f. of commercial uses. Further, commercial uses in the Commercial/Industrial designation are restricted to a maximum FAR of 0.5 to 1.0 while industrial uses are permitted an FAR of 1.0 to 1.0. The proposed General Plan Amendment will limit commercial uses at the site instead of encouraging a balance of commercial uses in the predominantly industrial area. A greater mix of uses inherently works to address adverse environmental impacts by reducing VMT via closer access to services, which is discussed in the General Plan EIR. The GPA will reduce the mix of uses by increasing the amount of permitted industrial uses on the site and limiting the amount commercial uses permitted on the site.

I-15  
CONT.

**4.11 Transportation**

The Traffic Impact Analysis (TIA) indicates that the modeling utilized for analysis does not accurately reflect the components of the proposed project. The TIA includes only 882,300 s.f. of warehousing (no refrigeration) while the EIR states the project will include 907,300 s.f. of warehousing (no refrigeration). Also, the TIA completely excludes the 387,500 s.f. of refrigerated warehouse from its analysis. The TIA includes only 8,700 s.f. of fast food restaurant with drive-through while the AQA and EIR state there will be 27,700 s.f. of this land use. The TIA analyzes 38,000 s.f. of fast food restaurant without drive-through even though the AQA and EIR state there will only be 3,000 s.f. of this use to account for the coffee shop with drive-through (which also misrepresents potentially significant environmental impacts, see section 4.2 above). The TIA misrepresents the proposed project and skews the project trip generation rates which are utilized in the AQA. The TIA must be revised and included in a recirculated EIR for public review and comment. A project-specific TIA which includes all aspects of the proposed project must be conducted in order to adequately analyze the potentially significant traffic impacts generated by all components of the proposed project.

I-16

**6.0 Alternatives**

**6.2.2 General Plan Consistency Alternative**

The General Plan Consistency Alternative (GPCA) was rejected for analysis because it “would be likely to substantially increase several of the potential environmental impacts of the proposed project.” The EIR states this is due to the Regional Commercial Floor Area Ratio of 2.0 to 1.0, which would permit more development of commercial uses than the 98,600 s.f. proposed as part of the project. However, this is misleading as the project’s 1,451,400 s.f. of industrial uses

I-17



COMMENT LETTER I

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generates heavy truck traffic, which come with greater mobile emissions and are so large they must be counted in passenger car equivalents. Further, the EIR again does not include information here regarding the ability of all industrial buildings in the SP area to have commercial retail sales at their buildings without a maximum s.f. of industrial retail sales outlined in the SP. Thus, every industrial building in the SP can also function as a commercial building. The EIR's statement that the GPCA would generate more impacts than the proposed project is contradicted by elements of the project that are omitted from analysis, which does not comply with CEQA's requirements for meaningful disclosure (CEQA § 21003(b)). The revised EIR must include the GPCA alternative in order to meaningfully disclose the potentially significant and unavoidable environmental impacts associated with the General Plan Amendment required to implement the proposed project.

**Conclusion**

For the foregoing reasons, GSEJA believes the EIR is flawed and an amended EIR must be prepared for the proposed project and recirculated 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.

Sincerely,

Board of Directors  
Golden State Environmental Justice Alliance

I-17  
CONT.  
I-18  
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**RESPONSES TO COMMENT LETTER I:  
Golden State Environmental Justice Alliance**

- I-1** As a commenting party on the DEIR, Golden State Environmental Justice Alliance will receive these responses to comment and the FEIR, and will be notified by the City of Irwindale when associated CEQA compliance documents and public notices pertaining to The Park @ Live Oak project are available.
- I-2** The commenter's summary of the Project Description presented in DEIR Section 3.0 is accurate.
- I-3** The commenter is correct that construction of The Park @ Live Oak may overlap with reclamation activities occurring on the site. Refer to The Park @ Live Oak Specific Plan Chapter 5, Section D, which indicates that portions of Planning Areas 1, 1A, 3, and 3A and associated infrastructure are expected to develop as the first phase. Reclamation activities may occur on other portions of the property during the construction of the Project's first phase of development. However, it is important to note that the reclamation activities are not a part of the proposed Project. As explained in EIR Subsections S.2.2 (p. S-3), 1.2 (p. 1-2), 1.3 (p. 1-3), 1.4 (p. 1-4), 2.5.1 (p. 2-9) and elsewhere throughout the EIR, the EIR is not required to evaluate the ongoing reclamation activities occurring on the property, which are permitted and lawfully occurring pursuant to City of Irwindale Grading Permit No. 05061504220003, and will continue to occur regardless of whether or not the proposed Project is approved. The ongoing landfilling is part of the baseline existing condition and not part of the proposed Project. As such, the analysis in DEIR Subsection 4.2 and supported by an Air Quality Impact Analysis (AQIA) appended to the DEIR as Technical Appendix B1 correctly evaluate impacts of the proposed Project. Reclamation is currently occurring over nearly the totality of the Project site, and as reclamation activities complete, air pollutant emissions associated with that activity would commensurately reduce, thereby improving the baseline air quality as compared to existing conditions.

For information disclosure purposes and to demonstrate responsiveness to this comment, Urban Crossroads conducted air quality calculations for the reclamation activities currently occurring on the Project site, taking into consideration the equipment fleet currently being used for such activities. A technical memorandum prepared by Urban Crossroads addressing this topic and dated September 24, 2019, is included as Attachment "B" to these responses to comments. As calculated by Urban Crossroads, the existing reclamation activity produces the following daily air pollutant emissions.

| Year                    | Emissions (pounds per day) from Landfilling Activities |                 |        |                 |                  |                   |
|-------------------------|--------------------------------------------------------|-----------------|--------|-----------------|------------------|-------------------|
|                         | VOC                                                    | NO <sub>x</sub> | CO     | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Maximum Daily Emissions | 24.81                                                  | 322.31          | 212.72 | 0.65            | 33.92            | 19.91             |



As summarized in the Technical Appendix B-3 of the EIR, the Project is within the jurisdiction of the SCAQMD. The SCAQMD develops comprehensive plans and regulatory programs for the region to attain federal standards by dates specified in federal law. The agency is also responsible for meeting state standards by the earliest date achievable, using reasonably available control measures. SCAQMD rule development through the 1970s and 1980s resulted in dramatic improvement in Basin air quality. Nearly all control programs developed through the early 1990s relied on (i) the development and application of cleaner technology; (ii) add-on emission controls, and (iii) uniform CEQA review throughout the Basin. Industrial emission sources have been significantly reduced by this approach and vehicular emissions have been reduced by technologies implemented at the state level by CARB. More detailed information on the regional air quality improvement is presented in the DEIR's Appendix B-3 as stated above.

The SCAQMD is the lead agency charged with regulating air quality emission reductions for the entire South Coast Air Basin. SCAQMD created Air Quality Management Plans (AQMPs) which represent a regional blueprint for achieving healthful air on behalf of the 16 million residents of the South Coast Basin. The 2012 AQMP states, "the remarkable historical improvement in air quality since the 1970's is the direct result of Southern California's comprehensive, multiyear strategy of reducing air pollution from all sources as outlined in its AQMPs" (Urban Crossroads, 2019d). Part of the control process of the SCAQMD's duty to greatly improve the air quality in the Basin is the uniform CEQA review procedures required by SCAQMD's CEQA Handbook. The single threshold of significance used to assess direct and cumulatively considerable impacts in the Project's EIR as recommended by the SCAQMD has in fact "worked" across the Air Basin as evidenced by the track record of the air quality in the Basin dramatically improving over the course of the past decades. As stated by the SCAQMD, the SCAQMD's thresholds of significance are based on factual and scientific data and are therefore appropriate thresholds of significance to use for the Project.

The table below provides a summary of emissions associated with the Project as well as the existing reclamation activities.

|                                                                                  | Emissions (pounds per day) |                 |        |                 |                  |                   |
|----------------------------------------------------------------------------------|----------------------------|-----------------|--------|-----------------|------------------|-------------------|
|                                                                                  | VOC                        | NO <sub>x</sub> | CO     | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Maximum Project Construction Emissions<br>(as reported in the DEIR, Table 4.2-6) | 50.55                      | 85.39           | 75.66  | 0.23            | 14.31            | 6.75              |
| Existing Reclamation Operations                                                  | 24.81                      | 322.31          | 212.72 | 0.65            | 33.92            | 19.91             |
| Project + Existing Reclamation Operations                                        | 75.36                      | 407.70          | 293.38 | 0.88            | 48.23            | 26.66             |
| Project's Incremental Contribution                                               | 50.55                      | 85.39           | 75.66  | 0.23            | 14.31            | 6.75              |
| SCAQMD Direct and Cumulatively Considerable Significance Threshold               | 75                         | 100             | 550    | 150             | 150              | 55                |



- As shown in the table, the Project's incremental contribution to air pollutant emissions is less than significant and less than cumulatively considerable based on the SCAQMD's significance threshold. Lastly, it should be noted that any potential overlap of reclamation activities and Project construction would be short-term in nature and cease upon completion of the respective phase of construction or completion of the reclamation operations.
- I-4** Refer to Response I-3, which explains that reclamation activities occurring on the site and Project-related construction activities have the potential to overlap. Nonetheless, the reclamation activities are lawfully occurring, are part of the existing condition and environmental baseline, and are not a part of the proposed Project. The tables provided in Response I-3 quantify the collective air pollutant emissions for information disclosure, and do not change the significance conclusion drawn by the Draft EIR that the Project's construction-related impacts will be less than significant and less than cumulatively considerable. Further, a memorandum prepared by Urban Crossroads, dated November 11, 2019, was prepared and is included as Attachment "C" to these responses to comments, which verifies that construction-related traffic would not create any additional impacts beyond those disclosed in the DEIR for the Project's operation. The City has opted to change the timing trigger for implementation of Mitigation Measure MM 4.11-5.d and Mitigation Measures MM 4.11-6.c, d, e, and g from building permit to grading permit, to address construction-related traffic. CEQA Guidelines §15088.5 describes the conditions under which an EIR that was circulated for public review is required to be re-circulated for additional public review and comment. There were no comments made in this letter or in other letters commenting on the DEIR that necessitates recirculation of the DEIR in compliance with CEQA.
- I-5** The EIR analyzes a reasonably foreseeable mix of commercial uses that are expected to result from implementation of The Park @ Live Oak Specific Plan. Although the "Coffee Shop with Drive Through" land use category identified in the Project's Traffic Impact Analysis (TIA) (EIR Technical Appendix I1) was modeled as "Fast Food Restaurant Without Drive Through" in the AQIA (Technical Appendix B1) (because it was the closest CalEEMod subtype category to "Coffee Shop with Drive Through"), the number of vehicular trips associated with the 3,000 s.f. of building space modeled in the AQIA is consistent with the number of trips modeled in the Project's TIA for 3,000 s.f. of "Coffee Shop with Drive Through". The potential of vehicles to idle in a drive through lane is not treated any differently in CalEEMod as vehicles traveling on the road and idling when stopped at an intersection or in traffic. According to Urban Crossroads, the author of the TIA and the AQIA, even if the air quality model was adjusted to account for the slight operational differences between a coffee shop with drive through and a fast food restaurant without drive through, there would be no substantive changes in the air emission quantities nor would it change the findings identified in the AQIA or the DEIR because the majority of air emissions from this land use category are a direct result of mobile sources (e.g.



vehicular trip generation – which is based off the trip rates for “Coffee Shop with Drive Through”).

Similarly, the square footage of the Gas Station building that was modeled in the AQIA is immaterial because the model outputs for gas stations are primarily based on traffic volume, and traffic volume is based on the number of fueling pumps, not building size. The AQIA is thus consistent with the number of vehicle trips calculated for the use in the TIA, which analyzed an 8-vehicle fueling pump (VFP) Gas Station. Even if the square footage of the Gas Station with Convenience Market building were to be adjusted in the AQIA to include an additional 871 s.f. of building space (the difference of 2,000 s.f. and 1,129 s.f. as noted in the comment), this would not result in any substantive change in air emissions identified in the AQIA or DEIR because 871 s.f. represents only five-one-hundredth of one percent (0.05%) of the Project’s proposed 1,500,000 s.f. of building space, and as noted above, a large majority of the emissions associated with a Gas Station with Convenience Market use are from mobile sources (vehicle tailpipes), , and not sources associated with operation of the building (lighting, heating and cooling systems, etc.).

**I-6** The land uses modeled in the AQIA reflect the construction of the entire Project site (78.32 acres). At the time the AQIA (EIR Technical Appendix B1) was prepared, information regarding the number of parking spaces was not readily available and there is still no way to accurately estimate the amount of parking lot surface area coverage that will be constructed on the Project site based on the parking standards given in the Specific Plan, as the parking standards are based on the ultimate building use type mix and building size. Regardless, as an example to show that the 3.79 acres assumed in the AQIA is a reasonable assumption, the following land use mix would result in the need for 803 parking spaces, covering 3.15 acres of surface parking area, exclusive of drive isles and truck courts. Refer to The Park @ Live Oak Specific Plan Table 3-8 for parking standards.

- o 1,435,000 s.f. industrial use, at 1 space per 10,000 s.f. = 143 spaces
- o 100,000 s.f. of office use, at 1 space per 250 s.f. = 400 spaces
- o 15,000 s.f. of restaurant use, at 1 space per 100 s.f. (for the first 4,000 s.f.) and 1 additional space for each 50 s.f. above 4,000 s.f. = 260 spaces

Based on a standard parking space size of 9 feet by 19 feet (171 s.f.) as specified in the Specific Plan, Tables 3-2 through 3-7, 803 parking spaces would cover 137,313 s.f., or 3.15 acres. While it is recognized that there are in infinite number of building use and size combinations that would result in different numbers of required parking spaces, the AQIA and DEIR made a good faith effort to include parking surface area as an input to the air emissions modeling.

As shown below, the difference in emissions quantified using Other Asphalt Surfaces (as modeled in the DEIR) versus if the “Parking Lot” land use were to be used in the modeling would be negligible and would not change the findings presented in the AQIA or DEIR. The model outputs for the “Other Asphalt Surfaces” and “Parking Lot” are contained in Attachment “B” to these Responses to Comment.



| Year                                                 | Emissions (pounds per day) |                 |       |                 |                  |                   |
|------------------------------------------------------|----------------------------|-----------------|-------|-----------------|------------------|-------------------|
|                                                      | VOC                        | NO <sub>x</sub> | CO    | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| <b>Other Asphalt Surfaces as modeled in the DEIR</b> |                            |                 |       |                 |                  |                   |
| Maximum Daily Emissions                              | 5.93                       | 68.18           | 37.85 | 0.08            | 23.36            | 12.95             |
| <b>Parking Lot</b>                                   |                            |                 |       |                 |                  |                   |
| Maximum Daily Emissions                              | 7.50                       | 68.27           | 48.84 | 0.12            | 23.36            | 12.95             |

It should also be noted that “Parking Lot” in this context does not generate any additional vehicle trips and would therefore not be a source of operational emissions; as such, the operational emissions presented in the AQIA and DEIR would not change. The addition of this analytical information is not significant new information and does not change the conclusions reached by the DEIR. The DEIR circulated for public review was fundamentally and basically adequate, and as such, recirculation of the DEIR is not warranted due to the correction of these numerical values as set forth in §15088.5 of the State CEQA Guidelines.

**I-7** The land use assumptions used in the TIA are based on a reasonable mix of uses that will be allowed by The Park @ Live Oak Specific Plan. The Park @ Live Oak Specific Plan has been revised to permit industrial retail sales only as an accessory use, and limited to no more than 15% of the building’s square footage. This type of accessory use is included in the overall trip rate for the building. Further, because The Park @ Live Oak Specific Plan is a policy document that permits a range of industrial/business park and commercial uses, and no building footprints or specific building operators are proposed at this time, it would be highly speculative at this juncture to definitively determine the exact mix of building types and building users that will occupy the Project site. For this reason, the EIR includes Mitigation Measure 4.11-6, which is a performance based measure that obligates the Project Applicant to prepare, prior to the issuance of each building permit for future implementing development projects, a trip generation calculation, trip distribution exhibit, and additional analytical traffic analyses so that the City of Irwindale Public Works Department can: a) confirm that the traffic that will be generated specific to the building is within the EIR’s scope of analysis, b) determine which of the mitigation measures identified in the DEIR are applicable to the proposed building, and c) determine sufficient intersection and driveway geometrics and lane storage and turn lane capacity needs for the particular building. With Mitigation Measure 4.11-6 in place, there is no reason to evaluate every conceivable building user mix, including but not limited to industrial retail sales which may or may not ever be established in the Project.

**I-8** Refer to Response I-7. In summary, Mitigation Measure 4.11-6 is a performance-based measure that will ensure that the traffic that will be generated specific to each building developed in The Park @ Live Oak is within the EIR’s scope of analysis. Specific to the land use types mentioned in this comment, it should be noted that although the AQIA’s (EIR Technical Appendix B1) land use assumptions identify 8,700 s.f. of Fast-Food





Restaurant With Drive Through and 19,000 s.f. of Fast-Food Restaurant Without Drive Through, the traffic trips were modeled in the AQIA are consistent with the number of trips modeled in the TIA (EIR Technical Appendix I1). As explained in Response I-5, even if the AQIA was revised to separate 8,700 s.f. of Fast-Food Restaurant With Drive Through and 19,000 s.f. of Fast-Food Restaurant Without Drive Through, there would be no substantive changes in the emission quantities nor would it change the findings identified in the AQIA (EIR Technical Appendix B1) or DEIR because the majority of emissions from this land use category are a direct result of mobile sources, *i.e.*, trip generation from the TIA.

The number of trips associated with a cold storage warehouse is less than or comparable to the number of trips that would be generated by high-cube fulfillment center, warehouse, or manufacturing use. As such, the TIA's (EIR Technical Appendix I1) project description summary, and specifically Footnote 1 on TIA p. 1, recognizes that up to 387,500 s.f. may be developed as a High-Cube Warehouse With Cold Storage land use in lieu of High-Cube Fulfillment Center Warehouse use or a combination of High-Cube Fulfillment Center Warehouse, Warehousing, and/or Manufacturing uses. As such, for purposes of the AQIA (EIR Technical Appendix B1), up to 387,500 s.f. were modeled separately as a High-Cube Warehouse With Cold Storage land use – since the AQIA and GHG modeling would need to reflect the higher electricity demand from a Cold Storage use. The total trips generated by the modeled land uses in the AQIA (EIR Technical Appendix B1) are consistent with the TIA (EIR Technical Appendix I1) therefore the correct number of passenger vehicles and trucks was modeled in the AQIA and EIR and no changes are required.

- I-9** Table 3-2 of the EIR and Table 3-3 of the AQIA (EIR Technical Appendix B1) identifies the construction equipment assumptions used in the analysis. While the commenter is correct that the City of Irwindale Municipal Code Section 9.28.110 (b) states that construction is permitted between 7:00AM and 7:00PM, the identified construction equipment would not be used during every hour of the day. Rather, the AQIA (EIR Technical Appendix B1), consistent with industry standards and typical construction practices, assumes that each piece of equipment listed in AQIA Table 3-3 and Table 3-2 of the EIR would operate up to 8 total hours per day, or approximately 2/3 of the period during which construction activities are allowed pursuant to Municipal Code Section 9.28.110 (b). For example, during fine grading the operation water trucks would not operate continuously over a 12-hour period, but would instead be used as necessary to minimize fugitive dust. In fact, most pieces of equipment likely would operate for fewer hours per day than indicated in Table 3-3 of the AQIA and Table 3-2 of the EIR. For further substantiation that 8 hours of construction equipment use per day is a reasonable assumption, the California Emissions Estimator Model (CalEEMod) which was developed by several air districts in California, including the South Coast Air Quality Management District (SCAQMD) which is the authority responsible for bringing the South Coast Air Basin's air quality into attainment with federal and State standards, includes a default assumption of 8 hours of construction activity. The 8 hours of construction equipment



activity assumed in CalEEMod is based on a construction survey conducted by the SCAQMD, referenced in Appendix E1 of CalEEMod's Appendix E: Technical Source Documentation (CAPCOA, 2017). As such, use of the 8-hour construction day for equipment use is reasonable, consistent with industry-standard practice, and supports uniform CEQA review for all development projects based on the CalEEMod default value. With respect to construction potentially occurring 6 days per week, the South Coast Air Quality Management District (SCAQMD) thresholds of significance are based on daily emissions; thus, air quality effects during weekends would be the same as during the normal work week. Accordingly, the City finds that the assumptions used in the Project's AQIA (EIR Technical Appendix B1) and the EIR properly disclose a reasonable, and likely overstated evaluation of the Project's potential impacts due to air quality emissions; no revision to the AQIA or DEIR is warranted pursuant to this comment.

- I-10** The health of residents near the Project site would not be significantly and adversely impacted by the Project as demonstrated in Draft EIR Subsection 4.2; therefore, an environmental justice analysis is not warranted. The Project site is surrounded by non-residential uses, including a mining pit to the north/northwest, the Irwindale Speedway to the south/southwest, and the I-605 Freeway to the east, immediately beyond which are non-residential uses. Regardless, a Mobile Source Health Risk Assessment (HRA) (EIR Technical Appendix B2) was conducted in support of The Park @ Live Oak Specific Plan EIR to determine the lifetime cancer risk from the Project-generated toxic air contaminants (TAC) emissions. Both the HRA (EIR Technical Appendix B2, p. 1) and the EIR (p. 4.2-19) identified sensitive receptors as being located approximately 1,900 feet north of the Project site. The HRA concluded that at the maximally exposed individual receptor, the maximum incremental cancer risk attributed to the Project TAC's air emissions is calculated to be 0.54 in one million using an 80<sup>th</sup> percentile breathing rate. Also, see Response F-7 which reports that the risk would be slightly higher at 0.59 in one million using a 95<sup>th</sup> percentile breathing rate. These risk values are considered to be less than significant because they fall far below the SCAQMD's threshold of 10 in one million. At the same receptor, the non-cancer risks attributable to the Project were calculated to be 0.0002, and far less than the SCAQMD significance threshold of 1.0. The EIR and HRA conclude that the Project will not pose a significant human health or cancer risk to the nearby residences. Therefore, the health of residents near the Project site would not be significantly and adversely impacted and an environmental justice analysis is therefore not required.
- I-11** Refer to Response I-10. The commenter accurately summarizes information published in the CalEnviroScreen 3.0 tool for Census Tract 6037404600.
- I-12** Although the commenter does not disclose the source of the demographic information contained in this comment, the City of Irwindale generally concurs with the demographic description of the surrounding area related to ethnicity based on Census Tract 4046, 2017



- statistics<sup>3</sup>, with exception to the unemployment rate and the commenter's unsubstantiated speculation about access to health insurance and medical care. Based on 2017 reported data, Irwindale's unemployment rate is 6.7%<sup>4</sup>, not 90% as incorrectly purported by this comment.
- I-13** The comment asserts that the DEIR does not provide enough detail about the Project's non-vehicular circulation design features. Although the Project site is a destination for motorized vehicles, which is an inherent characteristic of industrial and commercial business parks, the Project does include design features to encourage non-motorized travel. As required by The Park @ Live Oak Specific Plan, the Project includes the provision of meandering sidewalks along Arrow Highway and Live Oak Avenue and a curb-adjacent sidewalk along proposed Street A. In addition, the provision of bicycle parking at each of the Project site's future buildings is required as part of the California Green Building Standards Code, Title 24, Section 5.106.4, pertaining to non-residential structures.
- I-14** Resource Management Element (RME) Policy 11 not only includes language discussing the reduction of GHG in compliance with AB 32, but also the support for development with building standards that would reduce energy and water waste. Although the Project will result in a significant and unavoidable GHG impact, the Project is consistent with RME Policy 11 as it attributes to compliance with the California Green Building Standards Code (CALGreen) to minimize water and energy use. The EIR also gives recommended mitigation measures in Subsections 4.2, Air Quality, and 4.5, Greenhouse Gas Emissions, to further be consistent with RME Policy 11. Policy 11 does not specify that GHG impacts must be less than significant compared to SCAQMD CEEQA significance thresholds in order to achieve consistency with the Policy.
- I-15** The City of Irwindale and Project Applicant have determined that there is not a demand for ±87 acres of commercial uses on the Project site. In order for new commercial use to have an enduring chance of economic success, they require a high concentration of residents in the nearby area to support those uses, and such a concentration does not exist around the site. There is not enough pass-by traffic along either Arrow Highway or Live Oak Avenue in this location to support ±87 acres of commercial use (Project Applicant, 2019). The Park @ Live Oak provides for a mix of commercial and industrial/business park uses, with commercial uses concentrated along Arrow Highway and directly across from the entrance to the Irwindale Speedway, which are the locations on the site that have the best chance to attract commercial uses. EIR Subsection 6.2.2, discusses a General Plan Consistency Alternative (GPCA), which considers development of the site with land uses that are consistent with property's "Regional Commercial" land use designation. In comparison to the proposed Project, the GPCA would generate more vehicular trips compared to the mix of industrial, business park, and commercial land uses proposed by

<sup>3</sup> <https://censusreporter.org/profiles/14000US06037404600-census-tract-4046-los-angeles-ca/>

<sup>4</sup> <https://workforce.lacounty.gov/wp-content/uploads/2017/03/Unemployment-Rate-by-District-January-2016-17.pdf>



The Park @ Live Oak Specific Plan, also resulting in increased vehicular-related increase impacts to air quality, GHG emissions, noise, and traffic.

- I-16** The Park @ Live Oak Specific Plan is a policy document that will allow a range of building types in two land use categories: industrial/business park and commercial. No building footprints are proposed at this time and the exact uses that will occupy the site are not known at this time. CEQA requires that reasonable assumptions be made to disclose the likely environmental effects of a project. In the case of the EIR and its TIA (EIR Technical Appendix I1), reasonable assumptions were made. The TIA evaluates a mix of uses permitted by The Park @ Live Oak Specific Plan that provides a high volume of trip generation, in an effort to conduct a conservative analysis and overstate, as opposed to understate, potential traffic impacts. The TIA (EIR Technical Appendix I1) assumes 412,500 s.f. of High-Cube Fulfillment Warehouse, 630,900 s.f. of High-Cube Transload and Short-Term Storage Warehouse (Without Cold-Storage), 251,400 s.f. of Warehouse, 54,600 s.f. of General Light Industrial, and 102,000 s.f. of Manufacturing, for a total of 1,451,400 s.f. of industrial/business park uses. The TIA also assumes 69,500 s.f. of general retail use, 8,700 s.f. of Fast-Food Restaurant with Drive-Thru use, 19,000 s.f. of Fast-Food Restaurant without Drive-Thru use, 3,000 s.f. of Coffee Shop, and an 8-vehicle fueling position gasoline service station with convenience market and carwash. These commercial uses are high volume trip generators, and present a reasonable assumption and likely overstated volume of vehicle trips from this use type.
- I-17** As shown by EIR Table 4.11-15, of the Project's calculated 14,607 total vehicle trips, 9,421 (63.2%) are attributed to the commercial land use category, yet the commercial land uses accounts for only approximately 6% of the total building square footage. If the entire site was developed with retail uses as would be allowed under a General Plan Consistency Alternative, the resulting traffic would be 39,364 daily trips, as shown in Table A on the following page, which is more than 2.5 times the traffic volume than would occur under the proposed Project. As another example, if the entire site were developed with an equal mixture of office, retail, and manufacturing uses, as also would be allowed under a General Plan Consistency Alternative, the resulting traffic would be 27,394 PCE trips, as shown in Table B on the following page, which is nearly double the traffic volume that would occur under the proposed Project. Regardless of the mix of passenger cars and trucks, the City has rejected the General Plan Consistency Alternative for increased traffic impacts and other reasons as will be specified in the EIR's Findings and Statement of Overriding Considerations. Also refer to Responses I-7 and I-18.
- I-18** Refer to Response I-7, which explains that The Park @ Live Oak Specific Plan has been revised to permit industrial retail sales only as an accessory use, and limited to no more than 15% of the building's square footage. Further, there is no circumstance under which the Project will generate more traffic than assumed by the EIR, because the EIR includes Mitigation Measure 4.11-6, which is a performance based measure that obligates the Project Applicant to prepare, prior to the issuance of each building permit for future



implementing development projects, a trip generation calculation, trip distribution exhibit, and additional analytical traffic analyses so that the City of Irwindale Public Works Department can, among other things, confirm that the traffic that will be generated specific to the building is within the EIR's scope of analysis.

**I-19** The inclusion of a General Plan Consistency Alternative is not required, because it will be more environmentally impactful from a traffic perspective than would the proposed Project. Refer to Response I-17, which explains that traffic volumes from a General Plan Consistency Alternative would be nearly double that of the proposed Project.

**I-20** There is no information provided in these comments or responses thereto that would warrant recirculation of the DEIR. The DEIR circulated for public review was fundamentally and basically adequate, and as such, recirculation of the DEIR is not warranted set forth in §15088.5 of the State CEQA Guidelines.

**I-21** As a commenting party on the DEIR, Golden State Environmental Justice Alliance will receive these responses to comment and the FEIR, and will be notified by the City of Irwindale when associated CEQA compliance documents and public notices pertaining to The Park @ Live Oak project are available.

**Table A**

**Project Trip Generation Summary**

| Land Use                           | Units <sup>2</sup> | ITE LU Code | AM Peak Hour |       |       | PM Peak Hour |       |       | Daily  |
|------------------------------------|--------------------|-------------|--------------|-------|-------|--------------|-------|-------|--------|
|                                    |                    |             | In           | Out   | Total | In           | Out   | Total |        |
| Trip Generation Rates <sup>1</sup> |                    |             |              |       |       |              |       |       |        |
| Retail <sup>4</sup>                | TSF                | 820         | 0.340        | 0.210 | 0.550 | 1.040        | 1.130 | 2.170 | 19.430 |

| Land Use                                                             | Quantity  | Units <sup>2</sup> | AM Peak Hour |     |       | PM Peak Hour |        |        | Daily   |
|----------------------------------------------------------------------|-----------|--------------------|--------------|-----|-------|--------------|--------|--------|---------|
|                                                                      |           |                    | In           | Out | Total | In           | Out    | Total  |         |
| General Plan Land Use <sup>7</sup> Trip Generation vs. Traffic Study |           |                    |              |     |       |              |        |        |         |
| Retail                                                               | 3,410.748 | TSF                | 1,160        | 716 | 1,876 | 3,547        | 3,854  | 7,401  | 66,272  |
| Internal Capture                                                     |           |                    | -116         | -72 | -188  | -355         | -385   | -740   | -6,628  |
| Pass-By (34% PM/Daily):                                              |           |                    | 0            | 0   | 0     | -1,085       | -1,085 | -2,170 | -20,280 |
| TOTAL TRIPS <sup>5</sup>                                             |           |                    | 1,044        | 644 | 1,688 | 2,107        | 2,384  | 4,491  | 39,364  |
| TOTAL TRIPS FROM TRAFFIC STUDY (PCE) <sup>6</sup>                    |           |                    | 863          | 417 | 1,280 | 625          | 1,019  | 1,644  | 15,867  |
| VARIANCE                                                             |           |                    | 181          | 227 | 408   | 1,482        | 1,365  | 2,847  | 23,497  |

<sup>1</sup> Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

<sup>2</sup> TSF = thousand square feet

<sup>3</sup> Vehicle Mix Source: Truck mix (by axle type) source from City of Fontana Truck Trip Generation Study (August 2003). PCE rates are per SBCTA.

<sup>4</sup> Trip generation rates based on the regression equation.

<sup>5</sup> TOTAL NET TRIPS = Passenger Cars + Net Truck Trips.

<sup>6</sup> Source: The Park @ Live Oak Traffic Impact Analysis, Urban Crossroads, Inc., December 12, 2018.

<sup>7</sup> Square footage determined based on FAR of 1.0 for 78.3-acre site.





**Table B**

**Project Trip Generation Summary (PCE)**

| Land Use                                                          | Units <sup>2</sup> | ITE LU Code | AM Peak Hour |       |       | PM Peak Hour |       |       | Daily  |
|-------------------------------------------------------------------|--------------------|-------------|--------------|-------|-------|--------------|-------|-------|--------|
|                                                                   |                    |             | In           | Out   | Total | In           | Out   | Total |        |
| Actual Vehicle Trip Generation Rates <sup>1</sup>                 |                    |             |              |       |       |              |       |       |        |
| Office <sup>4</sup>                                               | TSF                | 710         | 0.830        | 0.130 | 0.960 | 0.160        | 0.850 | 1.010 | 1.860  |
| Retail <sup>4</sup>                                               | TSF                | 820         | 0.390        | 0.240 | 0.630 | 1.390        | 1.500 | 2.890 | 27.620 |
| Passenger Car Equivalent (PCE) Trip Generation Rates <sup>5</sup> |                    |             |              |       |       |              |       |       |        |
| Manufacturing <sup>3</sup>                                        | TSF                | 140         | 0.477        | 0.143 | 0.620 | 0.208        | 0.462 | 0.670 | 3.930  |
| Passenger Cars (79.57%)                                           |                    |             | 0.380        | 0.113 | 0.493 | 0.165        | 0.368 | 0.533 | 3.127  |
| 2-Axle Trucks (3.46%) (PCE = 1.5)                                 |                    |             | 0.025        | 0.007 | 0.032 | 0.011        | 0.024 | 0.035 | 0.204  |
| 3-Axle Trucks (4.64%) (PCE = 2.0)                                 |                    |             | 0.044        | 0.013 | 0.058 | 0.019        | 0.043 | 0.062 | 0.365  |
| 4-Axle+ Trucks (12.33%) (PCE = 3.0)                               |                    |             | 0.177        | 0.053 | 0.229 | 0.077        | 0.171 | 0.248 | 1.454  |

| Land Use                                                             | Quantity  | Units <sup>2</sup> | AM Peak Hour |     |       | PM Peak Hour |       |       | Daily   |
|----------------------------------------------------------------------|-----------|--------------------|--------------|-----|-------|--------------|-------|-------|---------|
|                                                                      |           |                    | In           | Out | Total | In           | Out   | Total |         |
| General Plan Land Use <sup>7</sup> Trip Generation vs. Traffic Study |           |                    |              |     |       |              |       |       |         |
| Manufacturing                                                        | 1,136.916 | TSF                |              |     |       |              |       |       |         |
| Passenger Cars:                                                      |           |                    | 432          | 129 | 561   | 188          | 418   | 606   | 3,556   |
| Truck Trips:                                                         |           |                    |              |     |       |              |       |       |         |
| 2-axle:                                                              |           |                    | 28           | 8   | 36    | 12           | 27    | 39    | 232     |
| 3-axle:                                                              |           |                    | 50           | 15  | 65    | 22           | 49    | 71    | 416     |
| 4+-axle:                                                             |           |                    | 201          | 60  | 261   | 87           | 194   | 281   | 1,654   |
| - Truck Trips                                                        |           |                    | 279          | 83  | 362   | 121          | 270   | 391   | 2,302   |
| TOTAL TRIPS (PCE) <sup>5</sup>                                       |           |                    | 711          | 212 | 923   | 309          | 688   | 997   | 5,858   |
| Office                                                               | 1,136.916 | TSF                | 944          | 148 | 1,091 | 182          | 966   | 1,148 | 2,116   |
| Internal Capture                                                     |           |                    | -38          | -41 | -79   | -34          | -126  | -160  | -296    |
| TOTAL TRIPS (PCE) <sup>5</sup>                                       |           |                    | 906          | 107 | 1,012 | 148          | 840   | 988   | 1,820   |
| Retail                                                               | 1,136.916 | TSF                | 443          | 273 | 716   | 1,580        | 1,705 | 3,286 | 31,402  |
| Internal Capture                                                     |           |                    | -41          | -38 | -79   | -126         | -34   | -160  | -1,530  |
| Pass-By (34% PM/Daily):                                              |           |                    | 0            | 0   | 0     | -494         | -494  | -988  | -10,156 |
| TOTAL TRIPS (PCE) <sup>5</sup>                                       |           |                    | 402          | 235 | 637   | 960          | 1,177 | 2,138 | 19,716  |
| TOTAL TRIPS (PCE) <sup>5</sup>                                       |           |                    | 2,019        | 554 | 2,572 | 1,417        | 2,705 | 4,123 | 27,394  |
| TOTAL TRIPS FROM TRAFFIC STUDY (PCE) <sup>6</sup>                    |           |                    | 863          | 417 | 1,280 | 625          | 1,019 | 1,644 | 15,867  |
| VARIANCE (PCE)                                                       |           |                    | 1,156        | 137 | 1,292 | 792          | 1,686 | 2,479 | 11,527  |

<sup>1</sup> Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

<sup>2</sup> TSF = thousand square feet

<sup>3</sup> Vehicle Mix Source: Truck mix (by axle type) source from City of Fontana Truck Trip Generation Study (August 2003). PCE rates are per SBCTA.

<sup>4</sup> Trip generation rates based on the regression equation.

<sup>5</sup> TOTAL NET TRIPS = Passenger Cars + Net Truck Trips.

<sup>6</sup> Source: The Park @ Live Oak Traffic Impact Analysis, Urban Crossroads, Inc., December 12, 2018.

<sup>7</sup> Square footage determined based on FAR of 1.0 for 78.3-acre site. Square footage then split between light manufacturing, office, and retail (all permitted uses).



COMMENT LETTER J

2408 S. Mountain Ave.  
Irwindale, CA 91010  
May 15, 2019

Marilyn Simpson, Irwindale Planning Department  
5050 N. Irwindale Ave.  
Irwindale, Ca., 91706

Regarding: Comments to the Draft Environmental Impact Report (DEIR) for the Park at  
Live Oak. project (Park Project)

Dear Ms. Simpson:

The purpose of this letter is to put in writing some concerns about the Park at Live Oak Project, (Park Project), I made at the Community Meeting held last month and to express other concerns about the Project during this commenting period. Please note that the Disposition and Development Agreement was not available. Therefore, I can not adequately respond during the commenting period.

Firstly, the proposed extension of Private Road A at the Park Project connecting Avenida Barbosa to Live Oak Highway will have a negative impact upon residents along Meridian St and the surrounding residential streets. There is traffic from drivers who are looking for shortcuts to or from their destinations. There will be traffic from the Park Project and there may be cumulative traffic impacts from sites that have not been considered in the initial traffic study. While the traffic study does reference the intersection of Alpha St. and Avenida Barbosa, the traffic study does not make any reference to traffic along Meridian due to drivers looking for a shortcut to or from their destinations. The number and size or type of vehical expected to go through the new road extensioin that impact Meridian

J-1

J-2





COMMENT LETTER J

residents is not fully studied Nor does the study adequately study noise or health and safety concerns, such as increased air pollution.

Regarding traffic impacts from the Park Project, the exact traffic impact is not fully known since no specific user has been identified. If an intersection is placed at Private Road B, there is another potential traffic impact for the Meridian St. residents. that has not been studied. Drivers looking for a shortcut would also have another shortcut along Road B which may impact the Meridian area further.

Regarding cumulative traffic impacts, Table 4.0.1, List of Cumulative Development Projects in the Draft Environmental Impact Report, (DEIR), there is no mention of a proposed 528,710 s.f. industrial building at 13131 Los Angeles St., Irwindale or a new transportation center that includes a Fed Ex facility by the 605 freeway and Lower Azusa Rd., Arcadia. Fed Ex trucks pass through Meridian St now that they occupy their new facility. Since both the Fedex building and proposed Los Angeles St. building are near each other, will the Los Angeles St. site also feed trucks through Meridian St.? That possibility should be studied. In Addition, the Irwindale City Council is negotiating the purchase of land at the corner of Arrow Highway and Avenida Barbosa possibly for future development. The proposed extension of Avenida Barbosa ( Road A) or an intersection at Road B will increase the traffic impacts along Meridian St. and further impact the Meridian area. The extent of the impact has not been fully studied.

Regarding the Park Project, the proposed use as industrial/ commercial use is inconsistent with the City's General Plan. The General Plan identifies the Park Project site for regional commercial use. Therefore, the proposed Park Project as presented need not be considered. Although the current general plan can allow light industrial, the city can consider a number of options to attract commercial uses which can better benefit the community.

Additionally, if one considers alternative sites for the Park Project development the Reliance II Project already provides an industrial/ commercial mix similar to the Park Project. The Reliance II site is closer to two freeways than the Park Project and has more direct freeway access from Irwindale Ave. Also, the site is away from residents. Sites that propose a large 500,000+ square foot building for potential e-commerce-type use similar to the Park Project include the Reliance II site and a proposed building at 13131 Los Angeles St. Because the uses proposed for the Park Project are already

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CONT.

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COMMENT LETTER J

proposed elsewhere, there is no real need to consider more of the same uses. The maximum required space for commercial is small by comparison to its land size and square footage of total industrial buildings. The City could potentially get better benefit for the site leaving it for commercial purposes.

Another area of concern about the Park Project is air quality. It is understood that the Draft EIR indicates that there would be no significant impact from the park project. However, did the traffic study base their assumptions on the fact that the site could have perhaps 500 trips per day of diesel trucks from one building? An initial study for a 500,000+ square foot at 5175 Vincent was projected to have as many 500 trucks trips per day, if I understand correctly. If the Park Project has same traffic for its large, similar size warehouse of similar use as an e-commerce distribution center, would the calculation of impact result in the same conclusion of no significant impact?

Regarding traffic along Live Oak and Arrow Highway, it appears restriping of lanes is a cheaper and easier means of remediating traffic impacts. However, the City should perhaps consider requiring a dedication of land from the developers or a purchase of land for widening of the highways. The City could require deeper setbacks. In this way, the City can consider adding additional traffic lanes to meet demand and perhaps add bike lanes to serve the site or require deceleration/ acceleration lanes for vehicles entering or exiting the project site. As I understand, the Park site is required to provide bicycle parking yet there are no bike lanes.

Thank you for the opportunity to add input on this important matter,

Sincerely,

Robert R. Diaz

J-8  
CONT.

J-9

J-10



**RESPONSES TO COMMENT LETTER J:**

**Robert R. Diaz**

- J-1**        Comments acknowledged. The draft Park @ Live Oak Development Agreement is part of the Project's administrative record, on file with the City of Irwindale, and available for public review upon request.
- J-2**        As discussed throughout the supplemental traffic memorandum added to the FEIR (refer to FEIR Technical Appendix I3), the Project will contribute fewer than 50 peak hour trips to the north to Meridian Street. As indicated on FEIR page 4.11-2: "[b]ased on City of Irwindale requirements for the preparation of traffic reports and CMP requirements, the appropriate geographic area of study to evaluate a project's potential impacts to roads and intersections is an area in which the project would contribute 50 or more PCE peak hour trips to any intersection." Given this industry-standard methodology and based on the significance criteria cited in EIR Subsection 4.11.4, where the Project contributes less than 50 peak hour trips, impacts to the circulation network are considered less than significant. Also, The Park @ Live Oak Specific Plan has been revised to add Chapter 5, Section G, Truck Traffic Management Plan, which includes a truck routing plan and a requirement to establish a building owner/operator system for the purpose of monitoring and controlling the directional distribution of the Project's truck traffic.
- J-3**        A Noise Study (EIR Technical Appendix H) and Health Risk Assessment (HRA) (EIR Technical Appendix B2) were provided to address potential impacts to sensitive receptors in the Project site' surrounding area. Exhibit 8-A of the Noise Study, Receiver Location R3, identifies the existing residential homes on Meridian Street. Additionally, Exhibit 2-B of the HRA also indicates sensitive receptors along Meridian Street. It should be noted that for purposes of analysis, the Noise and HRA studies analyze impacts to the nearest sensitive receptor. Other sensitive receptors located at a further distance are anticipated to experience lower impacts than the nearest sensitive receptor analyzed. In all cases, the Project's impacts to receptors on Meridian Street were determined to be less than significant.
- J-4**        As discussed throughout the supplemental traffic memorandum added to the FEIR (refer to FEIR Technical Appendix I3), the Project will contribute less than 50 peak hour trips to the north to Meridian Street, even with the B Street connection. Where the Project contributes less than 50 peak hour trips, impacts to the circulation network are considered less than significant. Additionally, the B Street connection would not affect the circulation of Meridian Street because B Street does not extend to Meridian Street.
- J-5**        Based on the traffic study prepared for the Los Angeles Street warehouse project, the trip distribution for passenger cars and trucks do not utilize Meridian Street. Regarding the Federal Express facility in the City of Arcadia, the facility is in operation and therefore its traffic is captured in the existing traffic counts reported in the TIA (refer to FEIR Technical



- Appendix I1); it is not reported as a cumulative project in EIR Table 4.0-1 because it is already in operation and considered part of the existing condition. Traffic from the Federal Express facility using local streets is assumed to mainly be for the purpose of local package delivery routes and not regional travel, as the facility is located within one block of the Lower Azusa Road/I-605 interchange. Additionally, The Park @ Live Oak Project does not have control over the distribution of truck traffic from these two other unrelated projects, so any cut-through traffic that may occur is beyond the control of this Project. The Park @ Live Oak Specific Plan has been revised to add Chapter 5, Section G, Truck Traffic Management Plan, which includes a truck routing plan and a requirement to establish a building owner/operator system for the purpose of monitoring and controlling the directional distribution of the Project's truck traffic.
- J-6** Any new developments that are processed in the future will study their own impacts to the circulation network. Based on the Project trip distribution, there will be less than 50 peak hour trips heading north to Meridian Street. As such, any traffic impact from the Project is considered less than significant.
- J-7** The commenter's observation is correct that the proposed Project is not consistent with the site's existing General Plan designation of "Regional Commercial." For this reason, the Project includes a proposed General Plan Amendment (GPA; City of Irwindale Case No. 01-2017). The City of Irwindale and Project Applicant have determined that there is not a demand for ±87 acres of commercial uses on the Project site. In order for new commercial use to have an enduring chance of economic success, they require a high concentration of residents in the nearby area to support those uses, and such a concentration does not exist around the site. There is not enough pass-by traffic along either Arrow Highway or Live Oak Avenue in this location to support ±87 acres of commercial use (Project Applicant, 2019). The Park @ Live Oak provides for a mix of commercial and industrial/business park uses, with commercial uses concentrated along Arrow Highway and directly across from the entrance to the Irwindale Speedway, which are the locations on the site that have the best chance to attract commercial uses. EIR Subsection 6.2.2, discusses a General Plan Consistency Alternative (GPCA), which considers development of the site with land uses that are consistent with property's "Regional Commercial" land use designation. In comparison to the proposed Project, the GPCA would generate more vehicular trips compared to the mix of industrial, business park, and commercial land uses proposed by The Park @ Live Oak Specific Plan, also resulting in increased vehicular-related impacts to air quality, GHG emissions, noise, and traffic. Refer to Response I-17 for information on the number of vehicle trips that would be generated by a GPCA, which are nearly twice the traffic volume that would be produced by the proposed Project.
- J-8** Refer to EIR Subsection 6.2.1. Under certain circumstances, CEQA requires that an analysis of alternative sites be included in an EIR. One of the criteria to consider is whether the Project Applicant has the reasonable possibility of controlling another site that can accommodate the project and that would have fewer developmental and environmental



- constraints than the Project site evaluated in this EIR. The Project Applicant has no control over the Reliance II site, which is under the control of separate and unrelated owners and developers.
- J-9** Not only did the Project's Traffic Impact Analysis (TIA), Air Quality Impact Analysis (AQIA) and other reports study the effect of trucks in general, the analysis considers detailed operating characteristics such as fuel type, number of axels, and distance of travel. Refer to EIR pp. 4.2-20 and 21. It should be noted that the DEIR indicates that for regional emissions, operation of the Project would exceed the threshold of significance for emissions of both VOCs and NOx. As the majority of VOC emissions are derived from consumer products (cleaning supplies, aerosols, and other industrial consumer products), the Project cannot meaningfully control consumer products via mitigation thus, VOC emissions are considered significant and unavoidable as no feasible mitigation measure exists that would reduce this impact to less than significant levels. Additionally, the DEIR indicates that over 92 percent of the Project's NOx emissions are derived from vehicle usage. Since the Project does not have regulatory authority to control tailpipe emissions, no feasible mitigation measures exist that would reduce NOx emissions to levels that are less-than-significant, thus these emissions are considered significant and unavoidable.
- J-10** Adding more lanes to both Arrow Highway and Live Oak Avenue would exceed and not be consistent with the City of Irwindale General Plan (City of Irwindale, 2006).



COMMENT LETTER K

From: H Manuel Ortiz <[HMOrtiz@IrwindaleCA.gov](mailto:HMOrtiz@IrwindaleCA.gov)<<mailto:HMOrtiz@IrwindaleCA.gov>>>  
Date: May 6, 2019 at 9:07:29 AM PDT  
To: Marilyn Simpson <[msimpson@IrwindaleCA.gov](mailto:msimpson@IrwindaleCA.gov)<<mailto:msimpson@IrwindaleCA.gov>>>  
Cc: William Tam <[wtam@IrwindaleCA.gov](mailto:wtam@IrwindaleCA.gov)<<mailto:wtam@IrwindaleCA.gov>>>  
Subject: The Park at Live Oak

Good morning Marilyn,

I would like to give some input on the future project of The Park at Live Oak, I understand the public can submit ideas or input that can be incorporated before May 15, 2019 as they get ready for the preparation of the EIR.

1. Construction of a street that runs parallel to West 605 Fwy from Arrow Hwy to Live Oak with entrance or entrances to site, and hopefully connecting street with Arrow Hwy off ramp from south bound 605, and on ramp from Live Oak ave to same south bound 605 Fwy.
2. Buildings all the way around should present a Spanish design as per city guidelines. With enhancements at the main entrances of the site.
3. This site should have Fountains built at the main entrances Arrow Hwy and Live Oak. The Gore point should show a monument with our City's name and of course the name of the facility.
4. There should be a way of adding a two left turn lanes from Arrow Hwy west to Live Oak east at the Gore point.
5. They should plan for more retail areas on the Live Oak Ave, since the future use of the Speed Way site could retail.

These are some of the ideas that come my mind now since the presentation offered by the Developer recently, I might come up with more ideas before the deadline of May 15. Please let me know if you have any questions and if I need to send this message to the Developer myself. Thanks

Manuel Ortiz

K-1

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**RESPONSES TO COMMENT LETTER K:**

**Manuel Ortiz**

- K-1** This comment letter is acknowledged as received as comment on The Park @ Live Oak Specific Plan EIR.
- K-2** This idea is noted and has been conveyed to the Project Applicant for their consideration during the site planning of building layouts for the Project. At this time, the City is considering The Park @ Live Oak Specific Plan and other legislative approvals to permit industrial/business park and commercial development on the property. No building footprints are proposed at this time, and the only internal roads that are proposed by the Specific Plan are Private Drive A, to connect Live Oak Avenue and Arrow Highway (and that roughly parallels I-605), and Private Drive B, to connect with Arrow Highway to a point internal to the Project site in an alignment that will be determined in association with implementing development plans. The locations of any and all other internal driveways will be determined in the future at the time building layouts are proposed.
- K-3** Please refer to The Park @ Live Oak Specific Plan, which sets forth architectural design guidelines for the Project.
- K-4** The conceptual entry monument design shown in The Park @ Live Oak Specific Plan includes the words “Welcome to Irwindale.” Fountains are not proposed by the Specific Plan.
- K-5** At the intersection of Live Oak Avenue and Arrow Highway, there are currently two westbound left turn lanes.
- K-6** The Park @ Live Oak Specific Plan calls for a Commercial/Industrial planning area to be located on Live Oak Avenue across from the entrance to the Irwindale Speedway. Commercial uses would be permitted to locate in this area.
- K-7** This comment letter is acknowledged as received.





### F.3 ADDITIONS, CORRECTIONS, AND REVISIONS TO THE DRAFT EIR

Substantive changes made to the text, tables and/or exhibits of the DEIR in response to public comments on the DEIR are discussed below and/or itemized in Table F-2. Additions are shown in Table F-2 as underline text and deletions shown as stricken text. No corrections or additions made to the DEIR are considered substantial new information requiring recirculation or additional environmental review under CEQA Guidelines §15088.5.

**Table F-2 Errata Table of Additions, Corrections, and Revisions**

| Page(s)       | Section                  | Additions, Corrections, and Revisions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1-5           | 1.0, Introduction        | The DEIR disclosed SCAQMD as a Responsible Agency, but inadvertently omitted SCAQMD from the list of Responsible Agencies in Subsection 1.5. SCAQMD is added to the list of Responsible Agencies in Subsection 1.5 of the FEIR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1-9           | 1.0, Introduction        | The Project's wastewater flow rate projection is noted in the FEIR as being reduced from 471,705 gallons per day (estimated by LACSD in their comment on the NOP) to 322,325 gallons per day as noted in FEIR Comment D-1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3-11 and 12   | 3.0, Project Description | <p>Zone Ordinance Amendment (ZOA) No. 01-2019 is added as a City of Irwindale discretionary action required to adopt the Park @ Live Oak Specific Plan. ZOA No. 01-2019 is added to the FEIR as follows.</p> <p>3.3.3 Zone Change (ZC) No. 01-2017 <u>and Zone Ordinance Amendment (ZOA) No. 01-2019</u></p> <p>The Park @ Live Oak Specific Plan zoning designation would allow for a variety of uses including general light industrial, manufacturing, warehouse/distribution, and e-commerce fulfillment center operations, commercial uses, retail services, professional offices, and other uses permitted by The Park @ Live Oak Specific Plan. <u>In addition, Zone Ordinance No. 01-2019 is required to adopt the Park @ Live Oak Specific Plan.</u></p> |
| 3-17          | 3.0, Project Description | In response to Comment F-21, SCAQMD is added to the FEIR's list of subsequent approval agencies should any stationary emission source be installed at the Project site that requires a SCAQMD permit. Additionally, ZOA No. 01-2019 is added as a City of Irwindale discretionary action required to adopt the Park @ Live Oak Specific Plan.                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4.2-17 and 28 | 4.2, Air Quality         | <p>In response to Comment F-43, reference to SCAQMD Rule 403(e) is added in the FEIR as follows.</p> <p><u>SCAQMD Rule 403(e): Additional Requirements for Large Operations; which requires the implementation of applicable</u></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |



| Page(s)       | Section          | Additions, Corrections, and Revisions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                  | <u>actions specified in Table 3, Contingency Control Measures for Large Operations, of SCAQMD Rule 403.</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4.2-38        | 4.2, Air Quality | In response to Comment F-23, Mitigation Measure 4.2-2 is revised in the FEIR to acknowledge SCAQMD Rule 403(e).<br><br>MM 4.2.2 Project construction activities shall comply with the provisions of South Coast Air Quality Management District Rule 403, “Fugitive Dust” and Rule 403(e) “ <u>Additional Requirements for Large Operations.</u> ”                                                                                                                                                                                                                   |
| 4.2-40 and 41 | 4.2, Air Quality | In response to Comment F-9, Mitigation Measure 4.2-6 is revised in the FEIR as follows:<br><br>MM 4.2-6 As a condition of building permit issuance, the City of Irwindale shall require installation of passenger car EV charging stations and designated carpool parking stalls per the provisions of the California Green Building Standards Code <u>and require that each building be constructed with an adequately sized electrical panel(s) and conduit to accommodate future EV charging stations at a minimum of 5% of the passenger car parking spaces.</u> |
| 4.2-41        | 4.2, Air Quality | In response to Comment F-13, Mitigation Measure 4.2-8 is supplemented in the FEIR to include the following.<br><br>MM 4.2-8 . . . <u>Building users/operators with truck check-in gates shall maintain truck access records which shall be made available for inspection by the City of Irwindale. This requirement shall expire on January 1, 2023.</u>                                                                                                                                                                                                             |
| 4.2-41        | 4.2, Air Quality | In response to Comment F-14, Mitigation Measure 4.2-9 is supplemented in the FEIR to include the following.<br><br>MM 4.2-9 . . . <u>Electrical panels should be appropriately sized to allow for future expanded use.</u>                                                                                                                                                                                                                                                                                                                                           |
| 4.3-9         | 4.3, Energy      | In response to Comments F-10 and F-14, the following information is added to the FEIR.<br><br><u>In addition, the Project Applicant has estimated that the approximate energy demand to power a combination of 2% of the truck parking spaces and 5% of the auto spaces with electrical vehicle (EV) charging under maximum buildout of the Specific Plan is 3,054.125 amps.</u>                                                                                                                                                                                     |
| 4.7-16, 17    | 4.7, Hydrology   | The following typographical errors are corrected in the FEIR.<br><br>As such, the Project would not conflict with the Basin Plan, and <u>no</u> impacts would <del>be less than significant</del> occur.                                                                                                                                                                                                                                                                                                                                                             |



| Page(s)    | Section              | Additions, Corrections, and Revisions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | and Water Quality    | As such, the Project would not conflict with any water quality control plans or sustainable groundwater management plans, and <u>no</u> impacts would be <del>less than significant</del> occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4.11-62    | 4.11, Transportation | <p>The following typographical error is corrected in the FEIR.</p> <p>For this reason, as detailed in the response to Threshold a, a LOS metric and not a VMT metric is appropriately used in this EIR to <del>evaluate</del> <u>evaluate</u> the Project's transportation-related impacts.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 4.11-71-73 | 4.11, Transportation | <p>To ensure that Project-related construction traffic is sufficiently addressed by mitigation, the implementation timing for Mitigation Measure MM 4.11-5.d and Mitigation Measures MM 4.11-6.c, d, e, and g are revised in the FEIR from building permit to grading permit, as follows:</p> <p>MM 4.11-5</p> <p>d. As a condition of any <u>grading or</u> building permit that would involve ingress/egress access at the existing intersection of Speedway Driveway &amp; Live Oak Avenue. . . .</p> <p>MM 4.11-6</p> <p>c. Prior to issuance of <u>grading and</u> building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #4 – Live Oak Avenue &amp; Arrow Highway (West):. . . .</p> <p>d. Prior to issuance of <u>grading and</u> building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #15 – Avenida Barbosa/Private Drive A &amp; Arrow Highway:. . . .</p> <p>e. Prior to issuance of <u>grading and</u> building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #7 – Speedway Driveway &amp; Live Oak Avenue:. . . .</p> <p>g. Prior to issuance of <u>grading and</u> building permits the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following</p> |



| Page(s)           | Section                             | Additions, Corrections, and Revisions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                                     | improvements to Intersection #23 – I-605 Northbound Off-Ramp & Live Oak Avenue:. . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4.13-6,<br>17, 23 | 4.13, Utilities and Service Systems | <p>In response to Comment D-2, current flow rates of the San Jose Creek Water Reclamation Plant and Joint Water Pollution Control Plant are updated in the FEIR, which are lower than the DEIR reported, indicating that there is more capacity at the facilities than the DEIR disclosed:</p> <p>The San Jose Creek WRP is the largest of the water reclamation plants with a capacity of 100 mgd and an average flow of <del>64.1</del> <u>58.5</u> mgd....</p> <p>The Joint Water Pollution Control Plan in the City of Carson has a design capacity of 400 mgd and currently produces an average flow of <del>263.4</del> <u>261.1</u> mgd.</p>                                                                                                                                                                                                                                                               |
| 4.13-17           | 4.13, Utilities and Service Systems | <p>In response to Comment D-3, the following information has been added to clarify the composition of wastewater generated by the Project and to clarify that some components of the Project would require the approval of an Industrial Wastewater Discharge Permit from the LACSD:</p> <p>The composition of wastewater generated by <u>some of the Project's uses</u> would be similar to composition of wastewater generated within homes, small businesses, offices, retail shops, etc., <u>while others would generate industrial wastewater that would require the approval of an Industrial Wastewater Discharge Permit from the LACSD in accordance with LACSD's Wastewater Ordinance (LACSD, 1998). The issuance of an Industrial Wastewater Discharge Permit would ensure the protection of the environment and public health, which is the purpose of the Wastewater Ordinance (LACSD, 1998).</u></p> |
| 4.13-26           | 4.13, Utilities and Service Systems | <p>The following typographical errors are corrected in the FEIR:</p> <p>In order to assist the City of <del>Arcadia</del> <u>Irwindale</u>. . .</p> <p>The Project would be required to comply with all applicable solid waste statutes and regulations; as such, <u>there would be no</u> impacts related to solid waste statutes and regulations <del>would be less than significant</del>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 6-18              | 6.0, Alternatives                   | <p>The following typographical error was corrected in the FEIR:</p> <p>The High-Cube Warehouse Alternative would result in greater impacts <u>related to carcinogenic and non-carcinogenic risks related to DPM exposure as compared to the proposed Project.</u></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7-8               | 7.0, References                     | <p>The following references are added to the FEIR:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



| Page(s) | Section | Additions, Corrections, and Revisions |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------|---------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |         | <b><i>Cited As</i></b>                | <b><i>Citation</i></b>                                                                                                                                                                                                                                                                                                                                                                                                                          |
|         |         | CAPCOA, 2017                          | <u>California Air Pollution Control Officers Association (CAPCOA). 2017. CalEEModAppendix E. October 2017.</u>                                                                                                                                                                                                                                                                                                                                  |
|         |         | <u>City of Irwindale, 2019</u>        | <u>City of Irwindale. 2019. <i>Municipal Code</i>. Accessed June, 25, 2019. Available online: <a href="https://library.municode.com/ca/irwindale/codes/code_of_ordinances?nodeId=TIT1GEPR_CH1.16ADCI_1.16.100READHE">https://library.municode.com/ca/irwindale/codes/code_of_ordinances?nodeId=TIT1GEPR_CH1.16ADCI_1.16.100READHE</a></u>                                                                                                       |
|         |         | <u>Census Reporter, 2019</u>          | <u>Census Reporter. 2019. Census Tract 4046, Los Angeles, CA. Accessed September 27, 2019. Available online: <a href="https://censusreporter.org/profiles/14000US06037404600-census-tract-4046-losangeles-ca/">https://censusreporter.org/profiles/14000US06037404600-census-tract-4046-losangeles-ca/</a></u>                                                                                                                                  |
|         |         | <u>Foothill Transit, 2019</u>         | <u>Foothill Transit. 2019. Personal communication (phone call) with C. Mroska of T&amp;B Planning, Inc. Topic: bus routing. July 2, 2019.</u>                                                                                                                                                                                                                                                                                                   |
|         |         | <u>ICCT, 2017</u>                     | <u>The International Council on Clean Transportation (ICCT). 2017. <i>Transitioning to Zero-Emission Heavy-Duty Freight Vehicles</i>. Accessed June 26, 2019. Available online: <a href="https://www.theicct.org/sites/default/files/publications/Zero-emission-freight-trucks_ICCT-white-paper_26092017_vF.pdf">https://www.theicct.org/sites/default/files/publications/Zero-emission-freight-trucks_ICCT-white-paper_26092017_vF.pdf</a></u> |
|         |         | <u>ICCT, 2019</u>                     | <u>The International Council on Clean Transportation (ICCT). 2019. <i>Zero-emission tractor-trailers in Canada</i>. Accessed June 26, 2019. Available online: <a href="http://www.theicct.org/publications/zero-emission-tractor-trailers-canada">http://www.theicct.org/publications/zero-emission-tractor-trailers-canada</a></u>                                                                                                             |
|         |         | <u>LAC, 2017</u>                      | <u>Los Angeles County (LAC). 2017. <i>Unemployment Rates in Los Angeles County by District</i>. March 3, 2017. Accessed September 26, 2019. Available online: <a href="https://workforce.lacounty.gov/wpcontent/uploads/2017/03/Unemployment-Rateby-District-January-2016-17.pdf">https://workforce.lacounty.gov/wpcontent/uploads/2017/03/Unemployment-Rateby-District-January-2016-17.pdf</a></u>                                             |
|         |         | <u>Urban Crossroads, 2019a</u>        | <u>Urban Crossroads, Inc. (Urban Crossroads). 2019. <i>The Park @ Live Oak Supplemental Traffic Assessment</i>. June 13, 2019.</u>                                                                                                                                                                                                                                                                                                              |
|         |         | <u>Urban Crossroads, 2019b</u>        | <u>Urban Crossroads, Inc. (Urban Crossroads). 2019. <i>Revised Risk Calculations</i>. June 18, 2019.</u>                                                                                                                                                                                                                                                                                                                                        |
|         |         | <u>Urban Crossroads, 2019c</u>        | <u>Urban Crossroads, Inc. (Urban Crossroads). 2019. Email Correspondence Between Haseeb Quershi (Urban Crossroads) and Tracy Zinn (T&amp;B Planning, Inc.). June 28, 2019.</u>                                                                                                                                                                                                                                                                  |



| Page(s)               | Section      | Additions, Corrections, and Revisions                                                                                                                                            |                                                                                                                                      |
|-----------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|                       |              | <u>Urban Crossroads, 2019d</u>                                                                                                                                                   | <u>Urban Crossroads, Inc. (Urban Crossroads). 2019. The Park @ Live Oak Supplemental Air Quality Assessment. September 24, 2019.</u> |
|                       |              | <u>Urban Crossroads, 2019e</u>                                                                                                                                                   | <u>Urban Crossroads, Inc. (Urban Crossroads). 2019. The Park @ Live Oak Construction Activity Assessment. November 11, 2019.</u>     |
| Technical Appendix I1 | Appendix 4.2 | In response to Caltrans Comment B-5, cumulative project trip generation was added to Appendix 4.2 of the Project's Traffic Impact Analysis (TIA) technical report.               |                                                                                                                                      |
| Technical Appendix 13 | n/a          | The following document is added to the FEIR as Technical Appendix 13:<br><u>Urban Crossroads, Inc. 2019. The Park @ Live Oak Supplemental Traffic Assessment. June 13, 2019.</u> |                                                                                                                                      |



#### **F.4 NO RECIRCULATION OF THE DRAFT EIR REQUIRED**

CEQA Guidelines §15088.5 describes the conditions under which a DEIR that was circulated for public review is required to be re-circulated for additional public review and comment. CEQA Guidelines §15088.5 states that new information added to a DEIR is not significant unless the DEIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation includes, for example, a disclosure showing that:

- a. A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- b. A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
- c. A feasible project alternative or mitigation measure considerably different from the others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.
- d. The DEIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

As summarized in Table F-2 Additions, Corrections, and Revisions to the Draft EIR, and based on the comment letters and responses presented in the Responses to Comments (above), there were no public comments or changes to the text or analysis contained in the DEIR that resulted in the identification of any new significant environmental effect or a substantial increase in the severity of an environmental effects that were disclosed in the DEIR. Based on comments received on the DEIR, no revisions to the Project's mitigation measures were necessary. Additionally, the DEIR was fundamentally and basically adequate, and all conclusions within the DEIR were supported by evidence provided within the DEIR or the administrative record for the proposed Project. Furthermore, public comment letters on the DEIR did not identify any alternatives to the proposed Project.

Based on the foregoing, additional recirculation of the DEIR is not warranted according to the guidance set forth in §15088.5 of the CEQA Guidelines.



**Attachment A (Refer to Response F-7)**  
**Urban Crossroads, Inc. Revised Risk Calculations**

Table 1  
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards  
-0.25 to 0 Age Bin Exposure Scenario

| Source<br><br>( a ) | Mass GLC                      |                               | Weight<br>Fraction<br><br>( d ) | Contaminant<br><br>( e ) | Carcinogenic Risk                                  |                                           |                              |                   | Noncarcinogenic Hazards/ Toxicological Endpoints** |                             |                   |                      |                    |                    |                   |                    |                    |                   |
|---------------------|-------------------------------|-------------------------------|---------------------------------|--------------------------|----------------------------------------------------|-------------------------------------------|------------------------------|-------------------|----------------------------------------------------|-----------------------------|-------------------|----------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|
|                     | (ug/m <sup>3</sup> )<br>( b ) | (mg/m <sup>3</sup> )<br>( c ) |                                 |                          | URF<br>(ug/m <sup>3</sup> ) <sup>-1</sup><br>( f ) | CPF<br>(mg/kg/day) <sup>-1</sup><br>( g ) | DOSE<br>(mg/kg-day)<br>( h ) | RISK<br><br>( i ) | REL<br>(ug/m <sup>3</sup> )<br>( j )               | RfD<br>(mg/kg/day)<br>( k ) | RESP<br><br>( l ) | CNS/PNS<br><br>( m ) | CV/BL<br><br>( n ) | IMMUN<br><br>( o ) | KIDN<br><br>( p ) | GI/LV<br><br>( q ) | REPRO<br><br>( r ) | EYES<br><br>( s ) |
|                     |                               |                               |                                 |                          |                                                    |                                           |                              |                   |                                                    |                             |                   |                      |                    |                    |                   |                    |                    |                   |
|                     | 0.00104                       | 1.04E-06                      | 1.00E+00                        | Diesel Particulate       | 3.0E-04                                            | 1.1E+00                                   | 3.6E-07                      | 1.1E-08           | 5.0E+00                                            | 1.4E-03                     | 2.1E-04           |                      |                    |                    |                   |                    |                    |                   |
| TOTAL               |                               |                               |                                 |                          |                                                    |                                           |                              | 1.1E-08           |                                                    |                             | 2.1E-04           | 0.0E+00              | 0.0E+00            | 0.0E+00            | 0.0E+00           | 0.0E+00            | 0.0E+00            | 0.0E+00           |

\*\* Key to Toxicological Endpoints

RESP            Respiratory System  
CNS/PNS       Central/Peripheral Nervous System  
CV/BL          Cardiovascular/Blood System  
IMMUN         Immune System  
KIDN           Kidney  
GI/LV           Gastrointestinal System/Liver  
REPRO         Reproductive System (e.g. teratogenic and developmental effects)  
EYES           Eye irritation and/or other effects

Note:            Exposure factors used to calculate contaminant intake

exposure frequency (days/year)            350  
exposure duration (years)                    0.25  
inhalation rate (L/kg-day)                    361  
inhalation absorption factor                    1  
averaging time (years)                        70  
fraction of time at home                       0.85  
age sensitivity factor (age third trimester)   10

Table 2  
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards  
0-2 Age Bin Exposure Scenario

| Source<br><br>( a ) | Mass GLC             |                      | Weight<br>Fraction<br><br>( d ) | Contaminant<br><br>( e ) | Carcinogenic Risk                         |                                  |                     |         | Noncarcinogenic Hazards/ Toxicological Endpoints** |                    |         |         |         |         |         |         |         |         |
|---------------------|----------------------|----------------------|---------------------------------|--------------------------|-------------------------------------------|----------------------------------|---------------------|---------|----------------------------------------------------|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|
|                     | (ug/m <sup>3</sup> ) | (mg/m <sup>3</sup> ) |                                 |                          | URF<br>(ug/m <sup>3</sup> ) <sup>-1</sup> | CPF<br>(mg/kg/day) <sup>-1</sup> | DOSE<br>(mg/kg-day) | RISK    | REL<br>(ug/m <sup>3</sup> )                        | RfD<br>(mg/kg/day) | RESP    | CNS/PNS | CV/BL   | IMMUN   | KIDN    | GI/LV   | REPRO   | EYES    |
|                     | ( b )                | ( c )                |                                 |                          | ( f )                                     | ( g )                            | ( h )               | ( i )   | ( j )                                              | ( k )              | ( l )   | ( m )   | ( n )   | ( o )   | ( p )   | ( q )   | ( r )   | ( s )   |
|                     | 0.00104              | 1.04E-06             | 1.00E+00                        | Diesel Particulate       | 3.0E-04                                   | 1.1E+00                          | 1.1E-06             | 2.8E-07 | 5.0E+00                                            | 1.4E-03            | 2.1E-04 |         |         |         |         |         |         |         |
| TOTAL               |                      |                      |                                 |                          |                                           |                                  |                     | 2.8E-07 |                                                    |                    | 2.1E-04 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |

\*\* Key to Toxicological Endpoints

RESP            Respiratory System  
CNS/PNS       Central/Peripheral Nervous System  
CV/BL          Cardiovascular/Blood System  
IMMUN         Immune System  
KIDN           Kidney  
GI/LV          Gastrointestinal System/Liver  
REPRO         Reproductive System (e.g. teratogenic and developmental effects)  
EYES           Eye irritation and/or other effects

Note:            Exposure factors used to calculate contaminant intake

exposure frequency (days/year)            350  
exposure duration (years)                      2  
inhalation rate (L/kg-day)                    1090  
inhalation absorption factor                    1  
averaging time (years)                         70  
fraction of time at home                       0.85  
age sensitivity factor (0 to 2 years old)       10

Table 3  
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards  
2-16 Age Bin Exposure Scenario

| Source<br><br>( a ) | Mass GLC             |                      | Weight<br>Fraction<br><br>( d ) | Contaminant<br><br>( e ) | Carcinogenic Risk                         |                                  |                     |         | Noncarcinogenic Hazards/ Toxicological Endpoints** |                    |         |         |         |         |         |         |         |         |
|---------------------|----------------------|----------------------|---------------------------------|--------------------------|-------------------------------------------|----------------------------------|---------------------|---------|----------------------------------------------------|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|
|                     | (ug/m <sup>3</sup> ) | (mg/m <sup>3</sup> ) |                                 |                          | URF<br>(ug/m <sup>3</sup> ) <sup>-1</sup> | CPF<br>(mg/kg/day) <sup>-1</sup> | DOSE<br>(mg/kg-day) | RISK    | REL<br>(ug/m <sup>3</sup> )                        | RfD<br>(mg/kg/day) | RESP    | CNS/PNS | CV/BL   | IMMUN   | KIDN    | GI/LV   | REPRO   | EYES    |
|                     | ( b )                | ( c )                |                                 |                          | ( f )                                     | ( g )                            | ( h )               | ( i )   | ( j )                                              | ( k )              | ( l )   | ( m )   | ( n )   | ( o )   | ( p )   | ( q )   | ( r )   | ( s )   |
|                     | 0.00104              | 1.04E-06             | 1.00E+00                        | Diesel Particulate       | 3.0E-04                                   | 1.1E+00                          | 5.7E-07             | 2.6E-07 | 5.0E+00                                            | 1.4E-03            | 2.1E-04 |         |         |         |         |         |         |         |
| TOTAL               |                      |                      |                                 |                          |                                           |                                  |                     | 2.6E-07 |                                                    |                    | 2.1E-04 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |

\*\* Key to Toxicological Endpoints

RESP            Respiratory System  
CNS/PNS       Central/Peripheral Nervous System  
CV/BL          Cardiovascular/Blood System  
IMMUN         Immune System  
KIDN           Kidney  
GI/LV          Gastrointestinal System/Liver  
REPRO         Reproductive System (e.g. teratogenic and developmental effects)  
EYES           Eye irritation and/or other effects

Note:            Exposure factors used to calculate contaminant intake

|                                             |      |
|---------------------------------------------|------|
| exposure frequency (days/year)              | 350  |
| exposure duration (years)                   | 14   |
| inhalation rate (L/kg-day)                  | 572  |
| inhalation absorption factor                | 1    |
| averaging time (years)                      | 70   |
| fraction of time at home                    | 0.72 |
| age sensitivity factor (ages 2 to 16 years) | 3    |

Table 4  
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards  
16-30 Age Bin Exposure Scenario

| Source<br><br>( a ) | Mass GLC             |                      | Weight<br>Fraction<br><br>( d ) | Contaminant<br><br>( e ) | Carcinogenic Risk                         |                                  |                     |         | Noncarcinogenic Hazards/ Toxicological Endpoints** |                    |               |                  |                |                |               |                |                |               |
|---------------------|----------------------|----------------------|---------------------------------|--------------------------|-------------------------------------------|----------------------------------|---------------------|---------|----------------------------------------------------|--------------------|---------------|------------------|----------------|----------------|---------------|----------------|----------------|---------------|
|                     | (ug/m <sup>3</sup> ) | (mg/m <sup>3</sup> ) |                                 |                          | URF<br>(ug/m <sup>3</sup> ) <sup>-1</sup> | CPF<br>(mg/kg/day) <sup>-1</sup> | DOSE<br>(mg/kg-day) | RISK    | REL<br>(ug/m <sup>3</sup> )                        | RfD<br>(mg/kg/day) | RESP<br>( l ) | CNS/PNS<br>( m ) | CV/BL<br>( n ) | IMMUN<br>( o ) | KIDN<br>( p ) | GI/LV<br>( q ) | REPRO<br>( r ) | EYES<br>( s ) |
|                     | ( b )                | ( c )                |                                 |                          | ( f )                                     | ( g )                            | ( h )               | ( i )   | ( j )                                              | ( k )              | ( l )         | ( m )            | ( n )          | ( o )          | ( p )         | ( q )          | ( r )          | ( s )         |
|                     | 0.00104              | 1.04E-06             | 1.00E+00                        | Diesel Particulate       | 3.0E-04                                   | 1.1E+00                          | 2.6E-07             | 4.0E-08 | 5.0E+00                                            | 1.4E-03            | 2.1E-04       |                  |                |                |               |                |                |               |
| TOTAL               |                      |                      |                                 |                          |                                           |                                  |                     | 4.0E-08 |                                                    |                    | 2.1E-04       | 0.0E+00          | 0.0E+00        | 0.0E+00        | 0.0E+00       | 0.0E+00        | 0.0E+00        | 0.0E+00       |

\*\* Key to Toxicological Endpoints

RESP            Respiratory System  
CNS/PNS       Central/Peripheral Nervous System  
CV/BL          Cardiovascular/Blood System  
IMMUN         Immune System  
KIDN            Kidney  
GI/LV           Gastrointestinal System/Liver  
REPRO         Reproductive System (e.g. teratogenic and developmental effects)  
EYES            Eye irritation and/or other effects

Note:            Exposure factors used to calculate contaminant intake

|                                                  |      |
|--------------------------------------------------|------|
| exposure frequency (days/year)                   | 350  |
| exposure duration (years)                        | 14   |
| inhalation rate (L/kg-day))                      | 261  |
| inhalation absorption factor                     | 1    |
| averaging time (years)                           | 70   |
| fraction of time at home                         | 0.73 |
| age sensitivity factor (ages 16 to 30 years old) | 1    |

**Total Risk for All Age Bins (per million)            0.59**

**Attachment B (Refer to Response I-3)**  
**Urban Crossroads, Inc. Supplemental Air Quality**  
**Analysis**



September 24, 2019

Ms. Tracy Zinn  
T&B Planning, Inc.  
17542 East 17<sup>th</sup> Street  
Tustin, CA 92780

**SUBJECT: THE PARK @ LIVE OAK SUPPLEMENTAL AIR QUALITY ASSESSMENT**

Dear Ms. Tracy Zinn:

Urban Crossroads, Inc. is pleased to submit this Supplemental Air Quality Assessment for *The Park @ Live Oak* ("Project"), which is located in the City of Irwindale. This letter has been prepared to supplement information in *The Park @ Live Oak Air Quality Impact Analysis* ("AQIA") prepared July 5<sup>th</sup>, 2018 by Urban Crossroads, Inc (1).

**PURPOSE**

It is our understanding that there is potential overlap that would occur for the existing landfilling operation that could coincide with Phase 1 construction activity associated with implementation of the Project.

**CONSTRUCTION EMISSIONS SUMMARY FROM AQIA**

The previously prepared AQIA evaluated the potential impacts that could occur as a result of construction associated with the Project. The maximum daily emissions associated with construction of the Project are summarized in Table 1 below, as reported in the AQIA. As shown, emissions resulting from the Project construction would not exceed criteria pollutant thresholds established by the SCAQMD for emissions for any criteria pollutant.

**TABLE 1: MAXIMUM DAILY CONSTRUCTION EMISSIONS SUMMARY FOR THE PARK @ LIVE OAK**

| Year                      | Emissions (pounds per day) |                 |       |                 |                  |                   |
|---------------------------|----------------------------|-----------------|-------|-----------------|------------------|-------------------|
|                           | VOC                        | NO <sub>x</sub> | CO    | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Maximum Daily Emissions   | 50.55                      | 85.39           | 75.66 | 0.23            | 14.31            | 6.75              |
| SCAQMD Regional Threshold | 75                         | 100             | 550   | 150             | 150              | 55                |
| Threshold Exceeded?       | NO                         | NO              | NO    | NO              | NO               | NO                |

**CONSTRUCTION EMISSIONS SUMMARY FROM POTENTIAL OVERLAPPING LANDFILLING OPERATIONS**

Emissions associated with the existing landfilling operations consist primarily of construction equipment, hauling, and worker trips that have the potential to overlap with construction of the Project emissions



summarized above. Table 2 below summarizes the equipment associated with the existing landfilling operations that would continue to operate during construction of the Project.

**TABLE 2: LANDFILLING EQUIPMENT ASSUMPTIONS**

| Equipment Type                       | Number of Equipment | Hours per day |
|--------------------------------------|---------------------|---------------|
| CAT 330D Excavator                   | 1                   | 7.5           |
| CAT 336F Excavator (Tier 4 Final)    | 5                   | 7.5           |
| CAT 349F Excavator (Tier 4 Final)    | 1                   | 7.5           |
| CAT D10R Track Dozer                 | 1                   | 7.5           |
| CAT 824 Rubber Tired Dozer           | 1                   | 7.5           |
| CAT 834B Wheel Dozer                 | 1                   | 7.5           |
| CAT 834H Wheel Dozer                 | 2                   | 7.5           |
| Box Grader                           | 1                   | 7.5           |
| CAT 988F Loader                      | 1                   | 7.5           |
| Metso LT120 Crusher (Tier 4 Interim) | 1                   | 7.5           |
| Metso LT120 Crusher (Tier 4 Final)   | 1                   | 7.5           |
| Metso LT3054 Crusher                 | 1                   | 7.5           |
| CAT 262C Skid Steer                  | 1                   | 7.5           |
| CAT 773B Rock Trucks                 | 5                   | 7.5           |
| 4,000-gallon Water Truck             | 1                   | 7.5           |
| 5,000-gallon Water Truck             | 2                   | 7.5           |
| Radial Stacker                       | 2                   | 7.5           |

In addition to the equipment listed above, the Project would also generate emissions associated with 60 daily employee trips (30 inbound and 30 outbound), 350 daily hauling trips (175 inbound and 175 outbound). The Project would also import approximately 1,750 cubic yards of soil per day and move approximately 9,000 cubic yards of soil on-site per day.

The maximum daily emissions associated with existing landfilling operations are summarized in Table 2 below. A summary of the emissions outputs associated with the existing landfill operations is presented in Attachment A.

**TABLE 2: MAXIMUM DAILY CONSTRUCTION EMISSIONS SUMMARY FOR EXISTING LANDFILLING**

| Year                    | Emissions (pounds per day) |                 |        |                 |                  |                   |
|-------------------------|----------------------------|-----------------|--------|-----------------|------------------|-------------------|
|                         | VOC                        | NO <sub>x</sub> | CO     | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Maximum Daily Emissions | 24.81                      | 322.31          | 212.72 | 0.65            | 33.92            | 19.91             |

## **REGIONAL AIR QUALITY IMPROVEMENT**

As summarized in the *Draft Environmental Impact Report SCH No. 2018041001 The Park @ Live Oak Specific Plan* (2), Appendix B-3: *Supplemental Air Quality Memorandum* (3), the Project is within the jurisdiction of the SCAQMD. In 1976, California adopted the Lewis Air Quality Management Act which created SCAQMD from a voluntary association of air pollution control districts in Los Angeles, Orange, Riverside, and San Bernardino counties. The geographic area of which SCAQMD consists is known as the SCAB. SCAQMD develops comprehensive plans and regulatory programs for the region to attain federal standards by dates specified in federal law. The agency is also responsible for meeting state standards by the earliest date achievable, using reasonably available control measures.

SCAQMD rule development through the 1970s and 1980s resulted in dramatic improvement in Basin air quality. Nearly all control programs developed through the early 1990s relied on (i) the development and application of cleaner technology; (ii) add-on emission controls, and (iii) uniform CEQA review throughout the Basin. Industrial emission sources have been significantly reduced by this approach and vehicular emissions have been reduced by technologies implemented at the state level by CARB. More detailed information on the regional air quality improvement is presented in the DEIR's Appendix B-3 as stated above.

The SCAQMD is the lead agency charged with regulating air quality emission reductions for the entire Basin. SCAQMD created AQMPs which represent a regional blueprint for achieving healthful air on behalf of the 16 million residents of the South Coast Basin. The 2012 AQMP states, "the remarkable historical improvement in air quality since the 1970's is the direct result of Southern California's comprehensive, multiyear strategy of reducing air pollution from all sources as outlined in its AQMPs," (4).

Part of the control process of the SCAQMD's duty to greatly improve the air quality in the Basin is the uniform CEQA review procedures required by SCAQMD's CEQA Handbook (5). The single threshold of significance used to assess Project direct and cumulative impacts has in fact "worked" as evidenced by the track record of the air quality in the Basin dramatically improving over the course of the past decades. As stated by the SCAQMD, the District's thresholds of significance are based on factual and scientific data and are therefore appropriate thresholds of significance to use for the Project.

## **CUMULATIVE IMPACTS**

Table 3 provides a summary of emissions associated with the Project as well as the Existing Landfilling Operations. As shown, the Project's incremental contribution is less than significant. Lastly, it should be noted that any potential overlap would be short-term in nature and cease upon completion of the respective phase of construction or completion of the landfilling operations.

**TABLE 3: CUMULATIVE DEVELOPMENT EMISSIONS SUMMARY**

| Operational Activities                           | Emissions (pounds per day) |                 |               |                 |                  |                   |
|--------------------------------------------------|----------------------------|-----------------|---------------|-----------------|------------------|-------------------|
|                                                  | VOC                        | NO <sub>x</sub> | CO            | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| <b>Maximum Project Emissions</b>                 | <b>50.55</b>               | <b>85.39</b>    | <b>75.66</b>  | <b>0.23</b>     | <b>14.31</b>     | <b>6.75</b>       |
| <b>Existing Landfilling Operations</b>           | <b>24.81</b>               | <b>322.31</b>   | <b>212.72</b> | <b>0.65</b>     | <b>33.92</b>     | <b>19.91</b>      |
| <b>Project + Existing Landfilling Operations</b> | <b>75.36</b>               | <b>407.70</b>   | <b>293.38</b> | <b>0.88</b>     | <b>48.23</b>     | <b>26.66</b>      |
| <b>Project's Incremental Contribution</b>        | <b>50.55</b>               | <b>85.39</b>    | <b>75.66</b>  | <b>0.23</b>     | <b>14.31</b>     | <b>6.75</b>       |
| SCAQMD Cumulatively Considerable Threshold       | 75                         | 100             | 550           | 150             | 150              | 55                |
| <b>Threshold Exceeded?</b>                       | <b>NO</b>                  | <b>NO</b>       | <b>NO</b>     | <b>NO</b>       | <b>NO</b>        | <b>NO</b>         |

As noted in the AQIA, the AQMD has published a report on how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (6). In this report the AQMD clearly states (Page D-3):

*"...the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.*

*Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."*

Therefore, this analysis assumes that individual projects that do not generate construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual Project-related construction emissions that exceed SCAQMD thresholds for Project-specific impacts would be considered cumulatively considerable.

#### Construction Impacts

The Project-specific evaluation of emissions presented in the AQIA and as summarized above demonstrates that, Project construction-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, Project construction-source emissions would be considered less than significant on a Project-specific and cumulative basis.

Ms. Tracy Zinn  
T&B Planning, Inc.  
September 24, 2019  
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Respectfully submitted,

URBAN CROSSROADS, INC.

A handwritten signature in black ink, appearing to be 'Haseeb Qureshi', with a stylized, flowing script.

Haseeb Qureshi,  
Associate Principal

## REFERENCES

1. **Urban Crossroads, Inc.** *The Park @ Live Oak Air Quality Impact Analysis Report*. Costa Mesa : s.n., 2018.
2. **City of Irwindale.** *Draft Environmental Impact Report SCH No. 2018041001 The Park @ Live Oak Specific Plan* . Irwindale : s.n., 2019.
3. **Urban Crossroads, Inc.** *The Park @ Live Oak Supplemental Air Quality Assessment*. 2019.
4. **South Coast Air Quality Management District.** *Air Quality Management Plan*. 2012.
5. **South coast Air Quality Management District.** CEQA Air Quality Handbook (1993). [Online] 1993. [Cited: November 13, 2013.] <http://www.aqmd.gov/ceqa/oldhdbk.html>.
6. **Goss, Tracy A and Kroeger, Amy.** White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. [Online] South Coast Air Quality Management District, 2003. [http://www.aqmd.gov/rules/ciwg/final\\_white\\_paper.pdf](http://www.aqmd.gov/rules/ciwg/final_white_paper.pdf).

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T&B Planning, Inc.  
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## **ATTACHMENT A**

The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

**The Park @ Live Oak (Landfill Operations)**  
**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 | 1.00 | 1000sqft | 0.02        | 1,000.00           | 0          |

### 1.2 Other Project Characteristics

|                                 |                            |                                 |       |                                  |       |
|---------------------------------|----------------------------|---------------------------------|-------|----------------------------------|-------|
| <b>Urbanization</b>             | Urban                      | <b>Wind Speed (m/s)</b>         | 2.2   | <b>Precipitation Freq (Days)</b> | 31    |
| <b>Climate Zone</b>             | 9                          |                                 |       | <b>Operational Year</b>          | 2021  |
| <b>Utility Company</b>          | Southern California Edison |                                 |       |                                  |       |
| <b>CO2 Intensity (lb/MW hr)</b> | 702.44                     | <b>CH4 Intensity (lb/MW hr)</b> | 0.029 | <b>N2O Intensity (lb/MW hr)</b>  | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Landfill Operations

Off-road Equipment - Other Construction Equipment represents 405 HP Dozer; Other Material Handling Equipment represents Stackers

Trips and VMT - Based on information provided by the applicant.

Grading -

Construction Off-road Equipment Mitigation - Crushing Equipment is Tier 4 Final

Fleet Mix - Landfill Equipment Operations

Area Coating -



## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

| Table Name              | Column Name                | Default Value | New Value    |
|-------------------------|----------------------------|---------------|--------------|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00          | 1.00         |
| tblConstEquipMitigation | Tier                       | No Change     | Tier 4 Final |
| tblConstructionPhase    | NumDays                    | 2.00          | 1.00         |
| tblFleetMix             | HHD                        | 0.03          | 0.00         |
| tblFleetMix             | LDA                        | 0.55          | 1.00         |
| tblFleetMix             | LDT1                       | 0.04          | 0.00         |
| tblFleetMix             | LDT2                       | 0.20          | 0.00         |
| tblFleetMix             | LHD1                       | 0.02          | 0.00         |
| tblFleetMix             | LHD2                       | 5.8510e-003   | 0.00         |
| tblFleetMix             | MCY                        | 4.8170e-003   | 0.00         |
| tblFleetMix             | MDV                        | 0.12          | 0.00         |
| tblFleetMix             | MH                         | 9.2500e-004   | 0.00         |
| tblFleetMix             | MHD                        | 0.02          | 0.00         |
| tblFleetMix             | OBUS                       | 2.0700e-003   | 0.00         |
| tblFleetMix             | SBUS                       | 7.0700e-004   | 0.00         |
| tblFleetMix             | UBUS                       | 1.8770e-003   | 0.00         |
| tblGrading              | MaterialImported           | 0.00          | 1,750.00     |
| tblOffRoadEquipment     | HorsePower                 | 247.00        | 405.00       |
| tblOffRoadEquipment     | HorsePower                 | 97.00         | 400.00       |
| tblOffRoadEquipment     | HorsePower                 | 85.00         | 415.00       |
| tblOffRoadEquipment     | HorsePower                 | 158.00        | 270.00       |
| tblOffRoadEquipment     | HorsePower                 | 172.00        | 405.00       |
| tblOffRoadEquipment     | HorsePower                 | 65.00         | 82.00        |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount | 1.00          | 0.00         |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount | 2.00          | 1.00         |
| tblOffRoadEquipment     | UsageHours                 | 8.00          | 0.00         |

## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

|                     |                   |        |        |
|---------------------|-------------------|--------|--------|
| tblOffRoadEquipment | UsageHours        | 1.00   | 7.50   |
| tblOffRoadEquipment | UsageHours        | 6.00   | 7.50   |
| tblTripsAndVMT      | HaulingTripNumber | 219.00 | 350.00 |
| tblTripsAndVMT      | WorkerTripNumber  | 23.00  | 60.00  |

## 2.0 Emissions Summary

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## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

**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   |                 |                 |        |        |                 |
| 2019    | 8.8947 | 159.9569 | 61.1450 | 0.3750 | 13.1288       | 2.6745       | 15.8033    | 5.0411         | 2.5048        | 7.5459      | 0.0000   | 39,987.68<br>76 | 39,987.68<br>76 | 4.2710 | 0.0000 | 40,094.46<br>21 |
| Maximum | 8.8947 | 159.9569 | 61.1450 | 0.3750 | 13.1288       | 2.6745       | 15.8033    | 5.0411         | 2.5048        | 7.5459      | 0.0000   | 39,987.68<br>76 | 39,987.68<br>76 | 4.2710 | 0.0000 | 40,094.46<br>21 |

**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   |                 |                 |        |        |                 |
| 2019    | 7.6369 | 150.3977 | 67.1021 | 0.3750 | 13.1288       | 2.3373       | 15.4661    | 5.0411         | 2.1676        | 7.2087      | 0.0000   | 39,987.68<br>76 | 39,987.68<br>76 | 4.2710 | 0.0000 | 40,094.46<br>21 |
| Maximum | 7.6369 | 150.3977 | 67.1021 | 0.3750 | 13.1288       | 2.3373       | 15.4661    | 5.0411         | 2.1676        | 7.2087      | 0.0000   | 39,987.68<br>76 | 39,987.68<br>76 | 4.2710 | 0.0000 | 40,094.46<br>21 |

|                   | 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 |
|-------------------|-------|------|-------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|------|------|------|
| Percent Reduction | 14.14 | 5.98 | -9.74 | 0.00 | 0.00          | 12.61        | 2.13       | 0.00           | 13.46         | 4.47        | 0.00     | 0.00      | 0.00      | 0.00 | 0.00 | 0.00 |

## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

**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         | 0.0224        | 0.0000             | 1.0000e-004   | 0.0000             |               | 0.0000             | 0.0000        |                    | 0.0000             | 0.0000             |          | 2.2000e-004    | 2.2000e-004    | 0.0000             |                    | 2.3000e-004    |
| Energy       | 3.0000e-005   | 2.3000e-004        | 2.0000e-004   | 0.0000             |               | 2.0000e-005        | 2.0000e-005   |                    | 2.0000e-005        | 2.0000e-005        |          | 0.2804         | 0.2804         | 1.0000e-005        | 1.0000e-005        | 0.2821         |
| Mobile       | 1.8900e-003   | 2.3600e-003        | 0.0358        | 1.3000e-004        | 0.0150        | 1.0000e-004        | 0.0151        | 3.9800e-003        | 9.0000e-005        | 4.0700e-003        |          | 12.8671        | 12.8671        | 2.6000e-004        |                    | 12.8737        |
| <b>Total</b> | <b>0.0243</b> | <b>2.5900e-003</b> | <b>0.0361</b> | <b>1.3000e-004</b> | <b>0.0150</b> | <b>1.2000e-004</b> | <b>0.0151</b> | <b>3.9800e-003</b> | <b>1.1000e-004</b> | <b>4.0900e-003</b> |          | <b>13.1478</b> | <b>13.1478</b> | <b>2.7000e-004</b> | <b>1.0000e-005</b> | <b>13.1560</b> |

**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         | 0.0224        | 0.0000             | 1.0000e-004   | 0.0000             |               | 0.0000             | 0.0000        |                    | 0.0000             | 0.0000             |          | 2.2000e-004    | 2.2000e-004    | 0.0000             |                    | 2.3000e-004    |
| Energy       | 3.0000e-005   | 2.3000e-004        | 2.0000e-004   | 0.0000             |               | 2.0000e-005        | 2.0000e-005   |                    | 2.0000e-005        | 2.0000e-005        |          | 0.2804         | 0.2804         | 1.0000e-005        | 1.0000e-005        | 0.2821         |
| Mobile       | 1.8900e-003   | 2.3600e-003        | 0.0358        | 1.3000e-004        | 0.0150        | 1.0000e-004        | 0.0151        | 3.9800e-003        | 9.0000e-005        | 4.0700e-003        |          | 12.8671        | 12.8671        | 2.6000e-004        |                    | 12.8737        |
| <b>Total</b> | <b>0.0243</b> | <b>2.5900e-003</b> | <b>0.0361</b> | <b>1.3000e-004</b> | <b>0.0150</b> | <b>1.2000e-004</b> | <b>0.0151</b> | <b>3.9800e-003</b> | <b>1.1000e-004</b> | <b>4.0900e-003</b> |          | <b>13.1478</b> | <b>13.1478</b> | <b>2.7000e-004</b> | <b>1.0000e-005</b> | <b>13.1560</b> |

## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

|                   | 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 |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| 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            | Grading    | Grading    | 9/24/2019  | 9/24/2019 | 5             | 1        |                   |

**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 0.47****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

| Phase Name | Offroad Equipment Type            | Amount | Usage Hours | Horse Power | Load Factor |
|------------|-----------------------------------|--------|-------------|-------------|-------------|
| Grading    | Concrete/Industrial Saws          | 0      | 0.00        | 81          | 0.73        |
| Grading    | Crushing/Proc. Equipment          | 1      | 7.50        | 415         | 0.78        |
| Grading    | Excavators                        | 1      | 7.50        | 270         | 0.38        |
| Grading    | Graders                           | 1      | 7.50        | 187         | 0.41        |
| Grading    | Other Construction Equipment      | 1      | 7.50        | 405         | 0.42        |
| Grading    | Other Material Handling Equipment | 2      | 7.50        | 168         | 0.40        |
| Grading    | Rubber Tired Dozers               | 1      | 7.50        | 405         | 0.40        |
| Grading    | Skid Steer Loaders                | 1      | 7.50        | 82          | 0.37        |
| Grading    | Tractors/Loaders/Backhoes         | 1      | 7.50        | 400         | 0.37        |

## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

**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 |
|------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Grading    | 9                       | 60.00              | 0.00               | 350.00              | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

**3.2 Grading - 2019****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 |               |                |                |               | 6.3421        | 0.0000        | 6.3421        | 3.1871         | 0.0000        | 3.1871        |          |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.7249        | 57.8591        | 38.9466        | 0.0934        |               | 2.2912        | 2.2912        |                | 2.1383        | 2.1383        |          | 9,640.4926        | 9,640.4926        | 2.2270        |     | 9,696.1663        |
| <b>Total</b>  | <b>5.7249</b> | <b>57.8591</b> | <b>38.9466</b> | <b>0.0934</b> | <b>6.3421</b> | <b>2.2912</b> | <b>8.6333</b> | <b>3.1871</b>  | <b>2.1383</b> | <b>5.3255</b> |          | <b>9,640.4926</b> | <b>9,640.4926</b> | <b>2.2270</b> |     | <b>9,696.1663</b> |

## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

**3.2 Grading - 2019****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      | 2.8759        | 101.8933        | 19.5024        | 0.2745        | 6.1161        | 0.3780        | 6.4941        | 1.6761         | 0.3617        | 2.0378        |          | 29,638.6016        | 29,638.6016        | 2.0219        |     | 29,689.1483        |
| 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             |
| Worker       | 0.2939        | 0.2045          | 2.6960         | 7.1200e-003   | 0.6707        | 5.2200e-003   | 0.6759        | 0.1779         | 4.8100e-003   | 0.1827        |          | 708.5934           | 708.5934           | 0.0222        |     | 709.1475           |
| <b>Total</b> | <b>3.1698</b> | <b>102.0978</b> | <b>22.1985</b> | <b>0.2816</b> | <b>6.7868</b> | <b>0.3832</b> | <b>7.1700</b> | <b>1.8540</b>  | <b>0.3665</b> | <b>2.2205</b> |          | <b>30,347.1951</b> | <b>30,347.1951</b> | <b>2.0440</b> |     | <b>30,398.2957</b> |

**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 |               |                |                |               | 6.3421        | 0.0000        | 6.3421        | 3.1871         | 0.0000        | 3.1871        |               |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 4.4671        | 48.2999        | 44.9036        | 0.0934        |               | 1.9540        | 1.9540        |                | 1.8011        | 1.8011        | 0.0000        | 9,640.4926        | 9,640.4926        | 2.2270        |     | 9,696.1663        |
| <b>Total</b>  | <b>4.4671</b> | <b>48.2999</b> | <b>44.9036</b> | <b>0.0934</b> | <b>6.3421</b> | <b>1.9540</b> | <b>8.2961</b> | <b>3.1871</b>  | <b>1.8011</b> | <b>4.9883</b> | <b>0.0000</b> | <b>9,640.4926</b> | <b>9,640.4926</b> | <b>2.2270</b> |     | <b>9,696.1663</b> |



## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

**3.2 Grading - 2019****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      | 2.8759        | 101.8933        | 19.5024        | 0.2745        | 6.1161        | 0.3780        | 6.4941        | 1.6761         | 0.3617        | 2.0378        |          | 29,638.60<br>16         | 29,638.60<br>16         | 2.0219        |     | 29,689.14<br>83         |
| 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                  |
| Worker       | 0.2939        | 0.2045          | 2.6960         | 7.1200e-003   | 0.6707        | 5.2200e-003   | 0.6759        | 0.1779         | 4.8100e-003   | 0.1827        |          | 708.5934                | 708.5934                | 0.0222        |     | 709.1475                |
| <b>Total</b> | <b>3.1698</b> | <b>102.0978</b> | <b>22.1985</b> | <b>0.2816</b> | <b>6.7868</b> | <b>0.3832</b> | <b>7.1700</b> | <b>1.8540</b>  | <b>0.3665</b> | <b>2.2205</b> |          | <b>30,347.19<br/>51</b> | <b>30,347.19<br/>51</b> | <b>2.0440</b> |     | <b>30,398.29<br/>57</b> |

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

|             | 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   | 1.8900e-003 | 2.3600e-003 | 0.0358 | 1.3000e-004 | 0.0150        | 1.0000e-004  | 0.0151     | 3.9800e-003    | 9.0000e-005   | 4.0700e-003 |          | 12.8671   | 12.8671   | 2.6000e-004 |     | 12.8737 |
| Unmitigated | 1.8900e-003 | 2.3600e-003 | 0.0358 | 1.3000e-004 | 0.0150        | 1.0000e-004  | 0.0151     | 3.9800e-003    | 9.0000e-005   | 4.0700e-003 |          | 12.8671   | 12.8671   | 2.6000e-004 |     | 12.8737 |

## 4.2 Trip Summary Information

| Land Use                         | Average Daily Trip Rate |          |        | Unmitigated | Mitigated  |
|----------------------------------|-------------------------|----------|--------|-------------|------------|
|                                  | Weekday                 | Saturday | Sunday | Annual VMT  | Annual VMT |
| Unrefrigerated Warehouse-No Rail | 1.68                    | 1.68     | 1.68   | 7,200       | 7,200      |
| Total                            | 1.68                    | 1.68     | 1.68   | 7,200       | 7,200      |

## 4.3 Trip Type Information

| Land Use                    | Miles      |            |             | Trip %     |            |             | Trip Purpose % |          |         |
|-----------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
|                             | 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 |
| Unrefrigerated Warehouse-No | 16.60      | 8.40       | 6.90        | 59.00      | 0.00       | 41.00       | 92             | 5        | 3       |

## 4.4 Fleet Mix

| Land Use                         | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Unrefrigerated Warehouse-No Rail | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 5.0 Energy Detail

## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

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   | 3.0000e-005 | 2.3000e-004 | 2.0000e-004 | 0.0000 |               | 2.0000e-005  | 2.0000e-005 |                | 2.0000e-005   | 2.0000e-005 |          | 0.2804    | 0.2804    | 1.0000e-005 | 1.0000e-005 | 0.2821 |
| NaturalGas Unmitigated | 3.0000e-005 | 2.3000e-004 | 2.0000e-004 | 0.0000 |               | 2.0000e-005  | 2.0000e-005 |                | 2.0000e-005   | 2.0000e-005 |          | 0.2804    | 0.2804    | 1.0000e-005 | 1.0000e-005 | 0.2821 |

**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   |               |               |                    |                    |               |
| Unrefrigerated Warehouse-No Rail | 2.38356        | 3.0000e-005        | 2.3000e-004        | 2.0000e-004        | 0.0000        |               | 2.0000e-005        | 2.0000e-005        |                | 2.0000e-005        | 2.0000e-005        |          | 0.2804        | 0.2804        | 1.0000e-005        | 1.0000e-005        | 0.2821        |
| <b>Total</b>                     |                | <b>3.0000e-005</b> | <b>2.3000e-004</b> | <b>2.0000e-004</b> | <b>0.0000</b> |               | <b>2.0000e-005</b> | <b>2.0000e-005</b> |                | <b>2.0000e-005</b> | <b>2.0000e-005</b> |          | <b>0.2804</b> | <b>0.2804</b> | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.2821</b> |

## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

**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   |               |               |                    |                    |               |
| Unrefrigerated Warehouse-No Rail | 0.00238356     | 3.0000e-005        | 2.3000e-004        | 2.0000e-004        | 0.0000        |               | 2.0000e-005        | 2.0000e-005        |                | 2.0000e-005        | 2.0000e-005        |          | 0.2804        | 0.2804        | 1.0000e-005        | 1.0000e-005        | 0.2821        |
| <b>Total</b>                     |                | <b>3.0000e-005</b> | <b>2.3000e-004</b> | <b>2.0000e-004</b> | <b>0.0000</b> |               | <b>2.0000e-005</b> | <b>2.0000e-005</b> |                | <b>2.0000e-005</b> | <b>2.0000e-005</b> |          | <b>0.2804</b> | <b>0.2804</b> | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.2821</b> |

**6.0 Area Detail****6.1 Mitigation Measures Area**

|             | 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   | 0.0224 | 0.0000 | 1.0000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 2.2000e-004 | 2.2000e-004 | 0.0000 |     | 2.3000e-004 |
| Unmitigated | 0.0224 | 0.0000 | 1.0000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 2.2000e-004 | 2.2000e-004 | 0.0000 |     | 2.3000e-004 |

## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

**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 | 2.5400e-003   |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0198        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 1.0000e-005   | 0.0000        | 1.0000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 2.2000e-004        | 2.2000e-004        | 0.0000        |     | 2.3000e-004        |
| <b>Total</b>          | <b>0.0224</b> | <b>0.0000</b> | <b>1.0000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>2.2000e-004</b> | <b>2.2000e-004</b> | <b>0.0000</b> |     | <b>2.3000e-004</b> |

**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 | 2.5400e-003   |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0198        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 1.0000e-005   | 0.0000        | 1.0000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 2.2000e-004        | 2.2000e-004        | 0.0000        |     | 2.3000e-004        |
| <b>Total</b>          | <b>0.0224</b> | <b>0.0000</b> | <b>1.0000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>2.2000e-004</b> | <b>2.2000e-004</b> | <b>0.0000</b> |     | <b>2.3000e-004</b> |

**7.0 Water Detail**

## The Park @ Live Oak (Landfill Operations) - South Coast AQMD Air District, Summer

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**7.1 Mitigation Measures Water**

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**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

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**9.0 Operational Offroad**

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| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

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**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 |
|----------------|--------|
|----------------|--------|

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**11.0 Vegetation**

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The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**The Park @ Live Oak (Landfilling Operations)**  
**South Coast AQMD Air District, Summer**

## 1.0 Project Characteristics

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### 1.1 Land Usage

| Land Uses                        | Size | Metric   | Lot Acreage | Floor Surface Area | Population |
|----------------------------------|------|----------|-------------|--------------------|------------|
| Unrefrigerated Warehouse-No Rail | 1.00 | 1000sqft | 0.02        | 1,000.00           | 0          |

### 1.2 Other Project Characteristics

|                                 |                            |                                 |       |                                  |       |
|---------------------------------|----------------------------|---------------------------------|-------|----------------------------------|-------|
| <b>Urbanization</b>             | Urban                      | <b>Wind Speed (m/s)</b>         | 2.2   | <b>Precipitation Freq (Days)</b> | 31    |
| <b>Climate Zone</b>             | 9                          |                                 |       | <b>Operational Year</b>          | 2021  |
| <b>Utility Company</b>          | Southern California Edison |                                 |       |                                  |       |
| <b>CO2 Intensity (lb/MW hr)</b> | 702.44                     | <b>CH4 Intensity (lb/MW hr)</b> | 0.029 | <b>N2O Intensity (lb/MW hr)</b>  | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Equipment Emission

Off-road Equipment - Rubber Tired Dozer represents Wheel Dozer with 450 HP; Off-Highway Trucks represents Rock Trucks; Other Construction Equipment represents Water Trucks (4,000 Gal)

Trips and VMT - Based on information provided by the applicant.

Grading - 0.5 acres graded per day based on equipment list

Construction Off-road Equipment Mitigation - Tier 4 Final/Interim engines for Crushing and Excavating Equipment

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

| Table Name              | Column Name                  | Default Value | New Value      |
|-------------------------|------------------------------|---------------|----------------|
| tblAreaCoating          | Area_Nonresidential_Exterior | 500           | 0              |
| tblAreaCoating          | Area_Nonresidential_Interior | 1500          | 0              |
| tblConstEquipMitigation | NumberOfEquipmentMitigated   | 0.00          | 1.00           |
| tblConstEquipMitigation | NumberOfEquipmentMitigated   | 0.00          | 5.00           |
| tblConstEquipMitigation | Tier                         | No Change     | Tier 4 Interim |
| tblConstEquipMitigation | Tier                         | No Change     | Tier 4 Final   |
| tblFleetMix             | HHD                          | 0.03          | 0.00           |
| tblFleetMix             | LDA                          | 0.55          | 0.00           |
| tblFleetMix             | LDT1                         | 0.04          | 0.00           |
| tblFleetMix             | LDT2                         | 0.20          | 0.00           |
| tblFleetMix             | LHD1                         | 0.02          | 0.00           |
| tblFleetMix             | LHD2                         | 5.8510e-003   | 0.00           |
| tblFleetMix             | MCY                          | 4.8170e-003   | 0.00           |
| tblFleetMix             | MDV                          | 0.12          | 0.00           |
| tblFleetMix             | MH                           | 9.2500e-004   | 0.00           |
| tblFleetMix             | MHD                          | 0.02          | 0.00           |
| tblFleetMix             | OBUS                         | 2.0700e-003   | 0.00           |
| tblFleetMix             | SBUS                         | 7.0700e-004   | 0.00           |
| tblFleetMix             | UBUS                         | 1.8770e-003   | 0.00           |
| tblGrading              | MaterialImported             | 0.00          | 1,750.00       |
| tblOffRoadEquipment     | HorsePower                   | 247.00        | 450.00         |
| tblOffRoadEquipment     | HorsePower                   | 85.00         | 415.00         |
| tblOffRoadEquipment     | HorsePower                   | 158.00        | 303.00         |
| tblOffRoadEquipment     | HorsePower                   | 402.00        | 683.00         |
| tblOffRoadEquipment     | LoadFactor                   | 0.38          | 0.40           |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount   | 1.00          | 0.00           |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|                     |                            |             |             |
|---------------------|----------------------------|-------------|-------------|
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00        | 0.00        |
| tblOffRoadEquipment | UsageHours                 | 8.00        | 0.00        |
| tblOffRoadEquipment | UsageHours                 | 1.00        | 7.50        |
| tblOffRoadEquipment | UsageHours                 | 6.00        | 0.00        |
| tblTripsAndVMT      | HaulingTripNumber          | 219.00      | 0.00        |
| tblTripsAndVMT      | WorkerTripNumber           | 33.00       | 0.00        |
| tblVehicleEF        | HHD                        | 0.75        | 0.85        |
| tblVehicleEF        | HHD                        | 0.09        | 0.08        |
| tblVehicleEF        | HHD                        | 0.09        | 0.12        |
| tblVehicleEF        | HHD                        | 2.69        | 3.14        |
| tblVehicleEF        | HHD                        | 0.97        | 0.99        |
| tblVehicleEF        | HHD                        | 2.90        | 3.18        |
| tblVehicleEF        | HHD                        | 4,950.31    | 4,992.93    |
| tblVehicleEF        | HHD                        | 1,610.72    | 1,647.55    |
| tblVehicleEF        | HHD                        | 9.10        | 9.63        |
| tblVehicleEF        | HHD                        | 22.19       | 25.01       |
| tblVehicleEF        | HHD                        | 3.79        | 4.55        |
| tblVehicleEF        | HHD                        | 19.75       | 19.77       |
| tblVehicleEF        | HHD                        | 0.02        | 0.03        |
| tblVehicleEF        | HHD                        | 0.06        | 0.06        |
| tblVehicleEF        | HHD                        | 0.04        | 0.04        |
| tblVehicleEF        | HHD                        | 0.02        | 0.02        |
| tblVehicleEF        | HHD                        | 7.7000e-005 | 1.1800e-004 |
| tblVehicleEF        | HHD                        | 0.02        | 0.03        |
| tblVehicleEF        | HHD                        | 0.03        | 0.03        |
| tblVehicleEF        | HHD                        | 8.8180e-003 | 8.8190e-003 |
| tblVehicleEF        | HHD                        | 0.02        | 0.02        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | HHD | 7.1000e-005 | 1.1000e-004 |
| tblVehicleEF | HHD | 1.0500e-004 | 1.3200e-004 |
| tblVehicleEF | HHD | 4.2950e-003 | 5.9330e-003 |
| tblVehicleEF | HHD | 0.67        | 0.79        |
| tblVehicleEF | HHD | 7.5000e-005 | 9.1000e-005 |
| tblVehicleEF | HHD | 0.13        | 0.14        |
| tblVehicleEF | HHD | 3.6200e-004 | 4.8800e-004 |
| tblVehicleEF | HHD | 0.08        | 0.10        |
| tblVehicleEF | HHD | 0.05        | 0.05        |
| tblVehicleEF | HHD | 0.01        | 0.02        |
| tblVehicleEF | HHD | 1.3900e-004 | 1.4900e-004 |
| tblVehicleEF | HHD | 1.0500e-004 | 1.3200e-004 |
| tblVehicleEF | HHD | 4.2950e-003 | 5.9330e-003 |
| tblVehicleEF | HHD | 0.79        | 0.92        |
| tblVehicleEF | HHD | 7.5000e-005 | 9.1000e-005 |
| tblVehicleEF | HHD | 0.23        | 0.24        |
| tblVehicleEF | HHD | 3.6200e-004 | 4.8800e-004 |
| tblVehicleEF | HHD | 0.09        | 0.11        |
| tblVehicleEF | HHD | 0.71        | 0.80        |
| tblVehicleEF | HHD | 0.09        | 0.08        |
| tblVehicleEF | HHD | 0.08        | 0.11        |
| tblVehicleEF | HHD | 1.96        | 2.29        |
| tblVehicleEF | HHD | 0.97        | 0.99        |
| tblVehicleEF | HHD | 2.75        | 3.02        |
| tblVehicleEF | HHD | 5,242.63    | 5,285.68    |
| tblVehicleEF | HHD | 1,610.72    | 1,647.55    |
| tblVehicleEF | HHD | 9.10        | 9.63        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | HHD | 22.90       | 25.81       |
| tblVehicleEF | HHD | 3.59        | 4.30        |
| tblVehicleEF | HHD | 19.74       | 19.76       |
| tblVehicleEF | HHD | 0.01        | 0.03        |
| tblVehicleEF | HHD | 0.06        | 0.06        |
| tblVehicleEF | HHD | 0.04        | 0.04        |
| tblVehicleEF | HHD | 0.02        | 0.02        |
| tblVehicleEF | HHD | 7.7000e-005 | 1.1800e-004 |
| tblVehicleEF | HHD | 0.01        | 0.02        |
| tblVehicleEF | HHD | 0.03        | 0.03        |
| tblVehicleEF | HHD | 8.8180e-003 | 8.8190e-003 |
| tblVehicleEF | HHD | 0.02        | 0.02        |
| tblVehicleEF | HHD | 7.1000e-005 | 1.1000e-004 |
| tblVehicleEF | HHD | 1.7000e-004 | 2.1500e-004 |
| tblVehicleEF | HHD | 4.5010e-003 | 6.1900e-003 |
| tblVehicleEF | HHD | 0.64        | 0.75        |
| tblVehicleEF | HHD | 1.1700e-004 | 1.4700e-004 |
| tblVehicleEF | HHD | 0.13        | 0.14        |
| tblVehicleEF | HHD | 3.5600e-004 | 4.8400e-004 |
| tblVehicleEF | HHD | 0.07        | 0.10        |
| tblVehicleEF | HHD | 0.05        | 0.05        |
| tblVehicleEF | HHD | 0.01        | 0.02        |
| tblVehicleEF | HHD | 1.3600e-004 | 1.4700e-004 |
| tblVehicleEF | HHD | 1.7000e-004 | 2.1500e-004 |
| tblVehicleEF | HHD | 4.5010e-003 | 6.1900e-003 |
| tblVehicleEF | HHD | 0.74        | 0.87        |
| tblVehicleEF | HHD | 1.1700e-004 | 1.4700e-004 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | HHD | 0.23        | 0.24        |
| tblVehicleEF | HHD | 3.5600e-004 | 4.8400e-004 |
| tblVehicleEF | HHD | 0.08        | 0.11        |
| tblVehicleEF | HHD | 0.81        | 0.91        |
| tblVehicleEF | HHD | 0.09        | 0.08        |
| tblVehicleEF | HHD | 0.09        | 0.12        |
| tblVehicleEF | HHD | 3.70        | 4.32        |
| tblVehicleEF | HHD | 0.97        | 0.99        |
| tblVehicleEF | HHD | 2.92        | 3.20        |
| tblVehicleEF | HHD | 4,546.63    | 4,588.64    |
| tblVehicleEF | HHD | 1,610.72    | 1,647.55    |
| tblVehicleEF | HHD | 9.10        | 9.63        |
| tblVehicleEF | HHD | 21.21       | 23.92       |
| tblVehicleEF | HHD | 3.74        | 4.48        |
| tblVehicleEF | HHD | 19.75       | 19.77       |
| tblVehicleEF | HHD | 0.02        | 0.04        |
| tblVehicleEF | HHD | 0.06        | 0.06        |
| tblVehicleEF | HHD | 0.04        | 0.04        |
| tblVehicleEF | HHD | 0.02        | 0.02        |
| tblVehicleEF | HHD | 7.7000e-005 | 1.1800e-004 |
| tblVehicleEF | HHD | 0.02        | 0.03        |
| tblVehicleEF | HHD | 0.03        | 0.03        |
| tblVehicleEF | HHD | 8.8180e-003 | 8.8190e-003 |
| tblVehicleEF | HHD | 0.02        | 0.02        |
| tblVehicleEF | HHD | 7.1000e-005 | 1.1000e-004 |
| tblVehicleEF | HHD | 1.0000e-004 | 1.2900e-004 |
| tblVehicleEF | HHD | 4.6100e-003 | 6.7430e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | HHD | 0.73        | 0.86        |
| tblVehicleEF | HHD | 7.2000e-005 | 8.9000e-005 |
| tblVehicleEF | HHD | 0.13        | 0.14        |
| tblVehicleEF | HHD | 3.9100e-004 | 5.2300e-004 |
| tblVehicleEF | HHD | 0.08        | 0.10        |
| tblVehicleEF | HHD | 0.04        | 0.04        |
| tblVehicleEF | HHD | 0.01        | 0.02        |
| tblVehicleEF | HHD | 1.3900e-004 | 1.5000e-004 |
| tblVehicleEF | HHD | 1.0000e-004 | 1.2900e-004 |
| tblVehicleEF | HHD | 4.6100e-003 | 6.7430e-003 |
| tblVehicleEF | HHD | 0.85        | 0.99        |
| tblVehicleEF | HHD | 7.2000e-005 | 8.9000e-005 |
| tblVehicleEF | HHD | 0.23        | 0.24        |
| tblVehicleEF | HHD | 3.9100e-004 | 5.2300e-004 |
| tblVehicleEF | HHD | 0.09        | 0.11        |
| tblVehicleEF | LDA | 5.2110e-003 | 6.4660e-003 |
| tblVehicleEF | LDA | 5.8420e-003 | 7.8200e-003 |
| tblVehicleEF | LDA | 0.65        | 0.76        |
| tblVehicleEF | LDA | 1.21        | 1.52        |
| tblVehicleEF | LDA | 275.32      | 296.90      |
| tblVehicleEF | LDA | 58.96       | 63.02       |
| tblVehicleEF | LDA | 0.05        | 0.07        |
| tblVehicleEF | LDA | 0.08        | 0.10        |
| tblVehicleEF | LDA | 2.0440e-003 | 2.1320e-003 |
| tblVehicleEF | LDA | 2.2900e-003 | 2.3470e-003 |
| tblVehicleEF | LDA | 1.8840e-003 | 1.9670e-003 |
| tblVehicleEF | LDA | 2.1060e-003 | 2.1590e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | LDA | 0.04        | 0.05        |
| tblVehicleEF | LDA | 0.11        | 0.12        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.01        | 0.02        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.08        | 0.11        |
| tblVehicleEF | LDA | 2.7580e-003 | 2.9750e-003 |
| tblVehicleEF | LDA | 6.1000e-004 | 6.5600e-004 |
| tblVehicleEF | LDA | 0.04        | 0.05        |
| tblVehicleEF | LDA | 0.11        | 0.12        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.02        | 0.02        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.09        | 0.12        |
| tblVehicleEF | LDA | 5.5820e-003 | 6.9190e-003 |
| tblVehicleEF | LDA | 5.1760e-003 | 6.9240e-003 |
| tblVehicleEF | LDA | 0.73        | 0.85        |
| tblVehicleEF | LDA | 1.04        | 1.31        |
| tblVehicleEF | LDA | 290.06      | 312.75      |
| tblVehicleEF | LDA | 58.96       | 63.02       |
| tblVehicleEF | LDA | 0.05        | 0.06        |
| tblVehicleEF | LDA | 0.07        | 0.09        |
| tblVehicleEF | LDA | 2.0440e-003 | 2.1320e-003 |
| tblVehicleEF | LDA | 2.2900e-003 | 2.3470e-003 |
| tblVehicleEF | LDA | 1.8840e-003 | 1.9670e-003 |
| tblVehicleEF | LDA | 2.1060e-003 | 2.1590e-003 |
| tblVehicleEF | LDA | 0.07        | 0.08        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | LDA | 0.11        | 0.13        |
| tblVehicleEF | LDA | 0.06        | 0.07        |
| tblVehicleEF | LDA | 0.01        | 0.02        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.07        | 0.09        |
| tblVehicleEF | LDA | 2.9060e-003 | 3.1350e-003 |
| tblVehicleEF | LDA | 6.0700e-004 | 6.5300e-004 |
| tblVehicleEF | LDA | 0.07        | 0.08        |
| tblVehicleEF | LDA | 0.11        | 0.13        |
| tblVehicleEF | LDA | 0.06        | 0.07        |
| tblVehicleEF | LDA | 0.02        | 0.03        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.08        | 0.10        |
| tblVehicleEF | LDA | 5.0990e-003 | 6.3270e-003 |
| tblVehicleEF | LDA | 5.9770e-003 | 8.0020e-003 |
| tblVehicleEF | LDA | 0.63        | 0.74        |
| tblVehicleEF | LDA | 1.25        | 1.56        |
| tblVehicleEF | LDA | 270.53      | 291.73      |
| tblVehicleEF | LDA | 58.96       | 63.02       |
| tblVehicleEF | LDA | 0.05        | 0.06        |
| tblVehicleEF | LDA | 0.08        | 0.10        |
| tblVehicleEF | LDA | 2.0440e-003 | 2.1320e-003 |
| tblVehicleEF | LDA | 2.2900e-003 | 2.3470e-003 |
| tblVehicleEF | LDA | 1.8840e-003 | 1.9670e-003 |
| tblVehicleEF | LDA | 2.1060e-003 | 2.1590e-003 |
| tblVehicleEF | LDA | 0.04        | 0.05        |
| tblVehicleEF | LDA | 0.11        | 0.14        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDA  | 0.04        | 0.04        |
| tblVehicleEF | LDA  | 0.01        | 0.02        |
| tblVehicleEF | LDA  | 0.05        | 0.05        |
| tblVehicleEF | LDA  | 0.08        | 0.11        |
| tblVehicleEF | LDA  | 2.7100e-003 | 2.9230e-003 |
| tblVehicleEF | LDA  | 6.1100e-004 | 6.5700e-004 |
| tblVehicleEF | LDA  | 0.04        | 0.05        |
| tblVehicleEF | LDA  | 0.11        | 0.14        |
| tblVehicleEF | LDA  | 0.04        | 0.04        |
| tblVehicleEF | LDA  | 0.02        | 0.02        |
| tblVehicleEF | LDA  | 0.05        | 0.05        |
| tblVehicleEF | LDA  | 0.09        | 0.12        |
| tblVehicleEF | LDT1 | 0.01        | 0.02        |
| tblVehicleEF | LDT1 | 0.02        | 0.02        |
| tblVehicleEF | LDT1 | 1.65        | 1.99        |
| tblVehicleEF | LDT1 | 3.08        | 3.80        |
| tblVehicleEF | LDT1 | 339.89      | 357.64      |
| tblVehicleEF | LDT1 | 71.61       | 74.91       |
| tblVehicleEF | LDT1 | 0.16        | 0.19        |
| tblVehicleEF | LDT1 | 0.18        | 0.23        |
| tblVehicleEF | LDT1 | 3.3000e-003 | 3.6680e-003 |
| tblVehicleEF | LDT1 | 3.5610e-003 | 3.9250e-003 |
| tblVehicleEF | LDT1 | 3.0390e-003 | 3.3780e-003 |
| tblVehicleEF | LDT1 | 3.2750e-003 | 3.6110e-003 |
| tblVehicleEF | LDT1 | 0.14        | 0.16        |
| tblVehicleEF | LDT1 | 0.29        | 0.33        |
| tblVehicleEF | LDT1 | 0.11        | 0.13        |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT1 | 0.04        | 0.05        |
| tblVehicleEF | LDT1 | 0.18        | 0.20        |
| tblVehicleEF | LDT1 | 0.21        | 0.27        |
| tblVehicleEF | LDT1 | 3.4200e-003 | 3.6030e-003 |
| tblVehicleEF | LDT1 | 7.7000e-004 | 8.1600e-004 |
| tblVehicleEF | LDT1 | 0.14        | 0.16        |
| tblVehicleEF | LDT1 | 0.29        | 0.33        |
| tblVehicleEF | LDT1 | 0.11        | 0.13        |
| tblVehicleEF | LDT1 | 0.05        | 0.07        |
| tblVehicleEF | LDT1 | 0.18        | 0.20        |
| tblVehicleEF | LDT1 | 0.24        | 0.30        |
| tblVehicleEF | LDT1 | 0.02        | 0.02        |
| tblVehicleEF | LDT1 | 0.01        | 0.02        |
| tblVehicleEF | LDT1 | 1.81        | 2.18        |
| tblVehicleEF | LDT1 | 2.63        | 3.24        |
| tblVehicleEF | LDT1 | 356.82      | 375.39      |
| tblVehicleEF | LDT1 | 71.61       | 74.91       |
| tblVehicleEF | LDT1 | 0.14        | 0.17        |
| tblVehicleEF | LDT1 | 0.17        | 0.21        |
| tblVehicleEF | LDT1 | 3.3000e-003 | 3.6680e-003 |
| tblVehicleEF | LDT1 | 3.5610e-003 | 3.9250e-003 |
| tblVehicleEF | LDT1 | 3.0390e-003 | 3.3780e-003 |
| tblVehicleEF | LDT1 | 3.2750e-003 | 3.6110e-003 |
| tblVehicleEF | LDT1 | 0.24        | 0.27        |
| tblVehicleEF | LDT1 | 0.31        | 0.36        |
| tblVehicleEF | LDT1 | 0.17        | 0.20        |
| tblVehicleEF | LDT1 | 0.04        | 0.05        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT1 | 0.17        | 0.19        |
| tblVehicleEF | LDT1 | 0.19        | 0.24        |
| tblVehicleEF | LDT1 | 3.5920e-003 | 3.7830e-003 |
| tblVehicleEF | LDT1 | 7.6200e-004 | 8.0600e-004 |
| tblVehicleEF | LDT1 | 0.24        | 0.27        |
| tblVehicleEF | LDT1 | 0.31        | 0.36        |
| tblVehicleEF | LDT1 | 0.17        | 0.20        |
| tblVehicleEF | LDT1 | 0.06        | 0.07        |
| tblVehicleEF | LDT1 | 0.17        | 0.19        |
| tblVehicleEF | LDT1 | 0.21        | 0.26        |
| tblVehicleEF | LDT1 | 0.01        | 0.02        |
| tblVehicleEF | LDT1 | 0.02        | 0.02        |
| tblVehicleEF | LDT1 | 1.59        | 1.93        |
| tblVehicleEF | LDT1 | 3.17        | 3.91        |
| tblVehicleEF | LDT1 | 334.24      | 351.73      |
| tblVehicleEF | LDT1 | 71.61       | 74.91       |
| tblVehicleEF | LDT1 | 0.15        | 0.19        |
| tblVehicleEF | LDT1 | 0.18        | 0.23        |
| tblVehicleEF | LDT1 | 3.3000e-003 | 3.6680e-003 |
| tblVehicleEF | LDT1 | 3.5610e-003 | 3.9250e-003 |
| tblVehicleEF | LDT1 | 3.0390e-003 | 3.3780e-003 |
| tblVehicleEF | LDT1 | 3.2750e-003 | 3.6110e-003 |
| tblVehicleEF | LDT1 | 0.14        | 0.16        |
| tblVehicleEF | LDT1 | 0.33        | 0.38        |
| tblVehicleEF | LDT1 | 0.11        | 0.12        |
| tblVehicleEF | LDT1 | 0.04        | 0.05        |
| tblVehicleEF | LDT1 | 0.21        | 0.24        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT1 | 0.22        | 0.28        |
| tblVehicleEF | LDT1 | 3.3630e-003 | 3.5430e-003 |
| tblVehicleEF | LDT1 | 7.7200e-004 | 8.1800e-004 |
| tblVehicleEF | LDT1 | 0.14        | 0.16        |
| tblVehicleEF | LDT1 | 0.33        | 0.38        |
| tblVehicleEF | LDT1 | 0.11        | 0.12        |
| tblVehicleEF | LDT1 | 0.05        | 0.07        |
| tblVehicleEF | LDT1 | 0.21        | 0.24        |
| tblVehicleEF | LDT1 | 0.24        | 0.31        |
| tblVehicleEF | LDT2 | 7.0440e-003 | 8.6130e-003 |
| tblVehicleEF | LDT2 | 7.1880e-003 | 9.5100e-003 |
| tblVehicleEF | LDT2 | 0.84        | 1.00        |
| tblVehicleEF | LDT2 | 1.49        | 1.89        |
| tblVehicleEF | LDT2 | 382.63      | 406.62      |
| tblVehicleEF | LDT2 | 81.02       | 85.85       |
| tblVehicleEF | LDT2 | 0.08        | 0.11        |
| tblVehicleEF | LDT2 | 0.12        | 0.17        |
| tblVehicleEF | LDT2 | 1.9920e-003 | 1.9950e-003 |
| tblVehicleEF | LDT2 | 2.3200e-003 | 2.3030e-003 |
| tblVehicleEF | LDT2 | 1.8320e-003 | 1.8350e-003 |
| tblVehicleEF | LDT2 | 2.1330e-003 | 2.1180e-003 |
| tblVehicleEF | LDT2 | 0.05        | 0.06        |
| tblVehicleEF | LDT2 | 0.11        | 0.13        |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.02        | 0.02        |
| tblVehicleEF | LDT2 | 0.06        | 0.07        |
| tblVehicleEF | LDT2 | 0.10        | 0.13        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT2 | 3.8330e-003 | 4.0750e-003 |
| tblVehicleEF | LDT2 | 8.3500e-004 | 8.9100e-004 |
| tblVehicleEF | LDT2 | 0.05        | 0.06        |
| tblVehicleEF | LDT2 | 0.11        | 0.13        |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.03        | 0.03        |
| tblVehicleEF | LDT2 | 0.06        | 0.07        |
| tblVehicleEF | LDT2 | 0.11        | 0.14        |
| tblVehicleEF | LDT2 | 7.5350e-003 | 9.1950e-003 |
| tblVehicleEF | LDT2 | 6.3730e-003 | 8.4280e-003 |
| tblVehicleEF | LDT2 | 0.94        | 1.11        |
| tblVehicleEF | LDT2 | 1.28        | 1.62        |
| tblVehicleEF | LDT2 | 402.38      | 427.54      |
| tblVehicleEF | LDT2 | 81.02       | 85.85       |
| tblVehicleEF | LDT2 | 0.07        | 0.09        |
| tblVehicleEF | LDT2 | 0.11        | 0.16        |
| tblVehicleEF | LDT2 | 1.9920e-003 | 1.9950e-003 |
| tblVehicleEF | LDT2 | 2.3200e-003 | 2.3030e-003 |
| tblVehicleEF | LDT2 | 1.8320e-003 | 1.8350e-003 |
| tblVehicleEF | LDT2 | 2.1330e-003 | 2.1180e-003 |
| tblVehicleEF | LDT2 | 0.08        | 0.09        |
| tblVehicleEF | LDT2 | 0.12        | 0.14        |
| tblVehicleEF | LDT2 | 0.07        | 0.08        |
| tblVehicleEF | LDT2 | 0.02        | 0.02        |
| tblVehicleEF | LDT2 | 0.06        | 0.07        |
| tblVehicleEF | LDT2 | 0.09        | 0.11        |
| tblVehicleEF | LDT2 | 4.0320e-003 | 4.2860e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT2 | 8.3200e-004 | 8.8600e-004 |
| tblVehicleEF | LDT2 | 0.08        | 0.09        |
| tblVehicleEF | LDT2 | 0.12        | 0.14        |
| tblVehicleEF | LDT2 | 0.07        | 0.08        |
| tblVehicleEF | LDT2 | 0.03        | 0.03        |
| tblVehicleEF | LDT2 | 0.06        | 0.07        |
| tblVehicleEF | LDT2 | 0.09        | 0.12        |
| tblVehicleEF | LDT2 | 6.8940e-003 | 8.4340e-003 |
| tblVehicleEF | LDT2 | 7.3550e-003 | 9.7300e-003 |
| tblVehicleEF | LDT2 | 0.81        | 0.96        |
| tblVehicleEF | LDT2 | 1.53        | 1.94        |
| tblVehicleEF | LDT2 | 376.06      | 399.66      |
| tblVehicleEF | LDT2 | 81.02       | 85.85       |
| tblVehicleEF | LDT2 | 0.08        | 0.10        |
| tblVehicleEF | LDT2 | 0.12        | 0.17        |
| tblVehicleEF | LDT2 | 1.9920e-003 | 1.9950e-003 |
| tblVehicleEF | LDT2 | 2.3200e-003 | 2.3030e-003 |
| tblVehicleEF | LDT2 | 1.8320e-003 | 1.8350e-003 |
| tblVehicleEF | LDT2 | 2.1330e-003 | 2.1180e-003 |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.12        | 0.14        |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.02        | 0.02        |
| tblVehicleEF | LDT2 | 0.07        | 0.08        |
| tblVehicleEF | LDT2 | 0.10        | 0.13        |
| tblVehicleEF | LDT2 | 3.7670e-003 | 4.0050e-003 |
| tblVehicleEF | LDT2 | 8.3600e-004 | 8.9200e-004 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.12        | 0.14        |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.02        | 0.03        |
| tblVehicleEF | LDT2 | 0.07        | 0.08        |
| tblVehicleEF | LDT2 | 0.11        | 0.14        |
| tblVehicleEF | LHD1 | 5.8640e-003 | 6.4120e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.02        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 0.15        | 0.16        |
| tblVehicleEF | LHD1 | 0.91        | 1.13        |
| tblVehicleEF | LHD1 | 2.81        | 3.23        |
| tblVehicleEF | LHD1 | 9.00        | 8.98        |
| tblVehicleEF | LHD1 | 610.88      | 628.01      |
| tblVehicleEF | LHD1 | 33.50       | 35.68       |
| tblVehicleEF | LHD1 | 0.08        | 0.07        |
| tblVehicleEF | LHD1 | 1.31        | 1.53        |
| tblVehicleEF | LHD1 | 1.05        | 1.14        |
| tblVehicleEF | LHD1 | 8.5300e-004 | 8.1700e-004 |
| tblVehicleEF | LHD1 | 0.01        | 9.8590e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 1.0090e-003 | 1.1990e-003 |
| tblVehicleEF | LHD1 | 8.1600e-004 | 7.8200e-004 |
| tblVehicleEF | LHD1 | 2.5040e-003 | 2.4650e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 9.2800e-004 | 1.1050e-003 |
| tblVehicleEF | LHD1 | 3.3200e-003 | 3.5670e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD1 | 0.10        | 0.11        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 1.9270e-003 | 2.0130e-003 |
| tblVehicleEF | LHD1 | 0.07        | 0.08        |
| tblVehicleEF | LHD1 | 0.31        | 0.32        |
| tblVehicleEF | LHD1 | 0.28        | 0.33        |
| tblVehicleEF | LHD1 | 9.0000e-005 | 9.1000e-005 |
| tblVehicleEF | LHD1 | 6.0020e-003 | 6.1830e-003 |
| tblVehicleEF | LHD1 | 3.8800e-004 | 4.1800e-004 |
| tblVehicleEF | LHD1 | 3.3200e-003 | 3.5670e-003 |
| tblVehicleEF | LHD1 | 0.10        | 0.11        |
| tblVehicleEF | LHD1 | 0.02        | 0.03        |
| tblVehicleEF | LHD1 | 1.9270e-003 | 2.0130e-003 |
| tblVehicleEF | LHD1 | 0.09        | 0.10        |
| tblVehicleEF | LHD1 | 0.31        | 0.32        |
| tblVehicleEF | LHD1 | 0.31        | 0.36        |
| tblVehicleEF | LHD1 | 5.8640e-003 | 6.4120e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.02        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 0.15        | 0.16        |
| tblVehicleEF | LHD1 | 0.92        | 1.14        |
| tblVehicleEF | LHD1 | 2.68        | 3.08        |
| tblVehicleEF | LHD1 | 9.00        | 8.98        |
| tblVehicleEF | LHD1 | 610.88      | 628.01      |
| tblVehicleEF | LHD1 | 33.50       | 35.68       |
| tblVehicleEF | LHD1 | 0.08        | 0.07        |
| tblVehicleEF | LHD1 | 1.23        | 1.43        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD1 | 1.01        | 1.10        |
| tblVehicleEF | LHD1 | 8.5300e-004 | 8.1700e-004 |
| tblVehicleEF | LHD1 | 0.01        | 9.8590e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 1.0090e-003 | 1.1990e-003 |
| tblVehicleEF | LHD1 | 8.1600e-004 | 7.8200e-004 |
| tblVehicleEF | LHD1 | 2.5040e-003 | 2.4650e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 9.2800e-004 | 1.1050e-003 |
| tblVehicleEF | LHD1 | 5.1880e-003 | 5.5850e-003 |
| tblVehicleEF | LHD1 | 0.11        | 0.12        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 2.9140e-003 | 3.0770e-003 |
| tblVehicleEF | LHD1 | 0.07        | 0.08        |
| tblVehicleEF | LHD1 | 0.30        | 0.31        |
| tblVehicleEF | LHD1 | 0.27        | 0.32        |
| tblVehicleEF | LHD1 | 9.0000e-005 | 9.1000e-005 |
| tblVehicleEF | LHD1 | 6.0030e-003 | 6.1830e-003 |
| tblVehicleEF | LHD1 | 3.8500e-004 | 4.1500e-004 |
| tblVehicleEF | LHD1 | 5.1880e-003 | 5.5850e-003 |
| tblVehicleEF | LHD1 | 0.11        | 0.12        |
| tblVehicleEF | LHD1 | 0.02        | 0.03        |
| tblVehicleEF | LHD1 | 2.9140e-003 | 3.0770e-003 |
| tblVehicleEF | LHD1 | 0.09        | 0.10        |
| tblVehicleEF | LHD1 | 0.30        | 0.31        |
| tblVehicleEF | LHD1 | 0.30        | 0.35        |
| tblVehicleEF | LHD1 | 5.8640e-003 | 6.4120e-003 |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD1 | 0.01        | 0.02        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 0.15        | 0.16        |
| tblVehicleEF | LHD1 | 0.91        | 1.12        |
| tblVehicleEF | LHD1 | 2.82        | 3.25        |
| tblVehicleEF | LHD1 | 9.00        | 8.98        |
| tblVehicleEF | LHD1 | 610.88      | 628.01      |
| tblVehicleEF | LHD1 | 33.50       | 35.68       |
| tblVehicleEF | LHD1 | 0.08        | 0.07        |
| tblVehicleEF | LHD1 | 1.28        | 1.50        |
| tblVehicleEF | LHD1 | 1.06        | 1.15        |
| tblVehicleEF | LHD1 | 8.5300e-004 | 8.1700e-004 |
| tblVehicleEF | LHD1 | 0.01        | 9.8590e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 1.0090e-003 | 1.1990e-003 |
| tblVehicleEF | LHD1 | 8.1600e-004 | 7.8200e-004 |
| tblVehicleEF | LHD1 | 2.5040e-003 | 2.4650e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 9.2800e-004 | 1.1050e-003 |
| tblVehicleEF | LHD1 | 3.3910e-003 | 3.6920e-003 |
| tblVehicleEF | LHD1 | 0.12        | 0.13        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 1.8940e-003 | 1.9880e-003 |
| tblVehicleEF | LHD1 | 0.07        | 0.08        |
| tblVehicleEF | LHD1 | 0.33        | 0.35        |
| tblVehicleEF | LHD1 | 0.28        | 0.33        |
| tblVehicleEF | LHD1 | 9.0000e-005 | 9.1000e-005 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD1 | 6.0020e-003 | 6.1830e-003 |
| tblVehicleEF | LHD1 | 3.8800e-004 | 4.1800e-004 |
| tblVehicleEF | LHD1 | 3.3910e-003 | 3.6920e-003 |
| tblVehicleEF | LHD1 | 0.12        | 0.13        |
| tblVehicleEF | LHD1 | 0.02        | 0.03        |
| tblVehicleEF | LHD1 | 1.8940e-003 | 1.9880e-003 |
| tblVehicleEF | LHD1 | 0.09        | 0.10        |
| tblVehicleEF | LHD1 | 0.33        | 0.35        |
| tblVehicleEF | LHD1 | 0.31        | 0.36        |
| tblVehicleEF | LHD2 | 4.2390e-003 | 4.7550e-003 |
| tblVehicleEF | LHD2 | 4.8300e-003 | 6.4800e-003 |
| tblVehicleEF | LHD2 | 9.6290e-003 | 0.01        |
| tblVehicleEF | LHD2 | 0.13        | 0.14        |
| tblVehicleEF | LHD2 | 0.41        | 0.53        |
| tblVehicleEF | LHD2 | 1.43        | 1.73        |
| tblVehicleEF | LHD2 | 13.72       | 13.70       |
| tblVehicleEF | LHD2 | 622.17      | 639.58      |
| tblVehicleEF | LHD2 | 28.08       | 30.04       |
| tblVehicleEF | LHD2 | 0.10        | 0.11        |
| tblVehicleEF | LHD2 | 0.93        | 1.25        |
| tblVehicleEF | LHD2 | 0.60        | 0.70        |
| tblVehicleEF | LHD2 | 1.2010e-003 | 1.2000e-003 |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 4.7800e-004 | 5.7800e-004 |
| tblVehicleEF | LHD2 | 2.6500e-003 | 2.6260e-003 |
| tblVehicleEF | LHD2 | 9.6020e-003 | 0.01        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD2 | 4.3900e-004 | 5.3200e-004 |
| tblVehicleEF | LHD2 | 1.3010e-003 | 1.5870e-003 |
| tblVehicleEF | LHD2 | 0.04        | 0.05        |
| tblVehicleEF | LHD2 | 0.01        | 0.02        |
| tblVehicleEF | LHD2 | 8.0500e-004 | 9.3200e-004 |
| tblVehicleEF | LHD2 | 0.05        | 0.06        |
| tblVehicleEF | LHD2 | 0.09        | 0.12        |
| tblVehicleEF | LHD2 | 0.13        | 0.17        |
| tblVehicleEF | LHD2 | 6.0640e-003 | 6.2420e-003 |
| tblVehicleEF | LHD2 | 3.0700e-004 | 3.3300e-004 |
| tblVehicleEF | LHD2 | 1.3010e-003 | 1.5870e-003 |
| tblVehicleEF | LHD2 | 0.04        | 0.05        |
| tblVehicleEF | LHD2 | 0.02        | 0.02        |
| tblVehicleEF | LHD2 | 8.0500e-004 | 9.3200e-004 |
| tblVehicleEF | LHD2 | 0.06        | 0.07        |
| tblVehicleEF | LHD2 | 0.09        | 0.12        |
| tblVehicleEF | LHD2 | 0.14        | 0.18        |
| tblVehicleEF | LHD2 | 4.2390e-003 | 4.7550e-003 |
| tblVehicleEF | LHD2 | 4.8960e-003 | 6.5770e-003 |
| tblVehicleEF | LHD2 | 9.2930e-003 | 0.01        |
| tblVehicleEF | LHD2 | 0.13        | 0.14        |
| tblVehicleEF | LHD2 | 0.41        | 0.54        |
| tblVehicleEF | LHD2 | 1.37        | 1.65        |
| tblVehicleEF | LHD2 | 13.72       | 13.70       |
| tblVehicleEF | LHD2 | 622.17      | 639.58      |
| tblVehicleEF | LHD2 | 28.08       | 30.04       |
| tblVehicleEF | LHD2 | 0.10        | 0.11        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD2 | 0.88        | 1.17        |
| tblVehicleEF | LHD2 | 0.58        | 0.67        |
| tblVehicleEF | LHD2 | 1.2010e-003 | 1.2000e-003 |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 4.7800e-004 | 5.7800e-004 |
| tblVehicleEF | LHD2 | 2.6500e-003 | 2.6260e-003 |
| tblVehicleEF | LHD2 | 9.6020e-003 | 0.01        |
| tblVehicleEF | LHD2 | 4.3900e-004 | 5.3200e-004 |
| tblVehicleEF | LHD2 | 2.0260e-003 | 2.4740e-003 |
| tblVehicleEF | LHD2 | 0.04        | 0.05        |
| tblVehicleEF | LHD2 | 0.01        | 0.02        |
| tblVehicleEF | LHD2 | 1.2020e-003 | 1.4090e-003 |
| tblVehicleEF | LHD2 | 0.05        | 0.06        |
| tblVehicleEF | LHD2 | 0.09        | 0.12        |
| tblVehicleEF | LHD2 | 0.13        | 0.16        |
| tblVehicleEF | LHD2 | 6.0640e-003 | 6.2420e-003 |
| tblVehicleEF | LHD2 | 3.0600e-004 | 3.3100e-004 |
| tblVehicleEF | LHD2 | 2.0260e-003 | 2.4740e-003 |
| tblVehicleEF | LHD2 | 0.04        | 0.05        |
| tblVehicleEF | LHD2 | 0.02        | 0.02        |
| tblVehicleEF | LHD2 | 1.2020e-003 | 1.4090e-003 |
| tblVehicleEF | LHD2 | 0.06        | 0.07        |
| tblVehicleEF | LHD2 | 0.09        | 0.12        |
| tblVehicleEF | LHD2 | 0.14        | 0.18        |
| tblVehicleEF | LHD2 | 4.2390e-003 | 4.7550e-003 |
| tblVehicleEF | LHD2 | 4.8130e-003 | 6.4560e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD2 | 9.6860e-003 | 0.01        |
| tblVehicleEF | LHD2 | 0.13        | 0.14        |
| tblVehicleEF | LHD2 | 0.40        | 0.53        |
| tblVehicleEF | LHD2 | 1.44        | 1.74        |
| tblVehicleEF | LHD2 | 13.72       | 13.70       |
| tblVehicleEF | LHD2 | 622.17      | 639.58      |
| tblVehicleEF | LHD2 | 28.08       | 30.04       |
| tblVehicleEF | LHD2 | 0.10        | 0.11        |
| tblVehicleEF | LHD2 | 0.92        | 1.23        |
| tblVehicleEF | LHD2 | 0.60        | 0.70        |
| tblVehicleEF | LHD2 | 1.2010e-003 | 1.2000e-003 |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 4.7800e-004 | 5.7800e-004 |
| tblVehicleEF | LHD2 | 2.6500e-003 | 2.6260e-003 |
| tblVehicleEF | LHD2 | 9.6020e-003 | 0.01        |
| tblVehicleEF | LHD2 | 4.3900e-004 | 5.3200e-004 |
| tblVehicleEF | LHD2 | 1.2850e-003 | 1.6010e-003 |
| tblVehicleEF | LHD2 | 0.05        | 0.06        |
| tblVehicleEF | LHD2 | 0.01        | 0.02        |
| tblVehicleEF | LHD2 | 7.7600e-004 | 9.0400e-004 |
| tblVehicleEF | LHD2 | 0.05        | 0.06        |
| tblVehicleEF | LHD2 | 0.10        | 0.13        |
| tblVehicleEF | LHD2 | 0.13        | 0.17        |
| tblVehicleEF | LHD2 | 6.0640e-003 | 6.2420e-003 |
| tblVehicleEF | LHD2 | 3.0700e-004 | 3.3300e-004 |
| tblVehicleEF | LHD2 | 1.2850e-003 | 1.6010e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD2 | 0.05        | 0.06        |
| tblVehicleEF | LHD2 | 0.02        | 0.02        |
| tblVehicleEF | LHD2 | 7.7600e-004 | 9.0400e-004 |
| tblVehicleEF | LHD2 | 0.06        | 0.07        |
| tblVehicleEF | LHD2 | 0.10        | 0.13        |
| tblVehicleEF | LHD2 | 0.14        | 0.18        |
| tblVehicleEF | MCY  | 0.50        | 0.49        |
| tblVehicleEF | MCY  | 0.15        | 0.15        |
| tblVehicleEF | MCY  | 19.08       | 19.79       |
| tblVehicleEF | MCY  | 9.63        | 9.59        |
| tblVehicleEF | MCY  | 182.36      | 180.67      |
| tblVehicleEF | MCY  | 45.23       | 46.13       |
| tblVehicleEF | MCY  | 1.13        | 1.13        |
| tblVehicleEF | MCY  | 0.31        | 0.31        |
| tblVehicleEF | MCY  | 2.2250e-003 | 2.0830e-003 |
| tblVehicleEF | MCY  | 3.8410e-003 | 4.0650e-003 |
| tblVehicleEF | MCY  | 2.0810e-003 | 1.9510e-003 |
| tblVehicleEF | MCY  | 3.6200e-003 | 3.8420e-003 |
| tblVehicleEF | MCY  | 1.18        | 1.19        |
| tblVehicleEF | MCY  | 0.69        | 0.72        |
| tblVehicleEF | MCY  | 0.70        | 0.72        |
| tblVehicleEF | MCY  | 2.49        | 2.52        |
| tblVehicleEF | MCY  | 0.63        | 0.66        |
| tblVehicleEF | MCY  | 2.06        | 2.09        |
| tblVehicleEF | MCY  | 2.2100e-003 | 2.2050e-003 |
| tblVehicleEF | MCY  | 6.7000e-004 | 6.8000e-004 |
| tblVehicleEF | MCY  | 1.18        | 1.19        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MCY | 0.69        | 0.72        |
| tblVehicleEF | MCY | 0.70        | 0.72        |
| tblVehicleEF | MCY | 3.08        | 3.11        |
| tblVehicleEF | MCY | 0.63        | 0.66        |
| tblVehicleEF | MCY | 2.24        | 2.28        |
| tblVehicleEF | MCY | 0.49        | 0.48        |
| tblVehicleEF | MCY | 0.14        | 0.14        |
| tblVehicleEF | MCY | 18.59       | 19.25       |
| tblVehicleEF | MCY | 8.86        | 8.85        |
| tblVehicleEF | MCY | 182.36      | 180.67      |
| tblVehicleEF | MCY | 45.23       | 46.13       |
| tblVehicleEF | MCY | 0.99        | 0.99        |
| tblVehicleEF | MCY | 0.29        | 0.29        |
| tblVehicleEF | MCY | 2.2250e-003 | 2.0830e-003 |
| tblVehicleEF | MCY | 3.8410e-003 | 4.0650e-003 |
| tblVehicleEF | MCY | 2.0810e-003 | 1.9510e-003 |
| tblVehicleEF | MCY | 3.6200e-003 | 3.8420e-003 |
| tblVehicleEF | MCY | 1.98        | 2.00        |
| tblVehicleEF | MCY | 0.80        | 0.83        |
| tblVehicleEF | MCY | 1.25        | 1.28        |
| tblVehicleEF | MCY | 2.43        | 2.46        |
| tblVehicleEF | MCY | 0.59        | 0.63        |
| tblVehicleEF | MCY | 1.84        | 1.86        |
| tblVehicleEF | MCY | 2.2010e-003 | 2.1950e-003 |
| tblVehicleEF | MCY | 6.5100e-004 | 6.6100e-004 |
| tblVehicleEF | MCY | 1.98        | 2.00        |
| tblVehicleEF | MCY | 0.80        | 0.83        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MCY | 1.25        | 1.28        |
| tblVehicleEF | MCY | 3.02        | 3.03        |
| tblVehicleEF | MCY | 0.59        | 0.63        |
| tblVehicleEF | MCY | 2.00        | 2.03        |
| tblVehicleEF | MCY | 0.51        | 0.49        |
| tblVehicleEF | MCY | 0.15        | 0.16        |
| tblVehicleEF | MCY | 19.10       | 19.80       |
| tblVehicleEF | MCY | 9.72        | 9.68        |
| tblVehicleEF | MCY | 182.36      | 180.67      |
| tblVehicleEF | MCY | 45.23       | 46.13       |
| tblVehicleEF | MCY | 1.10        | 1.11        |
| tblVehicleEF | MCY | 0.31        | 0.31        |
| tblVehicleEF | MCY | 2.2250e-003 | 2.0830e-003 |
| tblVehicleEF | MCY | 3.8410e-003 | 4.0650e-003 |
| tblVehicleEF | MCY | 2.0810e-003 | 1.9510e-003 |
| tblVehicleEF | MCY | 3.6200e-003 | 3.8420e-003 |
| tblVehicleEF | MCY | 1.26        | 1.28        |
| tblVehicleEF | MCY | 0.89        | 0.93        |
| tblVehicleEF | MCY | 0.67        | 0.68        |
| tblVehicleEF | MCY | 2.49        | 2.53        |
| tblVehicleEF | MCY | 0.72        | 0.76        |
| tblVehicleEF | MCY | 2.10        | 2.13        |
| tblVehicleEF | MCY | 2.2110e-003 | 2.2060e-003 |
| tblVehicleEF | MCY | 6.7300e-004 | 6.8200e-004 |
| tblVehicleEF | MCY | 1.26        | 1.28        |
| tblVehicleEF | MCY | 0.89        | 0.93        |
| tblVehicleEF | MCY | 0.67        | 0.68        |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MCY | 3.09        | 3.12        |
| tblVehicleEF | MCY | 0.72        | 0.76        |
| tblVehicleEF | MCY | 2.28        | 2.31        |
| tblVehicleEF | MDV | 0.01        | 0.02        |
| tblVehicleEF | MDV | 0.02        | 0.02        |
| tblVehicleEF | MDV | 1.48        | 1.80        |
| tblVehicleEF | MDV | 2.84        | 3.45        |
| tblVehicleEF | MDV | 515.44      | 542.45      |
| tblVehicleEF | MDV | 107.59      | 112.95      |
| tblVehicleEF | MDV | 0.16        | 0.21        |
| tblVehicleEF | MDV | 0.26        | 0.33        |
| tblVehicleEF | MDV | 2.1880e-003 | 2.2450e-003 |
| tblVehicleEF | MDV | 2.5060e-003 | 2.6000e-003 |
| tblVehicleEF | MDV | 2.0180e-003 | 2.0720e-003 |
| tblVehicleEF | MDV | 2.3060e-003 | 2.3950e-003 |
| tblVehicleEF | MDV | 0.08        | 0.08        |
| tblVehicleEF | MDV | 0.17        | 0.18        |
| tblVehicleEF | MDV | 0.08        | 0.08        |
| tblVehicleEF | MDV | 0.04        | 0.05        |
| tblVehicleEF | MDV | 0.10        | 0.10        |
| tblVehicleEF | MDV | 0.22        | 0.28        |
| tblVehicleEF | MDV | 5.1660e-003 | 5.4410e-003 |
| tblVehicleEF | MDV | 1.1260e-003 | 1.1910e-003 |
| tblVehicleEF | MDV | 0.08        | 0.08        |
| tblVehicleEF | MDV | 0.17        | 0.18        |
| tblVehicleEF | MDV | 0.08        | 0.08        |
| tblVehicleEF | MDV | 0.05        | 0.07        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MDV | 0.10        | 0.10        |
| tblVehicleEF | MDV | 0.24        | 0.30        |
| tblVehicleEF | MDV | 0.01        | 0.02        |
| tblVehicleEF | MDV | 0.01        | 0.02        |
| tblVehicleEF | MDV | 1.63        | 1.97        |
| tblVehicleEF | MDV | 2.45        | 2.97        |
| tblVehicleEF | MDV | 541.84      | 570.27      |
| tblVehicleEF | MDV | 107.59      | 112.95      |
| tblVehicleEF | MDV | 0.14        | 0.18        |
| tblVehicleEF | MDV | 0.24        | 0.31        |
| tblVehicleEF | MDV | 2.1880e-003 | 2.2450e-003 |
| tblVehicleEF | MDV | 2.5060e-003 | 2.6000e-003 |
| tblVehicleEF | MDV | 2.0180e-003 | 2.0720e-003 |
| tblVehicleEF | MDV | 2.3060e-003 | 2.3950e-003 |
| tblVehicleEF | MDV | 0.13        | 0.13        |
| tblVehicleEF | MDV | 0.18        | 0.19        |
| tblVehicleEF | MDV | 0.11        | 0.12        |
| tblVehicleEF | MDV | 0.04        | 0.05        |
| tblVehicleEF | MDV | 0.09        | 0.09        |
| tblVehicleEF | MDV | 0.19        | 0.24        |
| tblVehicleEF | MDV | 5.4320e-003 | 5.7220e-003 |
| tblVehicleEF | MDV | 1.1190e-003 | 1.1820e-003 |
| tblVehicleEF | MDV | 0.13        | 0.13        |
| tblVehicleEF | MDV | 0.18        | 0.19        |
| tblVehicleEF | MDV | 0.11        | 0.12        |
| tblVehicleEF | MDV | 0.06        | 0.07        |
| tblVehicleEF | MDV | 0.09        | 0.09        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MDV | 0.21        | 0.27        |
| tblVehicleEF | MDV | 0.01        | 0.02        |
| tblVehicleEF | MDV | 0.02        | 0.02        |
| tblVehicleEF | MDV | 1.43        | 1.74        |
| tblVehicleEF | MDV | 2.92        | 3.54        |
| tblVehicleEF | MDV | 506.79      | 533.35      |
| tblVehicleEF | MDV | 107.59      | 112.95      |
| tblVehicleEF | MDV | 0.16        | 0.20        |
| tblVehicleEF | MDV | 0.26        | 0.33        |
| tblVehicleEF | MDV | 2.1880e-003 | 2.2450e-003 |
| tblVehicleEF | MDV | 2.5060e-003 | 2.6000e-003 |
| tblVehicleEF | MDV | 2.0180e-003 | 2.0720e-003 |
| tblVehicleEF | MDV | 2.3060e-003 | 2.3950e-003 |
| tblVehicleEF | MDV | 0.07        | 0.08        |
| tblVehicleEF | MDV | 0.18        | 0.20        |
| tblVehicleEF | MDV | 0.07        | 0.07        |
| tblVehicleEF | MDV | 0.04        | 0.05        |
| tblVehicleEF | MDV | 0.11        | 0.12        |
| tblVehicleEF | MDV | 0.23        | 0.28        |
| tblVehicleEF | MDV | 5.0790e-003 | 5.3500e-003 |
| tblVehicleEF | MDV | 1.1270e-003 | 1.1920e-003 |
| tblVehicleEF | MDV | 0.07        | 0.08        |
| tblVehicleEF | MDV | 0.18        | 0.20        |
| tblVehicleEF | MDV | 0.07        | 0.07        |
| tblVehicleEF | MDV | 0.05        | 0.07        |
| tblVehicleEF | MDV | 0.11        | 0.12        |
| tblVehicleEF | MDV | 0.25        | 0.31        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |    |             |             |
|--------------|----|-------------|-------------|
| tblVehicleEF | MH | 0.03        | 0.04        |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 2.61        | 3.92        |
| tblVehicleEF | MH | 6.11        | 7.32        |
| tblVehicleEF | MH | 1,106.44    | 1,112.23    |
| tblVehicleEF | MH | 59.52       | 63.76       |
| tblVehicleEF | MH | 1.32        | 1.51        |
| tblVehicleEF | MH | 0.84        | 0.92        |
| tblVehicleEF | MH | 0.01        | 0.01        |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 1.1510e-003 | 1.7360e-003 |
| tblVehicleEF | MH | 3.2170e-003 | 3.2130e-003 |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 1.0590e-003 | 1.6140e-003 |
| tblVehicleEF | MH | 1.15        | 1.35        |
| tblVehicleEF | MH | 0.08        | 0.09        |
| tblVehicleEF | MH | 0.46        | 0.53        |
| tblVehicleEF | MH | 0.10        | 0.14        |
| tblVehicleEF | MH | 0.02        | 0.02        |
| tblVehicleEF | MH | 0.35        | 0.46        |
| tblVehicleEF | MH | 0.01        | 0.01        |
| tblVehicleEF | MH | 7.0200e-004 | 7.6700e-004 |
| tblVehicleEF | MH | 1.15        | 1.35        |
| tblVehicleEF | MH | 0.08        | 0.09        |
| tblVehicleEF | MH | 0.46        | 0.53        |
| tblVehicleEF | MH | 0.14        | 0.19        |
| tblVehicleEF | MH | 0.02        | 0.02        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |    |             |             |
|--------------|----|-------------|-------------|
| tblVehicleEF | MH | 0.38        | 0.50        |
| tblVehicleEF | MH | 0.03        | 0.04        |
| tblVehicleEF | MH | 0.02        | 0.03        |
| tblVehicleEF | MH | 2.69        | 3.97        |
| tblVehicleEF | MH | 5.74        | 6.92        |
| tblVehicleEF | MH | 1,106.44    | 1,112.23    |
| tblVehicleEF | MH | 59.52       | 63.76       |
| tblVehicleEF | MH | 1.22        | 1.39        |
| tblVehicleEF | MH | 0.80        | 0.88        |
| tblVehicleEF | MH | 0.01        | 0.01        |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 1.1510e-003 | 1.7360e-003 |
| tblVehicleEF | MH | 3.2170e-003 | 3.2130e-003 |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 1.0590e-003 | 1.6140e-003 |
| tblVehicleEF | MH | 1.78        | 2.10        |
| tblVehicleEF | MH | 0.08        | 0.09        |
| tblVehicleEF | MH | 0.72        | 0.84        |
| tblVehicleEF | MH | 0.10        | 0.14        |
| tblVehicleEF | MH | 0.02        | 0.02        |
| tblVehicleEF | MH | 0.34        | 0.44        |
| tblVehicleEF | MH | 0.01        | 0.01        |
| tblVehicleEF | MH | 6.9500e-004 | 7.5900e-004 |
| tblVehicleEF | MH | 1.78        | 2.10        |
| tblVehicleEF | MH | 0.08        | 0.09        |
| tblVehicleEF | MH | 0.72        | 0.84        |
| tblVehicleEF | MH | 0.14        | 0.19        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |    |             |             |
|--------------|----|-------------|-------------|
| tblVehicleEF | MH | 0.02        | 0.02        |
| tblVehicleEF | MH | 0.37        | 0.48        |
| tblVehicleEF | MH | 0.03        | 0.04        |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 2.59        | 3.90        |
| tblVehicleEF | MH | 6.16        | 7.37        |
| tblVehicleEF | MH | 1,106.44    | 1,112.23    |
| tblVehicleEF | MH | 59.52       | 63.76       |
| tblVehicleEF | MH | 1.30        | 1.48        |
| tblVehicleEF | MH | 0.84        | 0.92        |
| tblVehicleEF | MH | 0.01        | 0.01        |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 1.1510e-003 | 1.7360e-003 |
| tblVehicleEF | MH | 3.2170e-003 | 3.2130e-003 |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 1.0590e-003 | 1.6140e-003 |
| tblVehicleEF | MH | 1.27        | 1.51        |
| tblVehicleEF | MH | 0.09        | 0.11        |
| tblVehicleEF | MH | 0.47        | 0.55        |
| tblVehicleEF | MH | 0.10        | 0.14        |
| tblVehicleEF | MH | 0.02        | 0.02        |
| tblVehicleEF | MH | 0.35        | 0.46        |
| tblVehicleEF | MH | 0.01        | 0.01        |
| tblVehicleEF | MH | 7.0300e-004 | 7.6700e-004 |
| tblVehicleEF | MH | 1.27        | 1.51        |
| tblVehicleEF | MH | 0.09        | 0.11        |
| tblVehicleEF | MH | 0.47        | 0.55        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MH  | 0.14        | 0.19        |
| tblVehicleEF | MH  | 0.02        | 0.02        |
| tblVehicleEF | MH  | 0.39        | 0.50        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 4.8740e-003 | 0.01        |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.37        | 0.48        |
| tblVehicleEF | MHD | 0.37        | 0.73        |
| tblVehicleEF | MHD | 6.44        | 7.70        |
| tblVehicleEF | MHD | 139.10      | 141.46      |
| tblVehicleEF | MHD | 1,139.95    | 1,145.30    |
| tblVehicleEF | MHD | 61.46       | 63.16       |
| tblVehicleEF | MHD | 0.55        | 1.08        |
| tblVehicleEF | MHD | 1.18        | 2.52        |
| tblVehicleEF | MHD | 10.45       | 10.44       |
| tblVehicleEF | MHD | 3.6300e-004 | 4.2030e-003 |
| tblVehicleEF | MHD | 5.7190e-003 | 0.07        |
| tblVehicleEF | MHD | 8.4000e-004 | 9.6900e-004 |
| tblVehicleEF | MHD | 3.4700e-004 | 4.0210e-003 |
| tblVehicleEF | MHD | 5.4680e-003 | 0.07        |
| tblVehicleEF | MHD | 7.7200e-004 | 8.9200e-004 |
| tblVehicleEF | MHD | 1.2630e-003 | 1.4760e-003 |
| tblVehicleEF | MHD | 0.05        | 0.05        |
| tblVehicleEF | MHD | 0.03        | 0.04        |
| tblVehicleEF | MHD | 7.7200e-004 | 8.6400e-004 |
| tblVehicleEF | MHD | 0.04        | 0.13        |
| tblVehicleEF | MHD | 0.02        | 0.02        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MHD | 0.40        | 0.47        |
| tblVehicleEF | MHD | 1.3390e-003 | 1.3620e-003 |
| tblVehicleEF | MHD | 0.01        | 0.01        |
| tblVehicleEF | MHD | 7.2800e-004 | 7.6700e-004 |
| tblVehicleEF | MHD | 1.2630e-003 | 1.4760e-003 |
| tblVehicleEF | MHD | 0.05        | 0.05        |
| tblVehicleEF | MHD | 0.04        | 0.05        |
| tblVehicleEF | MHD | 7.7200e-004 | 8.6400e-004 |
| tblVehicleEF | MHD | 0.05        | 0.15        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 0.43        | 0.52        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 4.9460e-003 | 0.01        |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.27        | 0.35        |
| tblVehicleEF | MHD | 0.37        | 0.74        |
| tblVehicleEF | MHD | 6.12        | 7.32        |
| tblVehicleEF | MHD | 147.32      | 149.83      |
| tblVehicleEF | MHD | 1,139.95    | 1,145.30    |
| tblVehicleEF | MHD | 61.46       | 63.16       |
| tblVehicleEF | MHD | 0.57        | 1.11        |
| tblVehicleEF | MHD | 1.11        | 2.37        |
| tblVehicleEF | MHD | 10.41       | 10.39       |
| tblVehicleEF | MHD | 3.0600e-004 | 3.5430e-003 |
| tblVehicleEF | MHD | 5.7190e-003 | 0.07        |
| tblVehicleEF | MHD | 8.4000e-004 | 9.6900e-004 |
| tblVehicleEF | MHD | 2.9300e-004 | 3.3900e-003 |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MHD | 5.4680e-003 | 0.07        |
| tblVehicleEF | MHD | 7.7200e-004 | 8.9200e-004 |
| tblVehicleEF | MHD | 1.9740e-003 | 2.3150e-003 |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.02        | 0.03        |
| tblVehicleEF | MHD | 1.1660e-003 | 1.3270e-003 |
| tblVehicleEF | MHD | 0.04        | 0.13        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 0.38        | 0.45        |
| tblVehicleEF | MHD | 1.4170e-003 | 1.4410e-003 |
| tblVehicleEF | MHD | 0.01        | 0.01        |
| tblVehicleEF | MHD | 7.2200e-004 | 7.6000e-004 |
| tblVehicleEF | MHD | 1.9740e-003 | 2.3150e-003 |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.03        | 0.05        |
| tblVehicleEF | MHD | 1.1660e-003 | 1.3270e-003 |
| tblVehicleEF | MHD | 0.05        | 0.16        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 0.42        | 0.50        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 4.8520e-003 | 0.01        |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.51        | 0.67        |
| tblVehicleEF | MHD | 0.37        | 0.73        |
| tblVehicleEF | MHD | 6.50        | 7.77        |
| tblVehicleEF | MHD | 127.72      | 129.89      |
| tblVehicleEF | MHD | 1,139.95    | 1,145.30    |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MHD | 61.46       | 63.16       |
| tblVehicleEF | MHD | 0.53        | 1.03        |
| tblVehicleEF | MHD | 1.16        | 2.47        |
| tblVehicleEF | MHD | 10.46       | 10.45       |
| tblVehicleEF | MHD | 4.4200e-004 | 5.1140e-003 |
| tblVehicleEF | MHD | 5.7190e-003 | 0.07        |
| tblVehicleEF | MHD | 8.4000e-004 | 9.6900e-004 |
| tblVehicleEF | MHD | 4.2300e-004 | 4.8930e-003 |
| tblVehicleEF | MHD | 5.4680e-003 | 0.07        |
| tblVehicleEF | MHD | 7.7200e-004 | 8.9200e-004 |
| tblVehicleEF | MHD | 1.2610e-003 | 1.5100e-003 |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.03        | 0.04        |
| tblVehicleEF | MHD | 7.4700e-004 | 8.4600e-004 |
| tblVehicleEF | MHD | 0.04        | 0.13        |
| tblVehicleEF | MHD | 0.02        | 0.03        |
| tblVehicleEF | MHD | 0.40        | 0.48        |
| tblVehicleEF | MHD | 1.2320e-003 | 1.2530e-003 |
| tblVehicleEF | MHD | 0.01        | 0.01        |
| tblVehicleEF | MHD | 7.2900e-004 | 7.6800e-004 |
| tblVehicleEF | MHD | 1.2610e-003 | 1.5100e-003 |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.04        | 0.05        |
| tblVehicleEF | MHD | 7.4700e-004 | 8.4600e-004 |
| tblVehicleEF | MHD | 0.05        | 0.15        |
| tblVehicleEF | MHD | 0.02        | 0.03        |
| tblVehicleEF | MHD | 0.44        | 0.52        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 8.7600e-003 | 0.01        |
| tblVehicleEF | OBUS | 0.03        | 0.03        |
| tblVehicleEF | OBUS | 0.28        | 0.29        |
| tblVehicleEF | OBUS | 0.59        | 0.78        |
| tblVehicleEF | OBUS | 5.80        | 6.56        |
| tblVehicleEF | OBUS | 101.23      | 99.62       |
| tblVehicleEF | OBUS | 1,241.90    | 1,254.62    |
| tblVehicleEF | OBUS | 68.87       | 70.18       |
| tblVehicleEF | OBUS | 0.52        | 0.62        |
| tblVehicleEF | OBUS | 1.61        | 2.16        |
| tblVehicleEF | OBUS | 2.46        | 2.53        |
| tblVehicleEF | OBUS | 1.8000e-004 | 3.3800e-004 |
| tblVehicleEF | OBUS | 8.1890e-003 | 0.01        |
| tblVehicleEF | OBUS | 8.1000e-004 | 8.2900e-004 |
| tblVehicleEF | OBUS | 1.7300e-004 | 3.2300e-004 |
| tblVehicleEF | OBUS | 7.8190e-003 | 0.01        |
| tblVehicleEF | OBUS | 7.4400e-004 | 7.6500e-004 |
| tblVehicleEF | OBUS | 1.5730e-003 | 1.6610e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 8.0200e-004 | 8.2500e-004 |
| tblVehicleEF | OBUS | 0.06        | 0.07        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 0.36        | 0.42        |
| tblVehicleEF | OBUS | 9.7800e-004 | 9.6300e-004 |
| tblVehicleEF | OBUS | 0.01        | 0.01        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | OBUS | 7.9100e-004 | 8.1700e-004 |
| tblVehicleEF | OBUS | 1.5730e-003 | 1.6610e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.05        | 0.06        |
| tblVehicleEF | OBUS | 8.0200e-004 | 8.2500e-004 |
| tblVehicleEF | OBUS | 0.08        | 0.09        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 0.40        | 0.45        |
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 8.9130e-003 | 0.01        |
| tblVehicleEF | OBUS | 0.03        | 0.03        |
| tblVehicleEF | OBUS | 0.27        | 0.27        |
| tblVehicleEF | OBUS | 0.60        | 0.79        |
| tblVehicleEF | OBUS | 5.48        | 6.20        |
| tblVehicleEF | OBUS | 106.24      | 104.52      |
| tblVehicleEF | OBUS | 1,241.90    | 1,254.62    |
| tblVehicleEF | OBUS | 68.87       | 70.18       |
| tblVehicleEF | OBUS | 0.53        | 0.64        |
| tblVehicleEF | OBUS | 1.52        | 2.03        |
| tblVehicleEF | OBUS | 2.42        | 2.48        |
| tblVehicleEF | OBUS | 1.5200e-004 | 2.8500e-004 |
| tblVehicleEF | OBUS | 8.1890e-003 | 0.01        |
| tblVehicleEF | OBUS | 8.1000e-004 | 8.2900e-004 |
| tblVehicleEF | OBUS | 1.4600e-004 | 2.7300e-004 |
| tblVehicleEF | OBUS | 7.8190e-003 | 0.01        |
| tblVehicleEF | OBUS | 7.4400e-004 | 7.6500e-004 |
| tblVehicleEF | OBUS | 2.3950e-003 | 2.5350e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 1.2060e-003 | 1.2540e-003 |
| tblVehicleEF | OBUS | 0.06        | 0.07        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 0.35        | 0.40        |
| tblVehicleEF | OBUS | 1.0260e-003 | 1.0100e-003 |
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 7.8500e-004 | 8.1100e-004 |
| tblVehicleEF | OBUS | 2.3950e-003 | 2.5350e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.05        | 0.06        |
| tblVehicleEF | OBUS | 1.2060e-003 | 1.2540e-003 |
| tblVehicleEF | OBUS | 0.08        | 0.09        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 0.38        | 0.44        |
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 8.7200e-003 | 0.01        |
| tblVehicleEF | OBUS | 0.03        | 0.03        |
| tblVehicleEF | OBUS | 0.30        | 0.31        |
| tblVehicleEF | OBUS | 0.59        | 0.78        |
| tblVehicleEF | OBUS | 5.86        | 6.62        |
| tblVehicleEF | OBUS | 94.31       | 92.85       |
| tblVehicleEF | OBUS | 1,241.90    | 1,254.62    |
| tblVehicleEF | OBUS | 68.87       | 70.18       |
| tblVehicleEF | OBUS | 0.49        | 0.59        |
| tblVehicleEF | OBUS | 1.59        | 2.12        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | OBUS | 2.47        | 2.54        |
| tblVehicleEF | OBUS | 2.2000e-004 | 4.1100e-004 |
| tblVehicleEF | OBUS | 8.1890e-003 | 0.01        |
| tblVehicleEF | OBUS | 8.1000e-004 | 8.2900e-004 |
| tblVehicleEF | OBUS | 2.1000e-004 | 3.9300e-004 |
| tblVehicleEF | OBUS | 7.8190e-003 | 0.01        |
| tblVehicleEF | OBUS | 7.4400e-004 | 7.6500e-004 |
| tblVehicleEF | OBUS | 1.5900e-003 | 1.7090e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 7.8500e-004 | 8.1300e-004 |
| tblVehicleEF | OBUS | 0.06        | 0.07        |
| tblVehicleEF | OBUS | 0.04        | 0.05        |
| tblVehicleEF | OBUS | 0.37        | 0.42        |
| tblVehicleEF | OBUS | 9.1200e-004 | 8.9800e-004 |
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 7.9200e-004 | 8.1800e-004 |
| tblVehicleEF | OBUS | 1.5900e-003 | 1.7090e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.06        | 0.06        |
| tblVehicleEF | OBUS | 7.8500e-004 | 8.1300e-004 |
| tblVehicleEF | OBUS | 0.08        | 0.09        |
| tblVehicleEF | OBUS | 0.04        | 0.05        |
| tblVehicleEF | OBUS | 0.40        | 0.46        |
| tblVehicleEF | SBUS | 0.86        | 0.88        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.07        | 0.08        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | SBUS | 7.86        | 7.58        |
| tblVehicleEF | SBUS | 0.81        | 0.94        |
| tblVehicleEF | SBUS | 7.55        | 7.88        |
| tblVehicleEF | SBUS | 1,146.60    | 1,175.17    |
| tblVehicleEF | SBUS | 1,098.65    | 1,116.42    |
| tblVehicleEF | SBUS | 52.57       | 49.91       |
| tblVehicleEF | SBUS | 10.06       | 11.44       |
| tblVehicleEF | SBUS | 4.64        | 5.41        |
| tblVehicleEF | SBUS | 12.63       | 13.16       |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 7.2300e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 2.6920e-003 | 2.7100e-003 |
| tblVehicleEF | SBUS | 0.02        | 0.03        |
| tblVehicleEF | SBUS | 6.6400e-004 | 6.3100e-004 |
| tblVehicleEF | SBUS | 3.6480e-003 | 3.8950e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 0.94        | 0.92        |
| tblVehicleEF | SBUS | 1.8170e-003 | 1.7890e-003 |
| tblVehicleEF | SBUS | 0.11        | 0.13        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.40        | 0.42        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 6.5600e-004 | 6.3600e-004 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | SBUS | 3.6480e-003 | 3.8950e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 1.36        | 1.32        |
| tblVehicleEF | SBUS | 1.8170e-003 | 1.7890e-003 |
| tblVehicleEF | SBUS | 0.14        | 0.15        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.44        | 0.46        |
| tblVehicleEF | SBUS | 0.86        | 0.88        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.06        | 0.07        |
| tblVehicleEF | SBUS | 7.73        | 7.44        |
| tblVehicleEF | SBUS | 0.82        | 0.95        |
| tblVehicleEF | SBUS | 6.01        | 6.27        |
| tblVehicleEF | SBUS | 1,199.32    | 1,230.37    |
| tblVehicleEF | SBUS | 1,098.65    | 1,116.42    |
| tblVehicleEF | SBUS | 52.57       | 49.91       |
| tblVehicleEF | SBUS | 10.38       | 11.80       |
| tblVehicleEF | SBUS | 4.37        | 5.10        |
| tblVehicleEF | SBUS | 12.59       | 13.13       |
| tblVehicleEF | SBUS | 9.1580e-003 | 0.01        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 7.2300e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 8.7620e-003 | 0.01        |
| tblVehicleEF | SBUS | 2.6920e-003 | 2.7100e-003 |
| tblVehicleEF | SBUS | 0.02        | 0.03        |
| tblVehicleEF | SBUS | 6.6400e-004 | 6.3100e-004 |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | SBUS | 5.6470e-003 | 5.9980e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 0.94        | 0.91        |
| tblVehicleEF | SBUS | 2.8110e-003 | 2.7960e-003 |
| tblVehicleEF | SBUS | 0.11        | 0.13        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.35        | 0.37        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 6.3100e-004 | 6.0900e-004 |
| tblVehicleEF | SBUS | 5.6470e-003 | 5.9980e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 1.36        | 1.32        |
| tblVehicleEF | SBUS | 2.8110e-003 | 2.7960e-003 |
| tblVehicleEF | SBUS | 0.14        | 0.15        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.39        | 0.40        |
| tblVehicleEF | SBUS | 0.86        | 0.88        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.07        | 0.08        |
| tblVehicleEF | SBUS | 8.03        | 7.78        |
| tblVehicleEF | SBUS | 0.81        | 0.93        |
| tblVehicleEF | SBUS | 7.81        | 8.15        |
| tblVehicleEF | SBUS | 1,073.80    | 1,098.95    |
| tblVehicleEF | SBUS | 1,098.65    | 1,116.42    |
| tblVehicleEF | SBUS | 52.57       | 49.91       |
| tblVehicleEF | SBUS | 9.61        | 10.93       |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | SBUS | 4.57        | 5.33        |
| tblVehicleEF | SBUS | 12.63       | 13.17       |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 7.2300e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 2.6920e-003 | 2.7100e-003 |
| tblVehicleEF | SBUS | 0.02        | 0.03        |
| tblVehicleEF | SBUS | 6.6400e-004 | 6.3100e-004 |
| tblVehicleEF | SBUS | 3.6250e-003 | 4.0560e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 0.95        | 0.92        |
| tblVehicleEF | SBUS | 0.11        | 0.13        |
| tblVehicleEF | SBUS | 0.02        | 0.02        |
| tblVehicleEF | SBUS | 0.41        | 0.43        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 6.6100e-004 | 6.4000e-004 |
| tblVehicleEF | SBUS | 3.6250e-003 | 4.0560e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 1.37        | 1.32        |
| tblVehicleEF | SBUS | 0.14        | 0.15        |
| tblVehicleEF | SBUS | 0.02        | 0.02        |
| tblVehicleEF | SBUS | 0.45        | 0.47        |
| tblVehicleEF | UBUS | 2.51        | 2.82        |
| tblVehicleEF | UBUS | 0.06        | 0.06        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | UBUS | 11.01       | 12.54       |
| tblVehicleEF | UBUS | 10.46       | 10.71       |
| tblVehicleEF | UBUS | 1,940.83    | 1,986.82    |
| tblVehicleEF | UBUS | 106.77      | 99.14       |
| tblVehicleEF | UBUS | 9.09        | 10.84       |
| tblVehicleEF | UBUS | 14.93       | 15.55       |
| tblVehicleEF | UBUS | 0.59        | 0.61        |
| tblVehicleEF | UBUS | 0.11        | 0.14        |
| tblVehicleEF | UBUS | 1.1160e-003 | 1.1020e-003 |
| tblVehicleEF | UBUS | 0.25        | 0.26        |
| tblVehicleEF | UBUS | 0.11        | 0.13        |
| tblVehicleEF | UBUS | 1.0260e-003 | 1.0160e-003 |
| tblVehicleEF | UBUS | 5.1810e-003 | 5.5290e-003 |
| tblVehicleEF | UBUS | 0.08        | 0.09        |
| tblVehicleEF | UBUS | 2.8830e-003 | 2.9760e-003 |
| tblVehicleEF | UBUS | 0.80        | 0.94        |
| tblVehicleEF | UBUS | 0.02        | 0.02        |
| tblVehicleEF | UBUS | 0.79        | 0.81        |
| tblVehicleEF | UBUS | 9.6900e-003 | 0.01        |
| tblVehicleEF | UBUS | 1.2560e-003 | 1.1840e-003 |
| tblVehicleEF | UBUS | 5.1810e-003 | 5.5290e-003 |
| tblVehicleEF | UBUS | 0.08        | 0.09        |
| tblVehicleEF | UBUS | 2.8830e-003 | 2.9760e-003 |
| tblVehicleEF | UBUS | 3.40        | 3.87        |
| tblVehicleEF | UBUS | 0.02        | 0.02        |
| tblVehicleEF | UBUS | 0.87        | 0.88        |
| tblVehicleEF | UBUS | 2.52        | 2.82        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | UBUS | 0.05        | 0.05        |
| tblVehicleEF | UBUS | 11.06       | 12.61       |
| tblVehicleEF | UBUS | 9.07        | 9.31        |
| tblVehicleEF | UBUS | 1,940.83    | 1,986.82    |
| tblVehicleEF | UBUS | 106.77      | 99.14       |
| tblVehicleEF | UBUS | 8.56        | 10.21       |
| tblVehicleEF | UBUS | 14.87       | 15.49       |
| tblVehicleEF | UBUS | 0.59        | 0.61        |
| tblVehicleEF | UBUS | 0.11        | 0.14        |
| tblVehicleEF | UBUS | 1.1160e-003 | 1.1020e-003 |
| tblVehicleEF | UBUS | 0.25        | 0.26        |
| tblVehicleEF | UBUS | 0.11        | 0.13        |
| tblVehicleEF | UBUS | 1.0260e-003 | 1.0160e-003 |
| tblVehicleEF | UBUS | 7.7250e-003 | 8.3230e-003 |
| tblVehicleEF | UBUS | 0.09        | 0.09        |
| tblVehicleEF | UBUS | 4.3230e-003 | 4.5310e-003 |
| tblVehicleEF | UBUS | 0.81        | 0.95        |
| tblVehicleEF | UBUS | 0.02        | 0.02        |
| tblVehicleEF | UBUS | 0.73        | 0.74        |
| tblVehicleEF | UBUS | 9.6910e-003 | 0.01        |
| tblVehicleEF | UBUS | 1.2320e-003 | 1.1600e-003 |
| tblVehicleEF | UBUS | 7.7250e-003 | 8.3230e-003 |
| tblVehicleEF | UBUS | 0.09        | 0.09        |
| tblVehicleEF | UBUS | 4.3230e-003 | 4.5310e-003 |
| tblVehicleEF | UBUS | 3.42        | 3.88        |
| tblVehicleEF | UBUS | 0.02        | 0.02        |
| tblVehicleEF | UBUS | 0.80        | 0.81        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | UBUS | 2.51        | 2.82        |
| tblVehicleEF | UBUS | 0.06        | 0.06        |
| tblVehicleEF | UBUS | 11.00       | 12.53       |
| tblVehicleEF | UBUS | 10.67       | 10.92       |
| tblVehicleEF | UBUS | 1,940.83    | 1,986.82    |
| tblVehicleEF | UBUS | 106.77      | 99.14       |
| tblVehicleEF | UBUS | 8.92        | 10.64       |
| tblVehicleEF | UBUS | 14.95       | 15.56       |
| tblVehicleEF | UBUS | 0.59        | 0.61        |
| tblVehicleEF | UBUS | 0.11        | 0.14        |
| tblVehicleEF | UBUS | 1.1160e-003 | 1.1020e-003 |
| tblVehicleEF | UBUS | 0.25        | 0.26        |
| tblVehicleEF | UBUS | 0.11        | 0.13        |
| tblVehicleEF | UBUS | 1.0260e-003 | 1.0160e-003 |
| tblVehicleEF | UBUS | 5.7050e-003 | 6.0970e-003 |
| tblVehicleEF | UBUS | 0.10        | 0.11        |
| tblVehicleEF | UBUS | 2.9930e-003 | 3.0990e-003 |
| tblVehicleEF | UBUS | 0.80        | 0.94        |
| tblVehicleEF | UBUS | 0.03        | 0.03        |
| tblVehicleEF | UBUS | 0.80        | 0.82        |
| tblVehicleEF | UBUS | 9.6890e-003 | 0.01        |
| tblVehicleEF | UBUS | 1.2600e-003 | 1.1880e-003 |
| tblVehicleEF | UBUS | 5.7050e-003 | 6.0970e-003 |
| tblVehicleEF | UBUS | 0.10        | 0.11        |
| tblVehicleEF | UBUS | 2.9930e-003 | 3.0990e-003 |
| tblVehicleEF | UBUS | 3.40        | 3.87        |
| tblVehicleEF | UBUS | 0.03        | 0.03        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |      |      |
|--------------|------|------|------|
| tblVehicleEF | UBUS | 0.88 | 0.90 |
|--------------|------|------|------|

## 2.0 Emissions Summary

### 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   |             |             |        |        |             |
| 2019    | 12.7002 | 126.4693 | 80.5287 | 0.2038 | 5.7447        | 4.9557       | 10.7004    | 3.1183         | 4.5897        | 7.7080      | 0.0000   | 20,570.1019 | 20,570.1019 | 5.6850 | 0.0000 | 20,712.2259 |
| Maximum | 12.7002 | 126.4693 | 80.5287 | 0.2038 | 5.7447        | 4.9557       | 10.7004    | 3.1183         | 4.5897        | 7.7080      | 0.0000   | 20,570.1019 | 20,570.1019 | 5.6850 | 0.0000 | 20,712.2259 |

#### 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   |             |             |        |        |             |
| 2019    | 10.5777 | 107.9554 | 98.9691 | 0.2038 | 5.7447        | 4.1445       | 9.8892     | 3.1183         | 3.8225        | 6.9408      | 0.0000   | 20,570.1019 | 20,570.1019 | 5.6850 | 0.0000 | 20,712.2259 |
| Maximum | 10.5777 | 107.9554 | 98.9691 | 0.2038 | 5.7447        | 4.1445       | 9.8892     | 3.1183         | 3.8225        | 6.9408      | 0.0000   | 20,570.1019 | 20,570.1019 | 5.6850 | 0.0000 | 20,712.2259 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|                   | 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 |
|-------------------|-------|-------|--------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 16.71 | 14.64 | -22.90 | 0.00 | 0.00          | 16.37        | 7.58       | 0.00           | 16.72         | 9.95        | 0.00     | 0.00     | 0.00      | 0.00 | 0.00 | 0.00 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**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         | 0.0198        | 0.0000             | 1.0000e-004        | 0.0000        |               | 0.0000             | 0.0000        |                    | 0.0000             | 0.0000             |          | 2.2000e-004   | 2.2000e-004   | 0.0000             |                    | 2.3000e-004   |
| Energy       | 3.0000e-005   | 2.3000e-004        | 2.0000e-004        | 0.0000        |               | 2.0000e-005        | 2.0000e-005   |                    | 2.0000e-005        | 2.0000e-005        |          | 0.2804        | 0.2804        | 1.0000e-005        | 1.0000e-005        | 0.2821        |
| Mobile       | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0131        | 0.0000             | 0.0131        | 3.2100e-003        | 0.0000             | 3.2100e-003        |          | 0.0000        | 0.0000        | 0.0000             |                    | 0.0000        |
| <b>Total</b> | <b>0.0198</b> | <b>2.3000e-004</b> | <b>3.0000e-004</b> | <b>0.0000</b> | <b>0.0131</b> | <b>2.0000e-005</b> | <b>0.0131</b> | <b>3.2100e-003</b> | <b>2.0000e-005</b> | <b>3.2300e-003</b> |          | <b>0.2806</b> | <b>0.2806</b> | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.2823</b> |

**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         | 0.0198        | 0.0000             | 1.0000e-004        | 0.0000        |               | 0.0000             | 0.0000        |                    | 0.0000             | 0.0000             |          | 2.2000e-004   | 2.2000e-004   | 0.0000             |                    | 2.3000e-004   |
| Energy       | 3.0000e-005   | 2.3000e-004        | 2.0000e-004        | 0.0000        |               | 2.0000e-005        | 2.0000e-005   |                    | 2.0000e-005        | 2.0000e-005        |          | 0.2804        | 0.2804        | 1.0000e-005        | 1.0000e-005        | 0.2821        |
| Mobile       | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0131        | 0.0000             | 0.0131        | 3.2100e-003        | 0.0000             | 3.2100e-003        |          | 0.0000        | 0.0000        | 0.0000             |                    | 0.0000        |
| <b>Total</b> | <b>0.0198</b> | <b>2.3000e-004</b> | <b>3.0000e-004</b> | <b>0.0000</b> | <b>0.0131</b> | <b>2.0000e-005</b> | <b>0.0131</b> | <b>3.2100e-003</b> | <b>2.0000e-005</b> | <b>3.2300e-003</b> |          | <b>0.2806</b> | <b>0.2806</b> | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.2823</b> |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|                   | 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 |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| 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            | Grading    | Grading    | 9/24/2019  | 9/25/2019 | 5             | 2        |                   |

**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 0****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

| Phase Name | Offroad Equipment Type       | Amount | Usage Hours | Horse Power | Load Factor |
|------------|------------------------------|--------|-------------|-------------|-------------|
| Grading    | Concrete/Industrial Saws     | 0      | 0.00        | 81          | 0.73        |
| Grading    | Crushing/Proc. Equipment     | 1      | 7.50        | 415         | 0.78        |
| Grading    | Excavators                   | 5      | 7.50        | 303         | 0.38        |
| Grading    | Off-Highway Trucks           | 5      | 7.50        | 683         | 0.40        |
| Grading    | Other Construction Equipment | 1      | 7.50        | 172         | 0.42        |
| Grading    | Rubber Tired Dozers          | 1      | 7.50        | 450         | 0.40        |
| Grading    | Tractors/Loaders/Backhoes    | 0      | 0.00        | 97          | 0.37        |

**Trips and VMT**

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

| 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 |
|------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Grading    | 13                      | 0.00               | 0.00               | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

**3.2 Grading - 2019****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 |                |                 |                |               | 5.7447        | 0.0000        | 5.7447         | 3.1183         | 0.0000        | 3.1183        |          |                         | 0.0000                  |               |     | 0.0000                  |
| Off-Road      | 12.7002        | 126.4693        | 80.5287        | 0.2038        |               | 4.9557        | 4.9557         |                | 4.5897        | 4.5897        |          | 20,570.10<br>19         | 20,570.10<br>19         | 5.6850        |     | 20,712.22<br>59         |
| <b>Total</b>  | <b>12.7002</b> | <b>126.4693</b> | <b>80.5287</b> | <b>0.2038</b> | <b>5.7447</b> | <b>4.9557</b> | <b>10.7004</b> | <b>3.1183</b>  | <b>4.5897</b> | <b>7.7080</b> |          | <b>20,570.10<br/>19</b> | <b>20,570.10<br/>19</b> | <b>5.6850</b> |     | <b>20,712.22<br/>59</b> |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**3.2 Grading - 2019****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        |
| 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        |
| Worker       | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        |     | 0.0000        |
| <b>Total</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |     | <b>0.0000</b> |

**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 |                |                 |                |               | 5.7447        | 0.0000        | 5.7447        | 3.1183         | 0.0000        | 3.1183        |               |                         | 0.0000                  |               |     | 0.0000                  |
| Off-Road      | 10.5777        | 107.9554        | 98.9691        | 0.2038        |               | 4.1445        | 4.1445        |                | 3.8225        | 3.8225        | 0.0000        | 20,570.10<br>19         | 20,570.10<br>19         | 5.6850        |     | 20,712.22<br>59         |
| <b>Total</b>  | <b>10.5777</b> | <b>107.9554</b> | <b>98.9691</b> | <b>0.2038</b> | <b>5.7447</b> | <b>4.1445</b> | <b>9.8892</b> | <b>3.1183</b>  | <b>3.8225</b> | <b>6.9408</b> | <b>0.0000</b> | <b>20,570.10<br/>19</b> | <b>20,570.10<br/>19</b> | <b>5.6850</b> |     | <b>20,712.22<br/>59</b> |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**3.2 Grading - 2019****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        |
| 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        |
| Worker       | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        |     | 0.0000        |
| <b>Total</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |     | <b>0.0000</b> |

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|             | 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   | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0131        | 0.0000       | 0.0131     | 3.2100e-003    | 0.0000        | 3.2100e-003 |          | 0.0000    | 0.0000    | 0.0000 |     | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0131        | 0.0000       | 0.0131     | 3.2100e-003    | 0.0000        | 3.2100e-003 |          | 0.0000    | 0.0000    | 0.0000 |     | 0.0000 |

## 4.2 Trip Summary Information

| Land Use                         | Average Daily Trip Rate |          |        | Unmitigated | Mitigated  |
|----------------------------------|-------------------------|----------|--------|-------------|------------|
|                                  | Weekday                 | Saturday | Sunday | Annual VMT  | Annual VMT |
| Unrefrigerated Warehouse-No Rail | 1.68                    | 1.68     | 1.68   | 7,200       | 7,200      |
| Total                            | 1.68                    | 1.68     | 1.68   | 7,200       | 7,200      |

## 4.3 Trip Type Information

| Land Use                         | Miles      |            |             | Trip %     |            |             | Trip Purpose % |          |         |
|----------------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
|                                  | 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 |
| Unrefrigerated Warehouse-No Rail | 16.60      | 8.40       | 6.90        | 59.00      | 0.00       | 41.00       | 92             | 5        | 3       |

## 4.4 Fleet Mix

| Land Use                         | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Unrefrigerated Warehouse-No Rail | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 5.0 Energy Detail

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

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   | 3.0000e-005 | 2.3000e-004 | 2.0000e-004 | 0.0000 |               | 2.0000e-005  | 2.0000e-005 |                | 2.0000e-005   | 2.0000e-005 |          | 0.2804    | 0.2804    | 1.0000e-005 | 1.0000e-005 | 0.2821 |
| NaturalGas Unmitigated | 3.0000e-005 | 2.3000e-004 | 2.0000e-004 | 0.0000 |               | 2.0000e-005  | 2.0000e-005 |                | 2.0000e-005   | 2.0000e-005 |          | 0.2804    | 0.2804    | 1.0000e-005 | 1.0000e-005 | 0.2821 |

**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   |               |               |                    |                    |               |
| Unrefrigerated Warehouse-No Rail | 2.38356        | 3.0000e-005        | 2.3000e-004        | 2.0000e-004        | 0.0000        |               | 2.0000e-005        | 2.0000e-005        |                | 2.0000e-005        | 2.0000e-005        |          | 0.2804        | 0.2804        | 1.0000e-005        | 1.0000e-005        | 0.2821        |
| <b>Total</b>                     |                | <b>3.0000e-005</b> | <b>2.3000e-004</b> | <b>2.0000e-004</b> | <b>0.0000</b> |               | <b>2.0000e-005</b> | <b>2.0000e-005</b> |                | <b>2.0000e-005</b> | <b>2.0000e-005</b> |          | <b>0.2804</b> | <b>0.2804</b> | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.2821</b> |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**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   |               |               |                    |                    |               |
| Unrefrigerated Warehouse-No Rail | 0.00238356     | 3.0000e-005        | 2.3000e-004        | 2.0000e-004        | 0.0000        |               | 2.0000e-005        | 2.0000e-005        |                | 2.0000e-005        | 2.0000e-005        |          | 0.2804        | 0.2804        | 1.0000e-005        | 1.0000e-005        | 0.2821        |
| <b>Total</b>                     |                | <b>3.0000e-005</b> | <b>2.3000e-004</b> | <b>2.0000e-004</b> | <b>0.0000</b> |               | <b>2.0000e-005</b> | <b>2.0000e-005</b> |                | <b>2.0000e-005</b> | <b>2.0000e-005</b> |          | <b>0.2804</b> | <b>0.2804</b> | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.2821</b> |

**6.0 Area Detail****6.1 Mitigation Measures Area**

|             | 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   | 0.0198 | 0.0000 | 1.0000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 2.2000e-004 | 2.2000e-004 | 0.0000 |     | 2.3000e-004 |
| Unmitigated | 0.0198 | 0.0000 | 1.0000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 2.2000e-004 | 2.2000e-004 | 0.0000 |     | 2.3000e-004 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**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 | 0.0000        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0198        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 1.0000e-005   | 0.0000        | 1.0000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 2.2000e-004        | 2.2000e-004        | 0.0000        |     | 2.3000e-004        |
| <b>Total</b>          | <b>0.0198</b> | <b>0.0000</b> | <b>1.0000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>2.2000e-004</b> | <b>2.2000e-004</b> | <b>0.0000</b> |     | <b>2.3000e-004</b> |

**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 | 0.0000        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0198        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 1.0000e-005   | 0.0000        | 1.0000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 2.2000e-004        | 2.2000e-004        | 0.0000        |     | 2.3000e-004        |
| <b>Total</b>          | <b>0.0198</b> | <b>0.0000</b> | <b>1.0000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>2.2000e-004</b> | <b>2.2000e-004</b> | <b>0.0000</b> |     | <b>2.3000e-004</b> |

**7.0 Water Detail**



The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

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**7.1 Mitigation Measures Water****8.0 Waste Detail**

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**8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

**10.0 Stationary Equipment**

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**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**

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The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**The Park @ Live Oak (Landfilling Operations)**  
**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 | 1.00 | 1000sqft | 0.02        | 1,000.00           | 0          |

**1.2 Other Project Characteristics**

|                                |                            |                                |       |                                  |       |
|--------------------------------|----------------------------|--------------------------------|-------|----------------------------------|-------|
| <b>Urbanization</b>            | Urban                      | <b>Wind Speed (m/s)</b>        | 2.2   | <b>Precipitation Freq (Days)</b> | 31    |
| <b>Climate Zone</b>            | 9                          |                                |       | <b>Operational Year</b>          | 2021  |
| <b>Utility Company</b>         | Southern California Edison |                                |       |                                  |       |
| <b>CO2 Intensity (lb/MWhr)</b> | 702.44                     | <b>CH4 Intensity (lb/MWhr)</b> | 0.029 | <b>N2O Intensity (lb/MWhr)</b>   | 0.006 |

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use -

Construction Phase - Equipment Emission

Off-road Equipment - Rubber Tired Dozer represents Wheel Dozer with 498 HP; Off; Other Construction Equipment represents Water Trucks (5,000 Gal)

Trips and VMT - Landfill Equipment Operations

Grading -

Construction Off-road Equipment Mitigation - Tier 4 Final Excavating Equipment

| Table Name     | Column Name                  | Default Value | New Value |
|----------------|------------------------------|---------------|-----------|
| tblAreaCoating | Area_Nonresidential_Exterior | 500           | 0         |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|                         |                              |             |              |
|-------------------------|------------------------------|-------------|--------------|
| tblAreaCoating          | Area_Nonresidential_Interior | 1500        | 0            |
| tblConstEquipMitigation | NumberOfEquipmentMitigated   | 0.00        | 1.00         |
| tblConstEquipMitigation | Tier                         | No Change   | Tier 4 Final |
| tblFleetMix             | HHD                          | 0.03        | 0.00         |
| tblFleetMix             | LDA                          | 0.55        | 0.00         |
| tblFleetMix             | LDT1                         | 0.04        | 0.00         |
| tblFleetMix             | LDT2                         | 0.20        | 0.00         |
| tblFleetMix             | LHD1                         | 0.02        | 0.00         |
| tblFleetMix             | LHD2                         | 5.8510e-003 | 0.00         |
| tblFleetMix             | MCY                          | 4.8170e-003 | 0.00         |
| tblFleetMix             | MDV                          | 0.12        | 0.00         |
| tblFleetMix             | MH                           | 9.2500e-004 | 0.00         |
| tblFleetMix             | MHD                          | 0.02        | 0.00         |
| tblFleetMix             | OBUS                         | 2.0700e-003 | 0.00         |
| tblFleetMix             | SBUS                         | 7.0700e-004 | 0.00         |
| tblFleetMix             | UBUS                         | 1.8770e-003 | 0.00         |
| tblGrading              | MaterialImported             | 0.00        | 1,750.00     |
| tblOffRoadEquipment     | HorsePower                   | 247.00      | 498.00       |
| tblOffRoadEquipment     | HorsePower                   | 85.00       | 415.00       |
| tblOffRoadEquipment     | HorsePower                   | 158.00      | 396.00       |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount   | 1.00        | 0.00         |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount   | 1.00        | 2.00         |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount   | 2.00        | 0.00         |
| tblOffRoadEquipment     | UsageHours                   | 8.00        | 0.00         |
| tblOffRoadEquipment     | UsageHours                   | 1.00        | 7.50         |
| tblOffRoadEquipment     | UsageHours                   | 6.00        | 0.00         |
| tblTripsAndVMT          | HaulingTripNumber            | 219.00      | 0.00         |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|                |                  |             |             |
|----------------|------------------|-------------|-------------|
| tblTripsAndVMT | WorkerTripNumber | 15.00       | 0.00        |
| tblVehicleEF   | HHD              | 0.75        | 0.85        |
| tblVehicleEF   | HHD              | 0.09        | 0.08        |
| tblVehicleEF   | HHD              | 0.09        | 0.12        |
| tblVehicleEF   | HHD              | 2.69        | 3.14        |
| tblVehicleEF   | HHD              | 0.97        | 0.99        |
| tblVehicleEF   | HHD              | 2.90        | 3.18        |
| tblVehicleEF   | HHD              | 4,950.31    | 4,992.93    |
| tblVehicleEF   | HHD              | 1,610.72    | 1,647.55    |
| tblVehicleEF   | HHD              | 9.10        | 9.63        |
| tblVehicleEF   | HHD              | 22.19       | 25.01       |
| tblVehicleEF   | HHD              | 3.79        | 4.55        |
| tblVehicleEF   | HHD              | 19.75       | 19.77       |
| tblVehicleEF   | HHD              | 0.02        | 0.03        |
| tblVehicleEF   | HHD              | 0.06        | 0.06        |
| tblVehicleEF   | HHD              | 0.04        | 0.04        |
| tblVehicleEF   | HHD              | 0.02        | 0.02        |
| tblVehicleEF   | HHD              | 7.7000e-005 | 1.1800e-004 |
| tblVehicleEF   | HHD              | 0.02        | 0.03        |
| tblVehicleEF   | HHD              | 0.03        | 0.03        |
| tblVehicleEF   | HHD              | 8.8180e-003 | 8.8190e-003 |
| tblVehicleEF   | HHD              | 0.02        | 0.02        |
| tblVehicleEF   | HHD              | 7.1000e-005 | 1.1000e-004 |
| tblVehicleEF   | HHD              | 1.0500e-004 | 1.3200e-004 |
| tblVehicleEF   | HHD              | 4.2950e-003 | 5.9330e-003 |
| tblVehicleEF   | HHD              | 0.67        | 0.79        |
| tblVehicleEF   | HHD              | 7.5000e-005 | 9.1000e-005 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | HHD | 0.13        | 0.14        |
| tblVehicleEF | HHD | 3.6200e-004 | 4.8800e-004 |
| tblVehicleEF | HHD | 0.08        | 0.10        |
| tblVehicleEF | HHD | 0.05        | 0.05        |
| tblVehicleEF | HHD | 0.01        | 0.02        |
| tblVehicleEF | HHD | 1.3900e-004 | 1.4900e-004 |
| tblVehicleEF | HHD | 1.0500e-004 | 1.3200e-004 |
| tblVehicleEF | HHD | 4.2950e-003 | 5.9330e-003 |
| tblVehicleEF | HHD | 0.79        | 0.92        |
| tblVehicleEF | HHD | 7.5000e-005 | 9.1000e-005 |
| tblVehicleEF | HHD | 0.23        | 0.24        |
| tblVehicleEF | HHD | 3.6200e-004 | 4.8800e-004 |
| tblVehicleEF | HHD | 0.09        | 0.11        |
| tblVehicleEF | HHD | 0.71        | 0.80        |
| tblVehicleEF | HHD | 0.09        | 0.08        |
| tblVehicleEF | HHD | 0.08        | 0.11        |
| tblVehicleEF | HHD | 1.96        | 2.29        |
| tblVehicleEF | HHD | 0.97        | 0.99        |
| tblVehicleEF | HHD | 2.75        | 3.02        |
| tblVehicleEF | HHD | 5,242.63    | 5,285.68    |
| tblVehicleEF | HHD | 1,610.72    | 1,647.55    |
| tblVehicleEF | HHD | 9.10        | 9.63        |
| tblVehicleEF | HHD | 22.90       | 25.81       |
| tblVehicleEF | HHD | 3.59        | 4.30        |
| tblVehicleEF | HHD | 19.74       | 19.76       |
| tblVehicleEF | HHD | 0.01        | 0.03        |
| tblVehicleEF | HHD | 0.06        | 0.06        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | HHD | 0.04        | 0.04        |
| tblVehicleEF | HHD | 0.02        | 0.02        |
| tblVehicleEF | HHD | 7.7000e-005 | 1.1800e-004 |
| tblVehicleEF | HHD | 0.01        | 0.02        |
| tblVehicleEF | HHD | 0.03        | 0.03        |
| tblVehicleEF | HHD | 8.8180e-003 | 8.8190e-003 |
| tblVehicleEF | HHD | 0.02        | 0.02        |
| tblVehicleEF | HHD | 7.1000e-005 | 1.1000e-004 |
| tblVehicleEF | HHD | 1.7000e-004 | 2.1500e-004 |
| tblVehicleEF | HHD | 4.5010e-003 | 6.1900e-003 |
| tblVehicleEF | HHD | 0.64        | 0.75        |
| tblVehicleEF | HHD | 1.1700e-004 | 1.4700e-004 |
| tblVehicleEF | HHD | 0.13        | 0.14        |
| tblVehicleEF | HHD | 3.5600e-004 | 4.8400e-004 |
| tblVehicleEF | HHD | 0.07        | 0.10        |
| tblVehicleEF | HHD | 0.05        | 0.05        |
| tblVehicleEF | HHD | 0.01        | 0.02        |
| tblVehicleEF | HHD | 1.3600e-004 | 1.4700e-004 |
| tblVehicleEF | HHD | 1.7000e-004 | 2.1500e-004 |
| tblVehicleEF | HHD | 4.5010e-003 | 6.1900e-003 |
| tblVehicleEF | HHD | 0.74        | 0.87        |
| tblVehicleEF | HHD | 1.1700e-004 | 1.4700e-004 |
| tblVehicleEF | HHD | 0.23        | 0.24        |
| tblVehicleEF | HHD | 3.5600e-004 | 4.8400e-004 |
| tblVehicleEF | HHD | 0.08        | 0.11        |
| tblVehicleEF | HHD | 0.81        | 0.91        |
| tblVehicleEF | HHD | 0.09        | 0.08        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | HHD | 0.09        | 0.12        |
| tblVehicleEF | HHD | 3.70        | 4.32        |
| tblVehicleEF | HHD | 0.97        | 0.99        |
| tblVehicleEF | HHD | 2.92        | 3.20        |
| tblVehicleEF | HHD | 4,546.63    | 4,588.64    |
| tblVehicleEF | HHD | 1,610.72    | 1,647.55    |
| tblVehicleEF | HHD | 9.10        | 9.63        |
| tblVehicleEF | HHD | 21.21       | 23.92       |
| tblVehicleEF | HHD | 3.74        | 4.48        |
| tblVehicleEF | HHD | 19.75       | 19.77       |
| tblVehicleEF | HHD | 0.02        | 0.04        |
| tblVehicleEF | HHD | 0.06        | 0.06        |
| tblVehicleEF | HHD | 0.04        | 0.04        |
| tblVehicleEF | HHD | 0.02        | 0.02        |
| tblVehicleEF | HHD | 7.7000e-005 | 1.1800e-004 |
| tblVehicleEF | HHD | 0.02        | 0.03        |
| tblVehicleEF | HHD | 0.03        | 0.03        |
| tblVehicleEF | HHD | 8.8180e-003 | 8.8190e-003 |
| tblVehicleEF | HHD | 0.02        | 0.02        |
| tblVehicleEF | HHD | 7.1000e-005 | 1.1000e-004 |
| tblVehicleEF | HHD | 1.0000e-004 | 1.2900e-004 |
| tblVehicleEF | HHD | 4.6100e-003 | 6.7430e-003 |
| tblVehicleEF | HHD | 0.73        | 0.86        |
| tblVehicleEF | HHD | 7.2000e-005 | 8.9000e-005 |
| tblVehicleEF | HHD | 0.13        | 0.14        |
| tblVehicleEF | HHD | 3.9100e-004 | 5.2300e-004 |
| tblVehicleEF | HHD | 0.08        | 0.10        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | HHD | 0.04        | 0.04        |
| tblVehicleEF | HHD | 0.01        | 0.02        |
| tblVehicleEF | HHD | 1.3900e-004 | 1.5000e-004 |
| tblVehicleEF | HHD | 1.0000e-004 | 1.2900e-004 |
| tblVehicleEF | HHD | 4.6100e-003 | 6.7430e-003 |
| tblVehicleEF | HHD | 0.85        | 0.99        |
| tblVehicleEF | HHD | 7.2000e-005 | 8.9000e-005 |
| tblVehicleEF | HHD | 0.23        | 0.24        |
| tblVehicleEF | HHD | 3.9100e-004 | 5.2300e-004 |
| tblVehicleEF | HHD | 0.09        | 0.11        |
| tblVehicleEF | LDA | 5.2110e-003 | 6.4660e-003 |
| tblVehicleEF | LDA | 5.8420e-003 | 7.8200e-003 |
| tblVehicleEF | LDA | 0.65        | 0.76        |
| tblVehicleEF | LDA | 1.21        | 1.52        |
| tblVehicleEF | LDA | 275.32      | 296.90      |
| tblVehicleEF | LDA | 58.96       | 63.02       |
| tblVehicleEF | LDA | 0.05        | 0.07        |
| tblVehicleEF | LDA | 0.08        | 0.10        |
| tblVehicleEF | LDA | 2.0440e-003 | 2.1320e-003 |
| tblVehicleEF | LDA | 2.2900e-003 | 2.3470e-003 |
| tblVehicleEF | LDA | 1.8840e-003 | 1.9670e-003 |
| tblVehicleEF | LDA | 2.1060e-003 | 2.1590e-003 |
| tblVehicleEF | LDA | 0.04        | 0.05        |
| tblVehicleEF | LDA | 0.11        | 0.12        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.01        | 0.02        |
| tblVehicleEF | LDA | 0.04        | 0.04        |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | LDA | 0.08        | 0.11        |
| tblVehicleEF | LDA | 2.7580e-003 | 2.9750e-003 |
| tblVehicleEF | LDA | 6.1000e-004 | 6.5600e-004 |
| tblVehicleEF | LDA | 0.04        | 0.05        |
| tblVehicleEF | LDA | 0.11        | 0.12        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.02        | 0.02        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.09        | 0.12        |
| tblVehicleEF | LDA | 5.5820e-003 | 6.9190e-003 |
| tblVehicleEF | LDA | 5.1760e-003 | 6.9240e-003 |
| tblVehicleEF | LDA | 0.73        | 0.85        |
| tblVehicleEF | LDA | 1.04        | 1.31        |
| tblVehicleEF | LDA | 290.06      | 312.75      |
| tblVehicleEF | LDA | 58.96       | 63.02       |
| tblVehicleEF | LDA | 0.05        | 0.06        |
| tblVehicleEF | LDA | 0.07        | 0.09        |
| tblVehicleEF | LDA | 2.0440e-003 | 2.1320e-003 |
| tblVehicleEF | LDA | 2.2900e-003 | 2.3470e-003 |
| tblVehicleEF | LDA | 1.8840e-003 | 1.9670e-003 |
| tblVehicleEF | LDA | 2.1060e-003 | 2.1590e-003 |
| tblVehicleEF | LDA | 0.07        | 0.08        |
| tblVehicleEF | LDA | 0.11        | 0.13        |
| tblVehicleEF | LDA | 0.06        | 0.07        |
| tblVehicleEF | LDA | 0.01        | 0.02        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.07        | 0.09        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | LDA | 2.9060e-003 | 3.1350e-003 |
| tblVehicleEF | LDA | 6.0700e-004 | 6.5300e-004 |
| tblVehicleEF | LDA | 0.07        | 0.08        |
| tblVehicleEF | LDA | 0.11        | 0.13        |
| tblVehicleEF | LDA | 0.06        | 0.07        |
| tblVehicleEF | LDA | 0.02        | 0.03        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.08        | 0.10        |
| tblVehicleEF | LDA | 5.0990e-003 | 6.3270e-003 |
| tblVehicleEF | LDA | 5.9770e-003 | 8.0020e-003 |
| tblVehicleEF | LDA | 0.63        | 0.74        |
| tblVehicleEF | LDA | 1.25        | 1.56        |
| tblVehicleEF | LDA | 270.53      | 291.73      |
| tblVehicleEF | LDA | 58.96       | 63.02       |
| tblVehicleEF | LDA | 0.05        | 0.06        |
| tblVehicleEF | LDA | 0.08        | 0.10        |
| tblVehicleEF | LDA | 2.0440e-003 | 2.1320e-003 |
| tblVehicleEF | LDA | 2.2900e-003 | 2.3470e-003 |
| tblVehicleEF | LDA | 1.8840e-003 | 1.9670e-003 |
| tblVehicleEF | LDA | 2.1060e-003 | 2.1590e-003 |
| tblVehicleEF | LDA | 0.04        | 0.05        |
| tblVehicleEF | LDA | 0.11        | 0.14        |
| tblVehicleEF | LDA | 0.04        | 0.04        |
| tblVehicleEF | LDA | 0.01        | 0.02        |
| tblVehicleEF | LDA | 0.05        | 0.05        |
| tblVehicleEF | LDA | 0.08        | 0.11        |
| tblVehicleEF | LDA | 2.7100e-003 | 2.9230e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDA  | 6.1100e-004 | 6.5700e-004 |
| tblVehicleEF | LDA  | 0.04        | 0.05        |
| tblVehicleEF | LDA  | 0.11        | 0.14        |
| tblVehicleEF | LDA  | 0.04        | 0.04        |
| tblVehicleEF | LDA  | 0.02        | 0.02        |
| tblVehicleEF | LDA  | 0.05        | 0.05        |
| tblVehicleEF | LDA  | 0.09        | 0.12        |
| tblVehicleEF | LDT1 | 0.01        | 0.02        |
| tblVehicleEF | LDT1 | 0.02        | 0.02        |
| tblVehicleEF | LDT1 | 1.65        | 1.99        |
| tblVehicleEF | LDT1 | 3.08        | 3.80        |
| tblVehicleEF | LDT1 | 339.89      | 357.64      |
| tblVehicleEF | LDT1 | 71.61       | 74.91       |
| tblVehicleEF | LDT1 | 0.16        | 0.19        |
| tblVehicleEF | LDT1 | 0.18        | 0.23        |
| tblVehicleEF | LDT1 | 3.3000e-003 | 3.6680e-003 |
| tblVehicleEF | LDT1 | 3.5610e-003 | 3.9250e-003 |
| tblVehicleEF | LDT1 | 3.0390e-003 | 3.3780e-003 |
| tblVehicleEF | LDT1 | 3.2750e-003 | 3.6110e-003 |
| tblVehicleEF | LDT1 | 0.14        | 0.16        |
| tblVehicleEF | LDT1 | 0.29        | 0.33        |
| tblVehicleEF | LDT1 | 0.11        | 0.13        |
| tblVehicleEF | LDT1 | 0.04        | 0.05        |
| tblVehicleEF | LDT1 | 0.18        | 0.20        |
| tblVehicleEF | LDT1 | 0.21        | 0.27        |
| tblVehicleEF | LDT1 | 3.4200e-003 | 3.6030e-003 |
| tblVehicleEF | LDT1 | 7.7000e-004 | 8.1600e-004 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT1 | 0.14        | 0.16        |
| tblVehicleEF | LDT1 | 0.29        | 0.33        |
| tblVehicleEF | LDT1 | 0.11        | 0.13        |
| tblVehicleEF | LDT1 | 0.05        | 0.07        |
| tblVehicleEF | LDT1 | 0.18        | 0.20        |
| tblVehicleEF | LDT1 | 0.24        | 0.30        |
| tblVehicleEF | LDT1 | 0.02        | 0.02        |
| tblVehicleEF | LDT1 | 0.01        | 0.02        |
| tblVehicleEF | LDT1 | 1.81        | 2.18        |
| tblVehicleEF | LDT1 | 2.63        | 3.24        |
| tblVehicleEF | LDT1 | 356.82      | 375.39      |
| tblVehicleEF | LDT1 | 71.61       | 74.91       |
| tblVehicleEF | LDT1 | 0.14        | 0.17        |
| tblVehicleEF | LDT1 | 0.17        | 0.21        |
| tblVehicleEF | LDT1 | 3.3000e-003 | 3.6680e-003 |
| tblVehicleEF | LDT1 | 3.5610e-003 | 3.9250e-003 |
| tblVehicleEF | LDT1 | 3.0390e-003 | 3.3780e-003 |
| tblVehicleEF | LDT1 | 3.2750e-003 | 3.6110e-003 |
| tblVehicleEF | LDT1 | 0.24        | 0.27        |
| tblVehicleEF | LDT1 | 0.31        | 0.36        |
| tblVehicleEF | LDT1 | 0.17        | 0.20        |
| tblVehicleEF | LDT1 | 0.04        | 0.05        |
| tblVehicleEF | LDT1 | 0.17        | 0.19        |
| tblVehicleEF | LDT1 | 0.19        | 0.24        |
| tblVehicleEF | LDT1 | 3.5920e-003 | 3.7830e-003 |
| tblVehicleEF | LDT1 | 7.6200e-004 | 8.0600e-004 |
| tblVehicleEF | LDT1 | 0.24        | 0.27        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT1 | 0.31        | 0.36        |
| tblVehicleEF | LDT1 | 0.17        | 0.20        |
| tblVehicleEF | LDT1 | 0.06        | 0.07        |
| tblVehicleEF | LDT1 | 0.17        | 0.19        |
| tblVehicleEF | LDT1 | 0.21        | 0.26        |
| tblVehicleEF | LDT1 | 0.01        | 0.02        |
| tblVehicleEF | LDT1 | 0.02        | 0.02        |
| tblVehicleEF | LDT1 | 1.59        | 1.93        |
| tblVehicleEF | LDT1 | 3.17        | 3.91        |
| tblVehicleEF | LDT1 | 334.24      | 351.73      |
| tblVehicleEF | LDT1 | 71.61       | 74.91       |
| tblVehicleEF | LDT1 | 0.15        | 0.19        |
| tblVehicleEF | LDT1 | 0.18        | 0.23        |
| tblVehicleEF | LDT1 | 3.3000e-003 | 3.6680e-003 |
| tblVehicleEF | LDT1 | 3.5610e-003 | 3.9250e-003 |
| tblVehicleEF | LDT1 | 3.0390e-003 | 3.3780e-003 |
| tblVehicleEF | LDT1 | 3.2750e-003 | 3.6110e-003 |
| tblVehicleEF | LDT1 | 0.14        | 0.16        |
| tblVehicleEF | LDT1 | 0.33        | 0.38        |
| tblVehicleEF | LDT1 | 0.11        | 0.12        |
| tblVehicleEF | LDT1 | 0.04        | 0.05        |
| tblVehicleEF | LDT1 | 0.21        | 0.24        |
| tblVehicleEF | LDT1 | 0.22        | 0.28        |
| tblVehicleEF | LDT1 | 3.3630e-003 | 3.5430e-003 |
| tblVehicleEF | LDT1 | 7.7200e-004 | 8.1800e-004 |
| tblVehicleEF | LDT1 | 0.14        | 0.16        |
| tblVehicleEF | LDT1 | 0.33        | 0.38        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT1 | 0.11        | 0.12        |
| tblVehicleEF | LDT1 | 0.05        | 0.07        |
| tblVehicleEF | LDT1 | 0.21        | 0.24        |
| tblVehicleEF | LDT1 | 0.24        | 0.31        |
| tblVehicleEF | LDT2 | 7.0440e-003 | 8.6130e-003 |
| tblVehicleEF | LDT2 | 7.1880e-003 | 9.5100e-003 |
| tblVehicleEF | LDT2 | 0.84        | 1.00        |
| tblVehicleEF | LDT2 | 1.49        | 1.89        |
| tblVehicleEF | LDT2 | 382.63      | 406.62      |
| tblVehicleEF | LDT2 | 81.02       | 85.85       |
| tblVehicleEF | LDT2 | 0.08        | 0.11        |
| tblVehicleEF | LDT2 | 0.12        | 0.17        |
| tblVehicleEF | LDT2 | 1.9920e-003 | 1.9950e-003 |
| tblVehicleEF | LDT2 | 2.3200e-003 | 2.3030e-003 |
| tblVehicleEF | LDT2 | 1.8320e-003 | 1.8350e-003 |
| tblVehicleEF | LDT2 | 2.1330e-003 | 2.1180e-003 |
| tblVehicleEF | LDT2 | 0.05        | 0.06        |
| tblVehicleEF | LDT2 | 0.11        | 0.13        |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.02        | 0.02        |
| tblVehicleEF | LDT2 | 0.06        | 0.07        |
| tblVehicleEF | LDT2 | 0.10        | 0.13        |
| tblVehicleEF | LDT2 | 3.8330e-003 | 4.0750e-003 |
| tblVehicleEF | LDT2 | 8.3500e-004 | 8.9100e-004 |
| tblVehicleEF | LDT2 | 0.05        | 0.06        |
| tblVehicleEF | LDT2 | 0.11        | 0.13        |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT2 | 0.03        | 0.03        |
| tblVehicleEF | LDT2 | 0.06        | 0.07        |
| tblVehicleEF | LDT2 | 0.11        | 0.14        |
| tblVehicleEF | LDT2 | 7.5350e-003 | 9.1950e-003 |
| tblVehicleEF | LDT2 | 6.3730e-003 | 8.4280e-003 |
| tblVehicleEF | LDT2 | 0.94        | 1.11        |
| tblVehicleEF | LDT2 | 1.28        | 1.62        |
| tblVehicleEF | LDT2 | 402.38      | 427.54      |
| tblVehicleEF | LDT2 | 81.02       | 85.85       |
| tblVehicleEF | LDT2 | 0.07        | 0.09        |
| tblVehicleEF | LDT2 | 0.11        | 0.16        |
| tblVehicleEF | LDT2 | 1.9920e-003 | 1.9950e-003 |
| tblVehicleEF | LDT2 | 2.3200e-003 | 2.3030e-003 |
| tblVehicleEF | LDT2 | 1.8320e-003 | 1.8350e-003 |
| tblVehicleEF | LDT2 | 2.1330e-003 | 2.1180e-003 |
| tblVehicleEF | LDT2 | 0.08        | 0.09        |
| tblVehicleEF | LDT2 | 0.12        | 0.14        |
| tblVehicleEF | LDT2 | 0.07        | 0.08        |
| tblVehicleEF | LDT2 | 0.02        | 0.02        |
| tblVehicleEF | LDT2 | 0.06        | 0.07        |
| tblVehicleEF | LDT2 | 0.09        | 0.11        |
| tblVehicleEF | LDT2 | 4.0320e-003 | 4.2860e-003 |
| tblVehicleEF | LDT2 | 8.3200e-004 | 8.8600e-004 |
| tblVehicleEF | LDT2 | 0.08        | 0.09        |
| tblVehicleEF | LDT2 | 0.12        | 0.14        |
| tblVehicleEF | LDT2 | 0.07        | 0.08        |
| tblVehicleEF | LDT2 | 0.03        | 0.03        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT2 | 0.06        | 0.07        |
| tblVehicleEF | LDT2 | 0.09        | 0.12        |
| tblVehicleEF | LDT2 | 6.8940e-003 | 8.4340e-003 |
| tblVehicleEF | LDT2 | 7.3550e-003 | 9.7300e-003 |
| tblVehicleEF | LDT2 | 0.81        | 0.96        |
| tblVehicleEF | LDT2 | 1.53        | 1.94        |
| tblVehicleEF | LDT2 | 376.06      | 399.66      |
| tblVehicleEF | LDT2 | 81.02       | 85.85       |
| tblVehicleEF | LDT2 | 0.08        | 0.10        |
| tblVehicleEF | LDT2 | 0.12        | 0.17        |
| tblVehicleEF | LDT2 | 1.9920e-003 | 1.9950e-003 |
| tblVehicleEF | LDT2 | 2.3200e-003 | 2.3030e-003 |
| tblVehicleEF | LDT2 | 1.8320e-003 | 1.8350e-003 |
| tblVehicleEF | LDT2 | 2.1330e-003 | 2.1180e-003 |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.12        | 0.14        |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.02        | 0.02        |
| tblVehicleEF | LDT2 | 0.07        | 0.08        |
| tblVehicleEF | LDT2 | 0.10        | 0.13        |
| tblVehicleEF | LDT2 | 3.7670e-003 | 4.0050e-003 |
| tblVehicleEF | LDT2 | 8.3600e-004 | 8.9200e-004 |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.12        | 0.14        |
| tblVehicleEF | LDT2 | 0.05        | 0.05        |
| tblVehicleEF | LDT2 | 0.02        | 0.03        |
| tblVehicleEF | LDT2 | 0.07        | 0.08        |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LDT2 | 0.11        | 0.14        |
| tblVehicleEF | LHD1 | 5.8640e-003 | 6.4120e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.02        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 0.15        | 0.16        |
| tblVehicleEF | LHD1 | 0.91        | 1.13        |
| tblVehicleEF | LHD1 | 2.81        | 3.23        |
| tblVehicleEF | LHD1 | 9.00        | 8.98        |
| tblVehicleEF | LHD1 | 610.88      | 628.01      |
| tblVehicleEF | LHD1 | 33.50       | 35.68       |
| tblVehicleEF | LHD1 | 0.08        | 0.07        |
| tblVehicleEF | LHD1 | 1.31        | 1.53        |
| tblVehicleEF | LHD1 | 1.05        | 1.14        |
| tblVehicleEF | LHD1 | 8.5300e-004 | 8.1700e-004 |
| tblVehicleEF | LHD1 | 0.01        | 9.8590e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 1.0090e-003 | 1.1990e-003 |
| tblVehicleEF | LHD1 | 8.1600e-004 | 7.8200e-004 |
| tblVehicleEF | LHD1 | 2.5040e-003 | 2.4650e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 9.2800e-004 | 1.1050e-003 |
| tblVehicleEF | LHD1 | 3.3200e-003 | 3.5670e-003 |
| tblVehicleEF | LHD1 | 0.10        | 0.11        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 1.9270e-003 | 2.0130e-003 |
| tblVehicleEF | LHD1 | 0.07        | 0.08        |
| tblVehicleEF | LHD1 | 0.31        | 0.32        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD1 | 0.28        | 0.33        |
| tblVehicleEF | LHD1 | 9.0000e-005 | 9.1000e-005 |
| tblVehicleEF | LHD1 | 6.0020e-003 | 6.1830e-003 |
| tblVehicleEF | LHD1 | 3.8800e-004 | 4.1800e-004 |
| tblVehicleEF | LHD1 | 3.3200e-003 | 3.5670e-003 |
| tblVehicleEF | LHD1 | 0.10        | 0.11        |
| tblVehicleEF | LHD1 | 0.02        | 0.03        |
| tblVehicleEF | LHD1 | 1.9270e-003 | 2.0130e-003 |
| tblVehicleEF | LHD1 | 0.09        | 0.10        |
| tblVehicleEF | LHD1 | 0.31        | 0.32        |
| tblVehicleEF | LHD1 | 0.31        | 0.36        |
| tblVehicleEF | LHD1 | 5.8640e-003 | 6.4120e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.02        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 0.15        | 0.16        |
| tblVehicleEF | LHD1 | 0.92        | 1.14        |
| tblVehicleEF | LHD1 | 2.68        | 3.08        |
| tblVehicleEF | LHD1 | 9.00        | 8.98        |
| tblVehicleEF | LHD1 | 610.88      | 628.01      |
| tblVehicleEF | LHD1 | 33.50       | 35.68       |
| tblVehicleEF | LHD1 | 0.08        | 0.07        |
| tblVehicleEF | LHD1 | 1.23        | 1.43        |
| tblVehicleEF | LHD1 | 1.01        | 1.10        |
| tblVehicleEF | LHD1 | 8.5300e-004 | 8.1700e-004 |
| tblVehicleEF | LHD1 | 0.01        | 9.8590e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 1.0090e-003 | 1.1990e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD1 | 8.1600e-004 | 7.8200e-004 |
| tblVehicleEF | LHD1 | 2.5040e-003 | 2.4650e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 9.2800e-004 | 1.1050e-003 |
| tblVehicleEF | LHD1 | 5.1880e-003 | 5.5850e-003 |
| tblVehicleEF | LHD1 | 0.11        | 0.12        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 2.9140e-003 | 3.0770e-003 |
| tblVehicleEF | LHD1 | 0.07        | 0.08        |
| tblVehicleEF | LHD1 | 0.30        | 0.31        |
| tblVehicleEF | LHD1 | 0.27        | 0.32        |
| tblVehicleEF | LHD1 | 9.0000e-005 | 9.1000e-005 |
| tblVehicleEF | LHD1 | 6.0030e-003 | 6.1830e-003 |
| tblVehicleEF | LHD1 | 3.8500e-004 | 4.1500e-004 |
| tblVehicleEF | LHD1 | 5.1880e-003 | 5.5850e-003 |
| tblVehicleEF | LHD1 | 0.11        | 0.12        |
| tblVehicleEF | LHD1 | 0.02        | 0.03        |
| tblVehicleEF | LHD1 | 2.9140e-003 | 3.0770e-003 |
| tblVehicleEF | LHD1 | 0.09        | 0.10        |
| tblVehicleEF | LHD1 | 0.30        | 0.31        |
| tblVehicleEF | LHD1 | 0.30        | 0.35        |
| tblVehicleEF | LHD1 | 5.8640e-003 | 6.4120e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.02        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 0.15        | 0.16        |
| tblVehicleEF | LHD1 | 0.91        | 1.12        |
| tblVehicleEF | LHD1 | 2.82        | 3.25        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD1 | 9.00        | 8.98        |
| tblVehicleEF | LHD1 | 610.88      | 628.01      |
| tblVehicleEF | LHD1 | 33.50       | 35.68       |
| tblVehicleEF | LHD1 | 0.08        | 0.07        |
| tblVehicleEF | LHD1 | 1.28        | 1.50        |
| tblVehicleEF | LHD1 | 1.06        | 1.15        |
| tblVehicleEF | LHD1 | 8.5300e-004 | 8.1700e-004 |
| tblVehicleEF | LHD1 | 0.01        | 9.8590e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 1.0090e-003 | 1.1990e-003 |
| tblVehicleEF | LHD1 | 8.1600e-004 | 7.8200e-004 |
| tblVehicleEF | LHD1 | 2.5040e-003 | 2.4650e-003 |
| tblVehicleEF | LHD1 | 0.01        | 0.01        |
| tblVehicleEF | LHD1 | 9.2800e-004 | 1.1050e-003 |
| tblVehicleEF | LHD1 | 3.3910e-003 | 3.6920e-003 |
| tblVehicleEF | LHD1 | 0.12        | 0.13        |
| tblVehicleEF | LHD1 | 0.02        | 0.02        |
| tblVehicleEF | LHD1 | 1.8940e-003 | 1.9880e-003 |
| tblVehicleEF | LHD1 | 0.07        | 0.08        |
| tblVehicleEF | LHD1 | 0.33        | 0.35        |
| tblVehicleEF | LHD1 | 0.28        | 0.33        |
| tblVehicleEF | LHD1 | 9.0000e-005 | 9.1000e-005 |
| tblVehicleEF | LHD1 | 6.0020e-003 | 6.1830e-003 |
| tblVehicleEF | LHD1 | 3.8800e-004 | 4.1800e-004 |
| tblVehicleEF | LHD1 | 3.3910e-003 | 3.6920e-003 |
| tblVehicleEF | LHD1 | 0.12        | 0.13        |
| tblVehicleEF | LHD1 | 0.02        | 0.03        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD1 | 1.8940e-003 | 1.9880e-003 |
| tblVehicleEF | LHD1 | 0.09        | 0.10        |
| tblVehicleEF | LHD1 | 0.33        | 0.35        |
| tblVehicleEF | LHD1 | 0.31        | 0.36        |
| tblVehicleEF | LHD2 | 4.2390e-003 | 4.7550e-003 |
| tblVehicleEF | LHD2 | 4.8300e-003 | 6.4800e-003 |
| tblVehicleEF | LHD2 | 9.6290e-003 | 0.01        |
| tblVehicleEF | LHD2 | 0.13        | 0.14        |
| tblVehicleEF | LHD2 | 0.41        | 0.53        |
| tblVehicleEF | LHD2 | 1.43        | 1.73        |
| tblVehicleEF | LHD2 | 13.72       | 13.70       |
| tblVehicleEF | LHD2 | 622.17      | 639.58      |
| tblVehicleEF | LHD2 | 28.08       | 30.04       |
| tblVehicleEF | LHD2 | 0.10        | 0.11        |
| tblVehicleEF | LHD2 | 0.93        | 1.25        |
| tblVehicleEF | LHD2 | 0.60        | 0.70        |
| tblVehicleEF | LHD2 | 1.2010e-003 | 1.2000e-003 |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 4.7800e-004 | 5.7800e-004 |
| tblVehicleEF | LHD2 | 2.6500e-003 | 2.6260e-003 |
| tblVehicleEF | LHD2 | 9.6020e-003 | 0.01        |
| tblVehicleEF | LHD2 | 4.3900e-004 | 5.3200e-004 |
| tblVehicleEF | LHD2 | 1.3010e-003 | 1.5870e-003 |
| tblVehicleEF | LHD2 | 0.04        | 0.05        |
| tblVehicleEF | LHD2 | 0.01        | 0.02        |
| tblVehicleEF | LHD2 | 8.0500e-004 | 9.3200e-004 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD2 | 0.05        | 0.06        |
| tblVehicleEF | LHD2 | 0.09        | 0.12        |
| tblVehicleEF | LHD2 | 0.13        | 0.17        |
| tblVehicleEF | LHD2 | 6.0640e-003 | 6.2420e-003 |
| tblVehicleEF | LHD2 | 3.0700e-004 | 3.3300e-004 |
| tblVehicleEF | LHD2 | 1.3010e-003 | 1.5870e-003 |
| tblVehicleEF | LHD2 | 0.04        | 0.05        |
| tblVehicleEF | LHD2 | 0.02        | 0.02        |
| tblVehicleEF | LHD2 | 8.0500e-004 | 9.3200e-004 |
| tblVehicleEF | LHD2 | 0.06        | 0.07        |
| tblVehicleEF | LHD2 | 0.09        | 0.12        |
| tblVehicleEF | LHD2 | 0.14        | 0.18        |
| tblVehicleEF | LHD2 | 4.2390e-003 | 4.7550e-003 |
| tblVehicleEF | LHD2 | 4.8960e-003 | 6.5770e-003 |
| tblVehicleEF | LHD2 | 9.2930e-003 | 0.01        |
| tblVehicleEF | LHD2 | 0.13        | 0.14        |
| tblVehicleEF | LHD2 | 0.41        | 0.54        |
| tblVehicleEF | LHD2 | 1.37        | 1.65        |
| tblVehicleEF | LHD2 | 13.72       | 13.70       |
| tblVehicleEF | LHD2 | 622.17      | 639.58      |
| tblVehicleEF | LHD2 | 28.08       | 30.04       |
| tblVehicleEF | LHD2 | 0.10        | 0.11        |
| tblVehicleEF | LHD2 | 0.88        | 1.17        |
| tblVehicleEF | LHD2 | 0.58        | 0.67        |
| tblVehicleEF | LHD2 | 1.2010e-003 | 1.2000e-003 |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD2 | 4.7800e-004 | 5.7800e-004 |
| tblVehicleEF | LHD2 | 2.6500e-003 | 2.6260e-003 |
| tblVehicleEF | LHD2 | 9.6020e-003 | 0.01        |
| tblVehicleEF | LHD2 | 4.3900e-004 | 5.3200e-004 |
| tblVehicleEF | LHD2 | 2.0260e-003 | 2.4740e-003 |
| tblVehicleEF | LHD2 | 0.04        | 0.05        |
| tblVehicleEF | LHD2 | 0.01        | 0.02        |
| tblVehicleEF | LHD2 | 1.2020e-003 | 1.4090e-003 |
| tblVehicleEF | LHD2 | 0.05        | 0.06        |
| tblVehicleEF | LHD2 | 0.09        | 0.12        |
| tblVehicleEF | LHD2 | 0.13        | 0.16        |
| tblVehicleEF | LHD2 | 6.0640e-003 | 6.2420e-003 |
| tblVehicleEF | LHD2 | 3.0600e-004 | 3.3100e-004 |
| tblVehicleEF | LHD2 | 2.0260e-003 | 2.4740e-003 |
| tblVehicleEF | LHD2 | 0.04        | 0.05        |
| tblVehicleEF | LHD2 | 0.02        | 0.02        |
| tblVehicleEF | LHD2 | 1.2020e-003 | 1.4090e-003 |
| tblVehicleEF | LHD2 | 0.06        | 0.07        |
| tblVehicleEF | LHD2 | 0.09        | 0.12        |
| tblVehicleEF | LHD2 | 0.14        | 0.18        |
| tblVehicleEF | LHD2 | 4.2390e-003 | 4.7550e-003 |
| tblVehicleEF | LHD2 | 4.8130e-003 | 6.4560e-003 |
| tblVehicleEF | LHD2 | 9.6860e-003 | 0.01        |
| tblVehicleEF | LHD2 | 0.13        | 0.14        |
| tblVehicleEF | LHD2 | 0.40        | 0.53        |
| tblVehicleEF | LHD2 | 1.44        | 1.74        |
| tblVehicleEF | LHD2 | 13.72       | 13.70       |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD2 | 622.17      | 639.58      |
| tblVehicleEF | LHD2 | 28.08       | 30.04       |
| tblVehicleEF | LHD2 | 0.10        | 0.11        |
| tblVehicleEF | LHD2 | 0.92        | 1.23        |
| tblVehicleEF | LHD2 | 0.60        | 0.70        |
| tblVehicleEF | LHD2 | 1.2010e-003 | 1.2000e-003 |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 0.01        | 0.01        |
| tblVehicleEF | LHD2 | 4.7800e-004 | 5.7800e-004 |
| tblVehicleEF | LHD2 | 2.6500e-003 | 2.6260e-003 |
| tblVehicleEF | LHD2 | 9.6020e-003 | 0.01        |
| tblVehicleEF | LHD2 | 4.3900e-004 | 5.3200e-004 |
| tblVehicleEF | LHD2 | 1.2850e-003 | 1.6010e-003 |
| tblVehicleEF | LHD2 | 0.05        | 0.06        |
| tblVehicleEF | LHD2 | 0.01        | 0.02        |
| tblVehicleEF | LHD2 | 7.7600e-004 | 9.0400e-004 |
| tblVehicleEF | LHD2 | 0.05        | 0.06        |
| tblVehicleEF | LHD2 | 0.10        | 0.13        |
| tblVehicleEF | LHD2 | 0.13        | 0.17        |
| tblVehicleEF | LHD2 | 6.0640e-003 | 6.2420e-003 |
| tblVehicleEF | LHD2 | 3.0700e-004 | 3.3300e-004 |
| tblVehicleEF | LHD2 | 1.2850e-003 | 1.6010e-003 |
| tblVehicleEF | LHD2 | 0.05        | 0.06        |
| tblVehicleEF | LHD2 | 0.02        | 0.02        |
| tblVehicleEF | LHD2 | 7.7600e-004 | 9.0400e-004 |
| tblVehicleEF | LHD2 | 0.06        | 0.07        |
| tblVehicleEF | LHD2 | 0.10        | 0.13        |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | LHD2 | 0.14        | 0.18        |
| tblVehicleEF | MCY  | 0.50        | 0.49        |
| tblVehicleEF | MCY  | 0.15        | 0.15        |
| tblVehicleEF | MCY  | 19.08       | 19.79       |
| tblVehicleEF | MCY  | 9.63        | 9.59        |
| tblVehicleEF | MCY  | 182.36      | 180.67      |
| tblVehicleEF | MCY  | 45.23       | 46.13       |
| tblVehicleEF | MCY  | 1.13        | 1.13        |
| tblVehicleEF | MCY  | 0.31        | 0.31        |
| tblVehicleEF | MCY  | 2.2250e-003 | 2.0830e-003 |
| tblVehicleEF | MCY  | 3.8410e-003 | 4.0650e-003 |
| tblVehicleEF | MCY  | 2.0810e-003 | 1.9510e-003 |
| tblVehicleEF | MCY  | 3.6200e-003 | 3.8420e-003 |
| tblVehicleEF | MCY  | 1.18        | 1.19        |
| tblVehicleEF | MCY  | 0.69        | 0.72        |
| tblVehicleEF | MCY  | 0.70        | 0.72        |
| tblVehicleEF | MCY  | 2.49        | 2.52        |
| tblVehicleEF | MCY  | 0.63        | 0.66        |
| tblVehicleEF | MCY  | 2.06        | 2.09        |
| tblVehicleEF | MCY  | 2.2100e-003 | 2.2050e-003 |
| tblVehicleEF | MCY  | 6.7000e-004 | 6.8000e-004 |
| tblVehicleEF | MCY  | 1.18        | 1.19        |
| tblVehicleEF | MCY  | 0.69        | 0.72        |
| tblVehicleEF | MCY  | 0.70        | 0.72        |
| tblVehicleEF | MCY  | 3.08        | 3.11        |
| tblVehicleEF | MCY  | 0.63        | 0.66        |
| tblVehicleEF | MCY  | 2.24        | 2.28        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MCY | 0.49        | 0.48        |
| tblVehicleEF | MCY | 0.14        | 0.14        |
| tblVehicleEF | MCY | 18.59       | 19.25       |
| tblVehicleEF | MCY | 8.86        | 8.85        |
| tblVehicleEF | MCY | 182.36      | 180.67      |
| tblVehicleEF | MCY | 45.23       | 46.13       |
| tblVehicleEF | MCY | 0.99        | 0.99        |
| tblVehicleEF | MCY | 0.29        | 0.29        |
| tblVehicleEF | MCY | 2.2250e-003 | 2.0830e-003 |
| tblVehicleEF | MCY | 3.8410e-003 | 4.0650e-003 |
| tblVehicleEF | MCY | 2.0810e-003 | 1.9510e-003 |
| tblVehicleEF | MCY | 3.6200e-003 | 3.8420e-003 |
| tblVehicleEF | MCY | 1.98        | 2.00        |
| tblVehicleEF | MCY | 0.80        | 0.83        |
| tblVehicleEF | MCY | 1.25        | 1.28        |
| tblVehicleEF | MCY | 2.43        | 2.46        |
| tblVehicleEF | MCY | 0.59        | 0.63        |
| tblVehicleEF | MCY | 1.84        | 1.86        |
| tblVehicleEF | MCY | 2.2010e-003 | 2.1950e-003 |
| tblVehicleEF | MCY | 6.5100e-004 | 6.6100e-004 |
| tblVehicleEF | MCY | 1.98        | 2.00        |
| tblVehicleEF | MCY | 0.80        | 0.83        |
| tblVehicleEF | MCY | 1.25        | 1.28        |
| tblVehicleEF | MCY | 3.02        | 3.03        |
| tblVehicleEF | MCY | 0.59        | 0.63        |
| tblVehicleEF | MCY | 2.00        | 2.03        |
| tblVehicleEF | MCY | 0.51        | 0.49        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MCY | 0.15        | 0.16        |
| tblVehicleEF | MCY | 19.10       | 19.80       |
| tblVehicleEF | MCY | 9.72        | 9.68        |
| tblVehicleEF | MCY | 182.36      | 180.67      |
| tblVehicleEF | MCY | 45.23       | 46.13       |
| tblVehicleEF | MCY | 1.10        | 1.11        |
| tblVehicleEF | MCY | 0.31        | 0.31        |
| tblVehicleEF | MCY | 2.2250e-003 | 2.0830e-003 |
| tblVehicleEF | MCY | 3.8410e-003 | 4.0650e-003 |
| tblVehicleEF | MCY | 2.0810e-003 | 1.9510e-003 |
| tblVehicleEF | MCY | 3.6200e-003 | 3.8420e-003 |
| tblVehicleEF | MCY | 1.26        | 1.28        |
| tblVehicleEF | MCY | 0.89        | 0.93        |
| tblVehicleEF | MCY | 0.67        | 0.68        |
| tblVehicleEF | MCY | 2.49        | 2.53        |
| tblVehicleEF | MCY | 0.72        | 0.76        |
| tblVehicleEF | MCY | 2.10        | 2.13        |
| tblVehicleEF | MCY | 2.2110e-003 | 2.2060e-003 |
| tblVehicleEF | MCY | 6.7300e-004 | 6.8200e-004 |
| tblVehicleEF | MCY | 1.26        | 1.28        |
| tblVehicleEF | MCY | 0.89        | 0.93        |
| tblVehicleEF | MCY | 0.67        | 0.68        |
| tblVehicleEF | MCY | 3.09        | 3.12        |
| tblVehicleEF | MCY | 0.72        | 0.76        |
| tblVehicleEF | MCY | 2.28        | 2.31        |
| tblVehicleEF | MDV | 0.01        | 0.02        |
| tblVehicleEF | MDV | 0.02        | 0.02        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MDV | 1.48        | 1.80        |
| tblVehicleEF | MDV | 2.84        | 3.45        |
| tblVehicleEF | MDV | 515.44      | 542.45      |
| tblVehicleEF | MDV | 107.59      | 112.95      |
| tblVehicleEF | MDV | 0.16        | 0.21        |
| tblVehicleEF | MDV | 0.26        | 0.33        |
| tblVehicleEF | MDV | 2.1880e-003 | 2.2450e-003 |
| tblVehicleEF | MDV | 2.5060e-003 | 2.6000e-003 |
| tblVehicleEF | MDV | 2.0180e-003 | 2.0720e-003 |
| tblVehicleEF | MDV | 2.3060e-003 | 2.3950e-003 |
| tblVehicleEF | MDV | 0.08        | 0.08        |
| tblVehicleEF | MDV | 0.17        | 0.18        |
| tblVehicleEF | MDV | 0.08        | 0.08        |
| tblVehicleEF | MDV | 0.04        | 0.05        |
| tblVehicleEF | MDV | 0.10        | 0.10        |
| tblVehicleEF | MDV | 0.22        | 0.28        |
| tblVehicleEF | MDV | 5.1660e-003 | 5.4410e-003 |
| tblVehicleEF | MDV | 1.1260e-003 | 1.1910e-003 |
| tblVehicleEF | MDV | 0.08        | 0.08        |
| tblVehicleEF | MDV | 0.17        | 0.18        |
| tblVehicleEF | MDV | 0.08        | 0.08        |
| tblVehicleEF | MDV | 0.05        | 0.07        |
| tblVehicleEF | MDV | 0.10        | 0.10        |
| tblVehicleEF | MDV | 0.24        | 0.30        |
| tblVehicleEF | MDV | 0.01        | 0.02        |
| tblVehicleEF | MDV | 0.01        | 0.02        |
| tblVehicleEF | MDV | 1.63        | 1.97        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MDV | 2.45        | 2.97        |
| tblVehicleEF | MDV | 541.84      | 570.27      |
| tblVehicleEF | MDV | 107.59      | 112.95      |
| tblVehicleEF | MDV | 0.14        | 0.18        |
| tblVehicleEF | MDV | 0.24        | 0.31        |
| tblVehicleEF | MDV | 2.1880e-003 | 2.2450e-003 |
| tblVehicleEF | MDV | 2.5060e-003 | 2.6000e-003 |
| tblVehicleEF | MDV | 2.0180e-003 | 2.0720e-003 |
| tblVehicleEF | MDV | 2.3060e-003 | 2.3950e-003 |
| tblVehicleEF | MDV | 0.13        | 0.13        |
| tblVehicleEF | MDV | 0.18        | 0.19        |
| tblVehicleEF | MDV | 0.11        | 0.12        |
| tblVehicleEF | MDV | 0.04        | 0.05        |
| tblVehicleEF | MDV | 0.09        | 0.09        |
| tblVehicleEF | MDV | 0.19        | 0.24        |
| tblVehicleEF | MDV | 5.4320e-003 | 5.7220e-003 |
| tblVehicleEF | MDV | 1.1190e-003 | 1.1820e-003 |
| tblVehicleEF | MDV | 0.13        | 0.13        |
| tblVehicleEF | MDV | 0.18        | 0.19        |
| tblVehicleEF | MDV | 0.11        | 0.12        |
| tblVehicleEF | MDV | 0.06        | 0.07        |
| tblVehicleEF | MDV | 0.09        | 0.09        |
| tblVehicleEF | MDV | 0.21        | 0.27        |
| tblVehicleEF | MDV | 0.01        | 0.02        |
| tblVehicleEF | MDV | 0.02        | 0.02        |
| tblVehicleEF | MDV | 1.43        | 1.74        |
| tblVehicleEF | MDV | 2.92        | 3.54        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MDV | 506.79      | 533.35      |
| tblVehicleEF | MDV | 107.59      | 112.95      |
| tblVehicleEF | MDV | 0.16        | 0.20        |
| tblVehicleEF | MDV | 0.26        | 0.33        |
| tblVehicleEF | MDV | 2.1880e-003 | 2.2450e-003 |
| tblVehicleEF | MDV | 2.5060e-003 | 2.6000e-003 |
| tblVehicleEF | MDV | 2.0180e-003 | 2.0720e-003 |
| tblVehicleEF | MDV | 2.3060e-003 | 2.3950e-003 |
| tblVehicleEF | MDV | 0.07        | 0.08        |
| tblVehicleEF | MDV | 0.18        | 0.20        |
| tblVehicleEF | MDV | 0.07        | 0.07        |
| tblVehicleEF | MDV | 0.04        | 0.05        |
| tblVehicleEF | MDV | 0.11        | 0.12        |
| tblVehicleEF | MDV | 0.23        | 0.28        |
| tblVehicleEF | MDV | 5.0790e-003 | 5.3500e-003 |
| tblVehicleEF | MDV | 1.1270e-003 | 1.1920e-003 |
| tblVehicleEF | MDV | 0.07        | 0.08        |
| tblVehicleEF | MDV | 0.18        | 0.20        |
| tblVehicleEF | MDV | 0.07        | 0.07        |
| tblVehicleEF | MDV | 0.05        | 0.07        |
| tblVehicleEF | MDV | 0.11        | 0.12        |
| tblVehicleEF | MDV | 0.25        | 0.31        |
| tblVehicleEF | MH  | 0.03        | 0.04        |
| tblVehicleEF | MH  | 0.03        | 0.03        |
| tblVehicleEF | MH  | 2.61        | 3.92        |
| tblVehicleEF | MH  | 6.11        | 7.32        |
| tblVehicleEF | MH  | 1,106.44    | 1,112.23    |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |    |             |             |
|--------------|----|-------------|-------------|
| tblVehicleEF | MH | 59.52       | 63.76       |
| tblVehicleEF | MH | 1.32        | 1.51        |
| tblVehicleEF | MH | 0.84        | 0.92        |
| tblVehicleEF | MH | 0.01        | 0.01        |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 1.1510e-003 | 1.7360e-003 |
| tblVehicleEF | MH | 3.2170e-003 | 3.2130e-003 |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 1.0590e-003 | 1.6140e-003 |
| tblVehicleEF | MH | 1.15        | 1.35        |
| tblVehicleEF | MH | 0.08        | 0.09        |
| tblVehicleEF | MH | 0.46        | 0.53        |
| tblVehicleEF | MH | 0.10        | 0.14        |
| tblVehicleEF | MH | 0.02        | 0.02        |
| tblVehicleEF | MH | 0.35        | 0.46        |
| tblVehicleEF | MH | 0.01        | 0.01        |
| tblVehicleEF | MH | 7.0200e-004 | 7.6700e-004 |
| tblVehicleEF | MH | 1.15        | 1.35        |
| tblVehicleEF | MH | 0.08        | 0.09        |
| tblVehicleEF | MH | 0.46        | 0.53        |
| tblVehicleEF | MH | 0.14        | 0.19        |
| tblVehicleEF | MH | 0.02        | 0.02        |
| tblVehicleEF | MH | 0.38        | 0.50        |
| tblVehicleEF | MH | 0.03        | 0.04        |
| tblVehicleEF | MH | 0.02        | 0.03        |
| tblVehicleEF | MH | 2.69        | 3.97        |
| tblVehicleEF | MH | 5.74        | 6.92        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |    |             |             |
|--------------|----|-------------|-------------|
| tblVehicleEF | MH | 1,106.44    | 1,112.23    |
| tblVehicleEF | MH | 59.52       | 63.76       |
| tblVehicleEF | MH | 1.22        | 1.39        |
| tblVehicleEF | MH | 0.80        | 0.88        |
| tblVehicleEF | MH | 0.01        | 0.01        |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 1.1510e-003 | 1.7360e-003 |
| tblVehicleEF | MH | 3.2170e-003 | 3.2130e-003 |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 1.0590e-003 | 1.6140e-003 |
| tblVehicleEF | MH | 1.78        | 2.10        |
| tblVehicleEF | MH | 0.08        | 0.09        |
| tblVehicleEF | MH | 0.72        | 0.84        |
| tblVehicleEF | MH | 0.10        | 0.14        |
| tblVehicleEF | MH | 0.02        | 0.02        |
| tblVehicleEF | MH | 0.34        | 0.44        |
| tblVehicleEF | MH | 0.01        | 0.01        |
| tblVehicleEF | MH | 6.9500e-004 | 7.5900e-004 |
| tblVehicleEF | MH | 1.78        | 2.10        |
| tblVehicleEF | MH | 0.08        | 0.09        |
| tblVehicleEF | MH | 0.72        | 0.84        |
| tblVehicleEF | MH | 0.14        | 0.19        |
| tblVehicleEF | MH | 0.02        | 0.02        |
| tblVehicleEF | MH | 0.37        | 0.48        |
| tblVehicleEF | MH | 0.03        | 0.04        |
| tblVehicleEF | MH | 0.03        | 0.03        |
| tblVehicleEF | MH | 2.59        | 3.90        |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MH  | 6.16        | 7.37        |
| tblVehicleEF | MH  | 1,106.44    | 1,112.23    |
| tblVehicleEF | MH  | 59.52       | 63.76       |
| tblVehicleEF | MH  | 1.30        | 1.48        |
| tblVehicleEF | MH  | 0.84        | 0.92        |
| tblVehicleEF | MH  | 0.01        | 0.01        |
| tblVehicleEF | MH  | 0.03        | 0.03        |
| tblVehicleEF | MH  | 1.1510e-003 | 1.7360e-003 |
| tblVehicleEF | MH  | 3.2170e-003 | 3.2130e-003 |
| tblVehicleEF | MH  | 0.03        | 0.03        |
| tblVehicleEF | MH  | 1.0590e-003 | 1.6140e-003 |
| tblVehicleEF | MH  | 1.27        | 1.51        |
| tblVehicleEF | MH  | 0.09        | 0.11        |
| tblVehicleEF | MH  | 0.47        | 0.55        |
| tblVehicleEF | MH  | 0.10        | 0.14        |
| tblVehicleEF | MH  | 0.02        | 0.02        |
| tblVehicleEF | MH  | 0.35        | 0.46        |
| tblVehicleEF | MH  | 0.01        | 0.01        |
| tblVehicleEF | MH  | 7.0300e-004 | 7.6700e-004 |
| tblVehicleEF | MH  | 1.27        | 1.51        |
| tblVehicleEF | MH  | 0.09        | 0.11        |
| tblVehicleEF | MH  | 0.47        | 0.55        |
| tblVehicleEF | MH  | 0.14        | 0.19        |
| tblVehicleEF | MH  | 0.02        | 0.02        |
| tblVehicleEF | MH  | 0.39        | 0.50        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 4.8740e-003 | 0.01        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.37        | 0.48        |
| tblVehicleEF | MHD | 0.37        | 0.73        |
| tblVehicleEF | MHD | 6.44        | 7.70        |
| tblVehicleEF | MHD | 139.10      | 141.46      |
| tblVehicleEF | MHD | 1,139.95    | 1,145.30    |
| tblVehicleEF | MHD | 61.46       | 63.16       |
| tblVehicleEF | MHD | 0.55        | 1.08        |
| tblVehicleEF | MHD | 1.18        | 2.52        |
| tblVehicleEF | MHD | 10.45       | 10.44       |
| tblVehicleEF | MHD | 3.6300e-004 | 4.2030e-003 |
| tblVehicleEF | MHD | 5.7190e-003 | 0.07        |
| tblVehicleEF | MHD | 8.4000e-004 | 9.6900e-004 |
| tblVehicleEF | MHD | 3.4700e-004 | 4.0210e-003 |
| tblVehicleEF | MHD | 5.4680e-003 | 0.07        |
| tblVehicleEF | MHD | 7.7200e-004 | 8.9200e-004 |
| tblVehicleEF | MHD | 1.2630e-003 | 1.4760e-003 |
| tblVehicleEF | MHD | 0.05        | 0.05        |
| tblVehicleEF | MHD | 0.03        | 0.04        |
| tblVehicleEF | MHD | 7.7200e-004 | 8.6400e-004 |
| tblVehicleEF | MHD | 0.04        | 0.13        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 0.40        | 0.47        |
| tblVehicleEF | MHD | 1.3390e-003 | 1.3620e-003 |
| tblVehicleEF | MHD | 0.01        | 0.01        |
| tblVehicleEF | MHD | 7.2800e-004 | 7.6700e-004 |
| tblVehicleEF | MHD | 1.2630e-003 | 1.4760e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MHD | 0.05        | 0.05        |
| tblVehicleEF | MHD | 0.04        | 0.05        |
| tblVehicleEF | MHD | 7.7200e-004 | 8.6400e-004 |
| tblVehicleEF | MHD | 0.05        | 0.15        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 0.43        | 0.52        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 4.9460e-003 | 0.01        |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.27        | 0.35        |
| tblVehicleEF | MHD | 0.37        | 0.74        |
| tblVehicleEF | MHD | 6.12        | 7.32        |
| tblVehicleEF | MHD | 147.32      | 149.83      |
| tblVehicleEF | MHD | 1,139.95    | 1,145.30    |
| tblVehicleEF | MHD | 61.46       | 63.16       |
| tblVehicleEF | MHD | 0.57        | 1.11        |
| tblVehicleEF | MHD | 1.11        | 2.37        |
| tblVehicleEF | MHD | 10.41       | 10.39       |
| tblVehicleEF | MHD | 3.0600e-004 | 3.5430e-003 |
| tblVehicleEF | MHD | 5.7190e-003 | 0.07        |
| tblVehicleEF | MHD | 8.4000e-004 | 9.6900e-004 |
| tblVehicleEF | MHD | 2.9300e-004 | 3.3900e-003 |
| tblVehicleEF | MHD | 5.4680e-003 | 0.07        |
| tblVehicleEF | MHD | 7.7200e-004 | 8.9200e-004 |
| tblVehicleEF | MHD | 1.9740e-003 | 2.3150e-003 |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.02        | 0.03        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |     |             |             |
|--------------|-----|-------------|-------------|
| tblVehicleEF | MHD | 1.1660e-003 | 1.3270e-003 |
| tblVehicleEF | MHD | 0.04        | 0.13        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 0.38        | 0.45        |
| tblVehicleEF | MHD | 1.4170e-003 | 1.4410e-003 |
| tblVehicleEF | MHD | 0.01        | 0.01        |
| tblVehicleEF | MHD | 7.2200e-004 | 7.6000e-004 |
| tblVehicleEF | MHD | 1.9740e-003 | 2.3150e-003 |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.03        | 0.05        |
| tblVehicleEF | MHD | 1.1660e-003 | 1.3270e-003 |
| tblVehicleEF | MHD | 0.05        | 0.16        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 0.42        | 0.50        |
| tblVehicleEF | MHD | 0.02        | 0.02        |
| tblVehicleEF | MHD | 4.8520e-003 | 0.01        |
| tblVehicleEF | MHD | 0.05        | 0.06        |
| tblVehicleEF | MHD | 0.51        | 0.67        |
| tblVehicleEF | MHD | 0.37        | 0.73        |
| tblVehicleEF | MHD | 6.50        | 7.77        |
| tblVehicleEF | MHD | 127.72      | 129.89      |
| tblVehicleEF | MHD | 1,139.95    | 1,145.30    |
| tblVehicleEF | MHD | 61.46       | 63.16       |
| tblVehicleEF | MHD | 0.53        | 1.03        |
| tblVehicleEF | MHD | 1.16        | 2.47        |
| tblVehicleEF | MHD | 10.46       | 10.45       |
| tblVehicleEF | MHD | 4.4200e-004 | 5.1140e-003 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | MHD  | 5.7190e-003 | 0.07        |
| tblVehicleEF | MHD  | 8.4000e-004 | 9.6900e-004 |
| tblVehicleEF | MHD  | 4.2300e-004 | 4.8930e-003 |
| tblVehicleEF | MHD  | 5.4680e-003 | 0.07        |
| tblVehicleEF | MHD  | 7.7200e-004 | 8.9200e-004 |
| tblVehicleEF | MHD  | 1.2610e-003 | 1.5100e-003 |
| tblVehicleEF | MHD  | 0.05        | 0.06        |
| tblVehicleEF | MHD  | 0.03        | 0.04        |
| tblVehicleEF | MHD  | 7.4700e-004 | 8.4600e-004 |
| tblVehicleEF | MHD  | 0.04        | 0.13        |
| tblVehicleEF | MHD  | 0.02        | 0.03        |
| tblVehicleEF | MHD  | 0.40        | 0.48        |
| tblVehicleEF | MHD  | 1.2320e-003 | 1.2530e-003 |
| tblVehicleEF | MHD  | 0.01        | 0.01        |
| tblVehicleEF | MHD  | 7.2900e-004 | 7.6800e-004 |
| tblVehicleEF | MHD  | 1.2610e-003 | 1.5100e-003 |
| tblVehicleEF | MHD  | 0.05        | 0.06        |
| tblVehicleEF | MHD  | 0.04        | 0.05        |
| tblVehicleEF | MHD  | 7.4700e-004 | 8.4600e-004 |
| tblVehicleEF | MHD  | 0.05        | 0.15        |
| tblVehicleEF | MHD  | 0.02        | 0.03        |
| tblVehicleEF | MHD  | 0.44        | 0.52        |
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 8.7600e-003 | 0.01        |
| tblVehicleEF | OBUS | 0.03        | 0.03        |
| tblVehicleEF | OBUS | 0.28        | 0.29        |
| tblVehicleEF | OBUS | 0.59        | 0.78        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | OBUS | 5.80        | 6.56        |
| tblVehicleEF | OBUS | 101.23      | 99.62       |
| tblVehicleEF | OBUS | 1,241.90    | 1,254.62    |
| tblVehicleEF | OBUS | 68.87       | 70.18       |
| tblVehicleEF | OBUS | 0.52        | 0.62        |
| tblVehicleEF | OBUS | 1.61        | 2.16        |
| tblVehicleEF | OBUS | 2.46        | 2.53        |
| tblVehicleEF | OBUS | 1.8000e-004 | 3.3800e-004 |
| tblVehicleEF | OBUS | 8.1890e-003 | 0.01        |
| tblVehicleEF | OBUS | 8.1000e-004 | 8.2900e-004 |
| tblVehicleEF | OBUS | 1.7300e-004 | 3.2300e-004 |
| tblVehicleEF | OBUS | 7.8190e-003 | 0.01        |
| tblVehicleEF | OBUS | 7.4400e-004 | 7.6500e-004 |
| tblVehicleEF | OBUS | 1.5730e-003 | 1.6610e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 8.0200e-004 | 8.2500e-004 |
| tblVehicleEF | OBUS | 0.06        | 0.07        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 0.36        | 0.42        |
| tblVehicleEF | OBUS | 9.7800e-004 | 9.6300e-004 |
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 7.9100e-004 | 8.1700e-004 |
| tblVehicleEF | OBUS | 1.5730e-003 | 1.6610e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.05        | 0.06        |
| tblVehicleEF | OBUS | 8.0200e-004 | 8.2500e-004 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | OBUS | 0.08        | 0.09        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 0.40        | 0.45        |
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 8.9130e-003 | 0.01        |
| tblVehicleEF | OBUS | 0.03        | 0.03        |
| tblVehicleEF | OBUS | 0.27        | 0.27        |
| tblVehicleEF | OBUS | 0.60        | 0.79        |
| tblVehicleEF | OBUS | 5.48        | 6.20        |
| tblVehicleEF | OBUS | 106.24      | 104.52      |
| tblVehicleEF | OBUS | 1,241.90    | 1,254.62    |
| tblVehicleEF | OBUS | 68.87       | 70.18       |
| tblVehicleEF | OBUS | 0.53        | 0.64        |
| tblVehicleEF | OBUS | 1.52        | 2.03        |
| tblVehicleEF | OBUS | 2.42        | 2.48        |
| tblVehicleEF | OBUS | 1.5200e-004 | 2.8500e-004 |
| tblVehicleEF | OBUS | 8.1890e-003 | 0.01        |
| tblVehicleEF | OBUS | 8.1000e-004 | 8.2900e-004 |
| tblVehicleEF | OBUS | 1.4600e-004 | 2.7300e-004 |
| tblVehicleEF | OBUS | 7.8190e-003 | 0.01        |
| tblVehicleEF | OBUS | 7.4400e-004 | 7.6500e-004 |
| tblVehicleEF | OBUS | 2.3950e-003 | 2.5350e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 1.2060e-003 | 1.2540e-003 |
| tblVehicleEF | OBUS | 0.06        | 0.07        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | OBUS | 0.35        | 0.40        |
| tblVehicleEF | OBUS | 1.0260e-003 | 1.0100e-003 |
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 7.8500e-004 | 8.1100e-004 |
| tblVehicleEF | OBUS | 2.3950e-003 | 2.5350e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.05        | 0.06        |
| tblVehicleEF | OBUS | 1.2060e-003 | 1.2540e-003 |
| tblVehicleEF | OBUS | 0.08        | 0.09        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 0.38        | 0.44        |
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 8.7200e-003 | 0.01        |
| tblVehicleEF | OBUS | 0.03        | 0.03        |
| tblVehicleEF | OBUS | 0.30        | 0.31        |
| tblVehicleEF | OBUS | 0.59        | 0.78        |
| tblVehicleEF | OBUS | 5.86        | 6.62        |
| tblVehicleEF | OBUS | 94.31       | 92.85       |
| tblVehicleEF | OBUS | 1,241.90    | 1,254.62    |
| tblVehicleEF | OBUS | 68.87       | 70.18       |
| tblVehicleEF | OBUS | 0.49        | 0.59        |
| tblVehicleEF | OBUS | 1.59        | 2.12        |
| tblVehicleEF | OBUS | 2.47        | 2.54        |
| tblVehicleEF | OBUS | 2.2000e-004 | 4.1100e-004 |
| tblVehicleEF | OBUS | 8.1890e-003 | 0.01        |
| tblVehicleEF | OBUS | 8.1000e-004 | 8.2900e-004 |
| tblVehicleEF | OBUS | 2.1000e-004 | 3.9300e-004 |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | OBUS | 7.8190e-003 | 0.01        |
| tblVehicleEF | OBUS | 7.4400e-004 | 7.6500e-004 |
| tblVehicleEF | OBUS | 1.5900e-003 | 1.7090e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.04        | 0.04        |
| tblVehicleEF | OBUS | 7.8500e-004 | 8.1300e-004 |
| tblVehicleEF | OBUS | 0.06        | 0.07        |
| tblVehicleEF | OBUS | 0.04        | 0.05        |
| tblVehicleEF | OBUS | 0.37        | 0.42        |
| tblVehicleEF | OBUS | 9.1200e-004 | 8.9800e-004 |
| tblVehicleEF | OBUS | 0.01        | 0.01        |
| tblVehicleEF | OBUS | 7.9200e-004 | 8.1800e-004 |
| tblVehicleEF | OBUS | 1.5900e-003 | 1.7090e-003 |
| tblVehicleEF | OBUS | 0.02        | 0.02        |
| tblVehicleEF | OBUS | 0.06        | 0.06        |
| tblVehicleEF | OBUS | 7.8500e-004 | 8.1300e-004 |
| tblVehicleEF | OBUS | 0.08        | 0.09        |
| tblVehicleEF | OBUS | 0.04        | 0.05        |
| tblVehicleEF | OBUS | 0.40        | 0.46        |
| tblVehicleEF | SBUS | 0.86        | 0.88        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.07        | 0.08        |
| tblVehicleEF | SBUS | 7.86        | 7.58        |
| tblVehicleEF | SBUS | 0.81        | 0.94        |
| tblVehicleEF | SBUS | 7.55        | 7.88        |
| tblVehicleEF | SBUS | 1,146.60    | 1,175.17    |
| tblVehicleEF | SBUS | 1,098.65    | 1,116.42    |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | SBUS | 52.57       | 49.91       |
| tblVehicleEF | SBUS | 10.06       | 11.44       |
| tblVehicleEF | SBUS | 4.64        | 5.41        |
| tblVehicleEF | SBUS | 12.63       | 13.16       |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 7.2300e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 2.6920e-003 | 2.7100e-003 |
| tblVehicleEF | SBUS | 0.02        | 0.03        |
| tblVehicleEF | SBUS | 6.6400e-004 | 6.3100e-004 |
| tblVehicleEF | SBUS | 3.6480e-003 | 3.8950e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 0.94        | 0.92        |
| tblVehicleEF | SBUS | 1.8170e-003 | 1.7890e-003 |
| tblVehicleEF | SBUS | 0.11        | 0.13        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.40        | 0.42        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 6.5600e-004 | 6.3600e-004 |
| tblVehicleEF | SBUS | 3.6480e-003 | 3.8950e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 1.36        | 1.32        |
| tblVehicleEF | SBUS | 1.8170e-003 | 1.7890e-003 |
| tblVehicleEF | SBUS | 0.14        | 0.15        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.44        | 0.46        |
| tblVehicleEF | SBUS | 0.86        | 0.88        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.06        | 0.07        |
| tblVehicleEF | SBUS | 7.73        | 7.44        |
| tblVehicleEF | SBUS | 0.82        | 0.95        |
| tblVehicleEF | SBUS | 6.01        | 6.27        |
| tblVehicleEF | SBUS | 1,199.32    | 1,230.37    |
| tblVehicleEF | SBUS | 1,098.65    | 1,116.42    |
| tblVehicleEF | SBUS | 52.57       | 49.91       |
| tblVehicleEF | SBUS | 10.38       | 11.80       |
| tblVehicleEF | SBUS | 4.37        | 5.10        |
| tblVehicleEF | SBUS | 12.59       | 13.13       |
| tblVehicleEF | SBUS | 9.1580e-003 | 0.01        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 7.2300e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 8.7620e-003 | 0.01        |
| tblVehicleEF | SBUS | 2.6920e-003 | 2.7100e-003 |
| tblVehicleEF | SBUS | 0.02        | 0.03        |
| tblVehicleEF | SBUS | 6.6400e-004 | 6.3100e-004 |
| tblVehicleEF | SBUS | 5.6470e-003 | 5.9980e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 0.94        | 0.91        |
| tblVehicleEF | SBUS | 2.8110e-003 | 2.7960e-003 |
| tblVehicleEF | SBUS | 0.11        | 0.13        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.35        | 0.37        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 6.3100e-004 | 6.0900e-004 |
| tblVehicleEF | SBUS | 5.6470e-003 | 5.9980e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 1.36        | 1.32        |
| tblVehicleEF | SBUS | 2.8110e-003 | 2.7960e-003 |
| tblVehicleEF | SBUS | 0.14        | 0.15        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.39        | 0.40        |
| tblVehicleEF | SBUS | 0.86        | 0.88        |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.07        | 0.08        |
| tblVehicleEF | SBUS | 8.03        | 7.78        |
| tblVehicleEF | SBUS | 0.81        | 0.93        |
| tblVehicleEF | SBUS | 7.81        | 8.15        |
| tblVehicleEF | SBUS | 1,073.80    | 1,098.95    |
| tblVehicleEF | SBUS | 1,098.65    | 1,116.42    |
| tblVehicleEF | SBUS | 52.57       | 49.91       |
| tblVehicleEF | SBUS | 9.61        | 10.93       |
| tblVehicleEF | SBUS | 4.57        | 5.33        |
| tblVehicleEF | SBUS | 12.63       | 13.17       |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.03        | 0.03        |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | SBUS | 7.2300e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 0.01        | 0.02        |
| tblVehicleEF | SBUS | 2.6920e-003 | 2.7100e-003 |
| tblVehicleEF | SBUS | 0.02        | 0.03        |
| tblVehicleEF | SBUS | 6.6400e-004 | 6.3100e-004 |
| tblVehicleEF | SBUS | 3.6250e-003 | 4.0560e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 0.95        | 0.92        |
| tblVehicleEF | SBUS | 0.11        | 0.13        |
| tblVehicleEF | SBUS | 0.02        | 0.02        |
| tblVehicleEF | SBUS | 0.41        | 0.43        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 0.01        | 0.01        |
| tblVehicleEF | SBUS | 6.6100e-004 | 6.4000e-004 |
| tblVehicleEF | SBUS | 3.6250e-003 | 4.0560e-003 |
| tblVehicleEF | SBUS | 0.03        | 0.03        |
| tblVehicleEF | SBUS | 1.37        | 1.32        |
| tblVehicleEF | SBUS | 0.14        | 0.15        |
| tblVehicleEF | SBUS | 0.02        | 0.02        |
| tblVehicleEF | SBUS | 0.45        | 0.47        |
| tblVehicleEF | UBUS | 2.51        | 2.82        |
| tblVehicleEF | UBUS | 0.06        | 0.06        |
| tblVehicleEF | UBUS | 11.01       | 12.54       |
| tblVehicleEF | UBUS | 10.46       | 10.71       |
| tblVehicleEF | UBUS | 1,940.83    | 1,986.82    |
| tblVehicleEF | UBUS | 106.77      | 99.14       |
| tblVehicleEF | UBUS | 9.09        | 10.84       |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | UBUS | 14.93       | 15.55       |
| tblVehicleEF | UBUS | 0.59        | 0.61        |
| tblVehicleEF | UBUS | 0.11        | 0.14        |
| tblVehicleEF | UBUS | 1.1160e-003 | 1.1020e-003 |
| tblVehicleEF | UBUS | 0.25        | 0.26        |
| tblVehicleEF | UBUS | 0.11        | 0.13        |
| tblVehicleEF | UBUS | 1.0260e-003 | 1.0160e-003 |
| tblVehicleEF | UBUS | 5.1810e-003 | 5.5290e-003 |
| tblVehicleEF | UBUS | 0.08        | 0.09        |
| tblVehicleEF | UBUS | 2.8830e-003 | 2.9760e-003 |
| tblVehicleEF | UBUS | 0.80        | 0.94        |
| tblVehicleEF | UBUS | 0.02        | 0.02        |
| tblVehicleEF | UBUS | 0.79        | 0.81        |
| tblVehicleEF | UBUS | 9.6900e-003 | 0.01        |
| tblVehicleEF | UBUS | 1.2560e-003 | 1.1840e-003 |
| tblVehicleEF | UBUS | 5.1810e-003 | 5.5290e-003 |
| tblVehicleEF | UBUS | 0.08        | 0.09        |
| tblVehicleEF | UBUS | 2.8830e-003 | 2.9760e-003 |
| tblVehicleEF | UBUS | 3.40        | 3.87        |
| tblVehicleEF | UBUS | 0.02        | 0.02        |
| tblVehicleEF | UBUS | 0.87        | 0.88        |
| tblVehicleEF | UBUS | 2.52        | 2.82        |
| tblVehicleEF | UBUS | 0.05        | 0.05        |
| tblVehicleEF | UBUS | 11.06       | 12.61       |
| tblVehicleEF | UBUS | 9.07        | 9.31        |
| tblVehicleEF | UBUS | 1,940.83    | 1,986.82    |
| tblVehicleEF | UBUS | 106.77      | 99.14       |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | UBUS | 8.56        | 10.21       |
| tblVehicleEF | UBUS | 14.87       | 15.49       |
| tblVehicleEF | UBUS | 0.59        | 0.61        |
| tblVehicleEF | UBUS | 0.11        | 0.14        |
| tblVehicleEF | UBUS | 1.1160e-003 | 1.1020e-003 |
| tblVehicleEF | UBUS | 0.25        | 0.26        |
| tblVehicleEF | UBUS | 0.11        | 0.13        |
| tblVehicleEF | UBUS | 1.0260e-003 | 1.0160e-003 |
| tblVehicleEF | UBUS | 7.7250e-003 | 8.3230e-003 |
| tblVehicleEF | UBUS | 0.09        | 0.09        |
| tblVehicleEF | UBUS | 4.3230e-003 | 4.5310e-003 |
| tblVehicleEF | UBUS | 0.81        | 0.95        |
| tblVehicleEF | UBUS | 0.02        | 0.02        |
| tblVehicleEF | UBUS | 0.73        | 0.74        |
| tblVehicleEF | UBUS | 9.6910e-003 | 0.01        |
| tblVehicleEF | UBUS | 1.2320e-003 | 1.1600e-003 |
| tblVehicleEF | UBUS | 7.7250e-003 | 8.3230e-003 |
| tblVehicleEF | UBUS | 0.09        | 0.09        |
| tblVehicleEF | UBUS | 4.3230e-003 | 4.5310e-003 |
| tblVehicleEF | UBUS | 3.42        | 3.88        |
| tblVehicleEF | UBUS | 0.02        | 0.02        |
| tblVehicleEF | UBUS | 0.80        | 0.81        |
| tblVehicleEF | UBUS | 2.51        | 2.82        |
| tblVehicleEF | UBUS | 0.06        | 0.06        |
| tblVehicleEF | UBUS | 11.00       | 12.53       |
| tblVehicleEF | UBUS | 10.67       | 10.92       |
| tblVehicleEF | UBUS | 1,940.83    | 1,986.82    |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|              |      |             |             |
|--------------|------|-------------|-------------|
| tblVehicleEF | UBUS | 106.77      | 99.14       |
| tblVehicleEF | UBUS | 8.92        | 10.64       |
| tblVehicleEF | UBUS | 14.95       | 15.56       |
| tblVehicleEF | UBUS | 0.59        | 0.61        |
| tblVehicleEF | UBUS | 0.11        | 0.14        |
| tblVehicleEF | UBUS | 1.1160e-003 | 1.1020e-003 |
| tblVehicleEF | UBUS | 0.25        | 0.26        |
| tblVehicleEF | UBUS | 0.11        | 0.13        |
| tblVehicleEF | UBUS | 1.0260e-003 | 1.0160e-003 |
| tblVehicleEF | UBUS | 5.7050e-003 | 6.0970e-003 |
| tblVehicleEF | UBUS | 0.10        | 0.11        |
| tblVehicleEF | UBUS | 2.9930e-003 | 3.0990e-003 |
| tblVehicleEF | UBUS | 0.80        | 0.94        |
| tblVehicleEF | UBUS | 0.03        | 0.03        |
| tblVehicleEF | UBUS | 0.80        | 0.82        |
| tblVehicleEF | UBUS | 9.6890e-003 | 0.01        |
| tblVehicleEF | UBUS | 1.2600e-003 | 1.1880e-003 |
| tblVehicleEF | UBUS | 5.7050e-003 | 6.0970e-003 |
| tblVehicleEF | UBUS | 0.10        | 0.11        |
| tblVehicleEF | UBUS | 2.9930e-003 | 3.0990e-003 |
| tblVehicleEF | UBUS | 3.40        | 3.87        |
| tblVehicleEF | UBUS | 0.03        | 0.03        |
| tblVehicleEF | UBUS | 0.88        | 0.90        |

## 2.0 Emissions Summary

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## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**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   |                |                |        |        |                |
| 2019    | 6.7353 | 66.4384 | 47.6120 | 0.0830 | 11.3904       | 2.9445       | 14.3349    | 6.2217         | 2.7394        | 8.9610      | 0.0000   | 8,617.192<br>6 | 8,617.192<br>6 | 1.9032 | 0.0000 | 8,664.772<br>3 |
| Maximum | 6.7353 | 66.4384 | 47.6120 | 0.0830 | 11.3904       | 2.9445       | 14.3349    | 6.2217         | 2.7394        | 8.9610      | 0.0000   | 8,617.192<br>6 | 8,617.192<br>6 | 1.9032 | 0.0000 | 8,664.772<br>3 |

**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   |                |                |        |        |                |
| 2019    | 6.4813 | 62.6568 | 50.3153 | 0.0830 | 11.3904       | 2.8206       | 14.2110    | 6.2217         | 2.6270        | 8.8486      | 0.0000   | 8,617.192<br>6 | 8,617.192<br>6 | 1.9032 | 0.0000 | 8,664.772<br>3 |
| Maximum | 6.4813 | 62.6568 | 50.3153 | 0.0830 | 11.3904       | 2.8206       | 14.2110    | 6.2217         | 2.6270        | 8.8486      | 0.0000   | 8,617.192<br>6 | 8,617.192<br>6 | 1.9032 | 0.0000 | 8,664.772<br>3 |

|                   | 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 |
|-------------------|------|------|-------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|------|------|------|
| Percent Reduction | 3.77 | 5.69 | -5.68 | 0.00 | 0.00          | 4.21         | 0.86       | 0.00           | 4.10          | 1.25        | 0.00     | 0.00      | 0.00      | 0.00 | 0.00 | 0.00 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**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         | 0.0198        | 0.0000             | 1.0000e-004        | 0.0000        |               | 0.0000             | 0.0000        |                    | 0.0000             | 0.0000             |          | 2.2000e-004   | 2.2000e-004   | 0.0000             |                    | 2.3000e-004   |
| Energy       | 3.0000e-005   | 2.3000e-004        | 2.0000e-004        | 0.0000        |               | 2.0000e-005        | 2.0000e-005   |                    | 2.0000e-005        | 2.0000e-005        |          | 0.2804        | 0.2804        | 1.0000e-005        | 1.0000e-005        | 0.2821        |
| Mobile       | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0131        | 0.0000             | 0.0131        | 3.2100e-003        | 0.0000             | 3.2100e-003        |          | 0.0000        | 0.0000        | 0.0000             |                    | 0.0000        |
| <b>Total</b> | <b>0.0198</b> | <b>2.3000e-004</b> | <b>3.0000e-004</b> | <b>0.0000</b> | <b>0.0131</b> | <b>2.0000e-005</b> | <b>0.0131</b> | <b>3.2100e-003</b> | <b>2.0000e-005</b> | <b>3.2300e-003</b> |          | <b>0.2806</b> | <b>0.2806</b> | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.2823</b> |

**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         | 0.0198        | 0.0000             | 1.0000e-004        | 0.0000        |               | 0.0000             | 0.0000        |                    | 0.0000             | 0.0000             |          | 2.2000e-004   | 2.2000e-004   | 0.0000             |                    | 2.3000e-004   |
| Energy       | 3.0000e-005   | 2.3000e-004        | 2.0000e-004        | 0.0000        |               | 2.0000e-005        | 2.0000e-005   |                    | 2.0000e-005        | 2.0000e-005        |          | 0.2804        | 0.2804        | 1.0000e-005        | 1.0000e-005        | 0.2821        |
| Mobile       | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0131        | 0.0000             | 0.0131        | 3.2100e-003        | 0.0000             | 3.2100e-003        |          | 0.0000        | 0.0000        | 0.0000             |                    | 0.0000        |
| <b>Total</b> | <b>0.0198</b> | <b>2.3000e-004</b> | <b>3.0000e-004</b> | <b>0.0000</b> | <b>0.0131</b> | <b>2.0000e-005</b> | <b>0.0131</b> | <b>3.2100e-003</b> | <b>2.0000e-005</b> | <b>3.2300e-003</b> |          | <b>0.2806</b> | <b>0.2806</b> | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.2823</b> |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|                   | 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 |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| 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            | Grading    | Grading    | 9/24/2019  | 9/25/2019 | 5             | 2        |                   |

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

| Phase Name | Offroad Equipment Type       | Amount | Usage Hours | Horse Power | Load Factor |
|------------|------------------------------|--------|-------------|-------------|-------------|
| Grading    | Concrete/Industrial Saws     | 0      | 0.00        | 81          | 0.73        |
| Grading    | Crushing/Proc. Equipment     | 1      | 7.50        | 415         | 0.78        |
| Grading    | Excavators                   | 1      | 7.50        | 396         | 0.38        |
| Grading    | Other Construction Equipment | 2      | 7.50        | 172         | 0.42        |
| Grading    | Rubber Tired Dozers          | 2      | 7.50        | 498         | 0.40        |
| Grading    | Tractors/Loaders/Backhoes    | 0      | 0.00        | 97          | 0.37        |

#### Trips and VMT

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

| 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 |
|------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Grading    | 6                       | 0.00               | 0.00               | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

**3.2 Grading - 2019****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 |               |                |                |               | 11.3904        | 0.0000        | 11.3904        | 6.2217         | 0.0000        | 6.2217        |          |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 6.7353        | 66.4384        | 47.6120        | 0.0830        |                | 2.9445        | 2.9445         |                | 2.7394        | 2.7394        |          | 8,617.1926        | 8,617.1926        | 1.9032        |     | 8,664.7723        |
| <b>Total</b>  | <b>6.7353</b> | <b>66.4384</b> | <b>47.6120</b> | <b>0.0830</b> | <b>11.3904</b> | <b>2.9445</b> | <b>14.3349</b> | <b>6.2217</b>  | <b>2.7394</b> | <b>8.9610</b> |          | <b>8,617.1926</b> | <b>8,617.1926</b> | <b>1.9032</b> |     | <b>8,664.7723</b> |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**3.2 Grading - 2019****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        |
| 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        |
| Worker       | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        |     | 0.0000        |
| <b>Total</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |     | <b>0.0000</b> |

**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 |               |                |                |               | 11.3904        | 0.0000        | 11.3904        | 6.2217         | 0.0000        | 6.2217        |               |                        | 0.0000                 |               |     | 0.0000                 |
| Off-Road      | 6.4813        | 62.6568        | 50.3153        | 0.0830        |                | 2.8206        | 2.8206         |                | 2.6270        | 2.6270        | 0.0000        | 8,617.192<br>6         | 8,617.192<br>6         | 1.9032        |     | 8,664.772<br>3         |
| <b>Total</b>  | <b>6.4813</b> | <b>62.6568</b> | <b>50.3153</b> | <b>0.0830</b> | <b>11.3904</b> | <b>2.8206</b> | <b>14.2110</b> | <b>6.2217</b>  | <b>2.6270</b> | <b>8.8486</b> | <b>0.0000</b> | <b>8,617.192<br/>6</b> | <b>8,617.192<br/>6</b> | <b>1.9032</b> |     | <b>8,664.772<br/>3</b> |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**3.2 Grading - 2019****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        |
| 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        |
| Worker       | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        |     | 0.0000        |
| <b>Total</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |     | <b>0.0000</b> |

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

|             | 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   | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0131        | 0.0000       | 0.0131     | 3.2100e-003    | 0.0000        | 3.2100e-003 |          | 0.0000    | 0.0000    | 0.0000 |     | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0131        | 0.0000       | 0.0131     | 3.2100e-003    | 0.0000        | 3.2100e-003 |          | 0.0000    | 0.0000    | 0.0000 |     | 0.0000 |

## 4.2 Trip Summary Information

| Land Use                         | Average Daily Trip Rate |          |        | Unmitigated | Mitigated  |
|----------------------------------|-------------------------|----------|--------|-------------|------------|
|                                  | Weekday                 | Saturday | Sunday | Annual VMT  | Annual VMT |
| Unrefrigerated Warehouse-No Rail | 1.68                    | 1.68     | 1.68   | 7,200       | 7,200      |
| Total                            | 1.68                    | 1.68     | 1.68   | 7,200       | 7,200      |

## 4.3 Trip Type Information

| Land Use                         | Miles      |            |             | Trip %     |            |             | Trip Purpose % |          |         |
|----------------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
|                                  | 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 |
| Unrefrigerated Warehouse-No Rail | 16.60      | 8.40       | 6.90        | 59.00      | 0.00       | 41.00       | 92             | 5        | 3       |

## 4.4 Fleet Mix

| Land Use                         | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Unrefrigerated Warehouse-No Rail | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 5.0 Energy Detail

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

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   | 3.0000e-005 | 2.3000e-004 | 2.0000e-004 | 0.0000 |               | 2.0000e-005  | 2.0000e-005 |                | 2.0000e-005   | 2.0000e-005 |          | 0.2804    | 0.2804    | 1.0000e-005 | 1.0000e-005 | 0.2821 |
| NaturalGas Unmitigated | 3.0000e-005 | 2.3000e-004 | 2.0000e-004 | 0.0000 |               | 2.0000e-005  | 2.0000e-005 |                | 2.0000e-005   | 2.0000e-005 |          | 0.2804    | 0.2804    | 1.0000e-005 | 1.0000e-005 | 0.2821 |

**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   |               |               |                    |                    |               |
| Unrefrigerated Warehouse-No Rail | 2.38356        | 3.0000e-005        | 2.3000e-004        | 2.0000e-004        | 0.0000        |               | 2.0000e-005        | 2.0000e-005        |                | 2.0000e-005        | 2.0000e-005        |          | 0.2804        | 0.2804        | 1.0000e-005        | 1.0000e-005        | 0.2821        |
| <b>Total</b>                     |                | <b>3.0000e-005</b> | <b>2.3000e-004</b> | <b>2.0000e-004</b> | <b>0.0000</b> |               | <b>2.0000e-005</b> | <b>2.0000e-005</b> |                | <b>2.0000e-005</b> | <b>2.0000e-005</b> |          | <b>0.2804</b> | <b>0.2804</b> | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.2821</b> |



## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**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   |               |               |                    |                    |               |
| Unrefrigerated Warehouse-No Rail | 0.00238356     | 3.0000e-005        | 2.3000e-004        | 2.0000e-004        | 0.0000        |               | 2.0000e-005        | 2.0000e-005        |                | 2.0000e-005        | 2.0000e-005        |          | 0.2804        | 0.2804        | 1.0000e-005        | 1.0000e-005        | 0.2821        |
| <b>Total</b>                     |                | <b>3.0000e-005</b> | <b>2.3000e-004</b> | <b>2.0000e-004</b> | <b>0.0000</b> |               | <b>2.0000e-005</b> | <b>2.0000e-005</b> |                | <b>2.0000e-005</b> | <b>2.0000e-005</b> |          | <b>0.2804</b> | <b>0.2804</b> | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.2821</b> |

**6.0 Area Detail****6.1 Mitigation Measures Area**

|             | 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   | 0.0198 | 0.0000 | 1.0000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 2.2000e-004 | 2.2000e-004 | 0.0000 |     | 2.3000e-004 |
| Unmitigated | 0.0198 | 0.0000 | 1.0000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 2.2000e-004 | 2.2000e-004 | 0.0000 |     | 2.3000e-004 |

## The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

**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 | 0.0000        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0198        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 1.0000e-005   | 0.0000        | 1.0000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 2.2000e-004        | 2.2000e-004        | 0.0000        |     | 2.3000e-004        |
| <b>Total</b>          | <b>0.0198</b> | <b>0.0000</b> | <b>1.0000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>2.2000e-004</b> | <b>2.2000e-004</b> | <b>0.0000</b> |     | <b>2.3000e-004</b> |

**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 | 0.0000        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0198        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 1.0000e-005   | 0.0000        | 1.0000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 2.2000e-004        | 2.2000e-004        | 0.0000        |     | 2.3000e-004        |
| <b>Total</b>          | <b>0.0198</b> | <b>0.0000</b> | <b>1.0000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>2.2000e-004</b> | <b>2.2000e-004</b> | <b>0.0000</b> |     | <b>2.3000e-004</b> |

**7.0 Water Detail**

The Park @ Live Oak (Landfilling Operations) - South Coast AQMD Air District, Summer

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**7.1 Mitigation Measures Water****8.0 Waste Detail**

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**8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

**10.0 Stationary Equipment**

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**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**

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**Attachment C (Refer to Response to Comment I-4)**  
**Urban Crossroads, Inc.**  
**Construction Activity Assessment - Traffic**

November 11, 2019

Ms. Tracy Zinn  
T&B Planning, Inc.  
3200 El Camino Real, Suite 100  
Irvine, CA 92602

**SUBJECT: THE PARK @ LIVE OAK CONSTRUCTION ACTIVITY ASSESSMENT**

Dear Ms. Tracy Zinn:

The analysis presented in this letter report has been conducted at the request of City of Irwindale staff to determine if traffic impacts previously disclosed in The Park @ Live Oak Traffic Impact Analysis (dated December 12, 2018, referred to as 2018 Traffic Study) would occur as a result of an overlap in existing site reclamation activity and construction activity (e.g., grading and/or building construction). To determine if potential construction-related traffic impacts would occur, trips associated with site grading and building construction have been added to existing baseline traffic conditions and opening year cumulative traffic conditions. If impacts were identified during one of the construction phases, then the corresponding mitigation measure is required to be implemented at either the grading or building permit phase.

Access to site for grading and construction traffic is proposed to utilize the existing points of access along Arrow Highway (immediately to the east and west of Avenida Barbosa). If in the future other driveways would be utilized to access either Arrow Highway or Live Oak Avenue from the site, then in accordance with Mitigation Measure 4.11-5 a traffic study shall be prepared to identify the proposed access points and required lane geometrics, turn lane storage capacity, and sight distance prior to the issuance of building permits.

## **EXISTING LANDFILLING OPERATION**

### **EMPLOYEE TRIPS**

Employee trips are estimated based on the number of employees anticipated to be on-site during landfilling operations. Based on information provided by the landfilling operator, it is estimated that 60 daily employee trips will continue to occur (30 inbound and 30 outbound). Each employee is assumed to drive to and from the Project site each day. Employees generally arrive to the site between 6:00 and 7:00 AM and depart by 3:30 PM. The potential impacts resulting from construction-related employee trips are considered less than significant during the peak hours because employees are scheduled to arrive and depart before the peak commute hours of 7:00-9:00 AM and 4:00-6:00 PM. Also, the employee trips associated with the current landfilling operation are captured in the existing baseline

traffic counts. As such, the effects of the current employee activity were addressed in the Existing peak hour operations analysis presented in 2018 Traffic Study.

### **HAULING ACTIVITY**

Hauling activity currently generates approximately 350 daily hauling trips (175 inbound and 175 outbound). The heavy truck trips associated with the landfiling operation are captured in the existing baseline traffic counts. As such, the effects of the current hauling activity were addressed in the Existing peak hour operations analysis presented in the 2018 Traffic Study.

### **SITE GRADING TRAFFIC AND MITIGATION MEASURES**

In event site grading overlaps with existing reclamation activity, trips associated with site grading have been added to the existing baseline conditions (which already includes the reclamation activity) to determine if any impacts are triggered.

Site grading activities are anticipated to result in 40 daily worker trips only (no vendor trips anticipated). As such, site grading activities are assumed to include 20 inbound employees during the AM peak hour and 20 outbound employees during the PM peak hour in an effort to conduct a conservative assessment (see Table 1). Based on typical construction industry practice, the majority of employees would arrive to the construction site between 6:00 and 7:00 AM and would depart by 3:30 PM. Similarly, vendor trips are anticipated to occur during the morning peak hour only as construction activity on the site is anticipated to end at approximately 3:30 PM and before the evening commute period. As previously noted, although the majority of these trips are expected to occur outside of the peak commute hours, there is certainly a possibility that some of this traffic could occur concurrent with the peak morning and evening commute hours. In an effort to conduct a conservative analysis, these trips have been assumed to all occur during the morning and evening peak hours as shown in Table 1.

Based on the peak hour operations analysis for E+P and Opening Year Cumulative traffic conditions for the potential overlap in site grading activity, the following intersections are anticipated to be cumulatively impacted (see Table 2):

- Speedway Driveway & Live Oak Avenue (#7)
- Avenida Barbosa & Arrow Highway (#15)
- I-605 Northbound Off-Ramps & Live Oak Avenue (#23)

All other impacts to the off-site study area intersections are anticipated to be less than significant for site grading activities. Attachment A includes the intersection operation analysis worksheets.

## **MITIGATION MEASURES**

The following mitigation measures identified in the Draft Environmental Impact Report (DEIR) are to be implemented prior to the issuance of grading permit (see Table 4):

Consistent with MM 4.11-5.d. and MM 4.11-6.e.: As a condition of any grading permit that would involve ingress/egress access at the existing intersection of Speedway Driveway & Live Oak Avenue, the Project Applicant shall install or make a fair share monetary contribution to the City of Irwindale for the following improvements at Speedway & Live Oak Avenue (Intersection #7):

- Install a traffic signal (fair share)
- Add a 3<sup>rd</sup> westbound through lane (construct)

Consistent with MM 4.11-6.d.: Prior to the issuance of grading permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvement to the intersection of Avenida Barbosa & Arrow Highway (Intersection #15):

- Add a 3<sup>rd</sup> westbound through lane (fair share)

Consistent with MM 4.11-6.g.: Prior to the issuance of grading permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvement to the intersection of I-605 Northbound Off-Ramp & Live Oak Avenue (Intersection #23):

- Install a traffic signal (fair share)

Attachment C includes the intersection operation analysis worksheets with improvements.

## **PHASE 1 CONSTRUCTION TRAFFIC AND MITIGATION MEASURES**

The construction activity and associated vehicle trips that would occur during the morning and evening peak commute hours for Phase 1 construction is estimated as follows, based on the air quality analysis prepared for the DEIR.

Phase 1 construction activity is representative of approximately 40% of the total Project site and as such, construction traffic associated with Phase 1 construction activity is assumed to be proportional to the total construction-related trips for the Project. Based on the California Emissions Estimator Model (CalEEMod), the DEIR and underlying air quality analysis estimated up to 714 daily worker trips and 282 daily vendor trips associated with construction activity for the Project. As such, Phase 1 construction activity is estimated to result in 286 daily worker trips and 114 daily vendor trips, or 314 passenger car equivalent (PCE) trips during the morning and evening peak hours. It should be noted that the trip generation shown in Table 1 for the construction phase is less than the Project trips evaluated in the 2018 Traffic Study. In an effort to conduct a conservative analysis, these trips have been assumed to all occur during the morning and evening peak hours as shown in Table 1.

Based on the peak hour operations analysis for E+P and Opening Year Cumulative traffic conditions for the building construction activity, the following intersections are anticipated to be cumulatively impacted (see Table 3):

- Live Oak Avenue & Arrow Highway (West) (#4)
- Speedway Driveway & Live Oak Avenue (#7)
- Avenida Barbosa & Arrow Highway (#15)
- I-605 Northbound Off-Ramps & Live Oak Avenue (#23)

All other impacts to the off-site study area intersections are anticipated to be less than significant for building construction activities. Attachment B includes the intersection operation analysis worksheets.

### **MITIGATION MEASURES**

In addition to the DEIR mitigation measures necessary to address potential site grading impacts, the following additional mitigation measure is also required prior to the issuance of building permit (see Table 5):

Consistent with MM 4.11-6.c.: Prior to the issuance of grading permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvement to the intersection of Live Oak Avenue & Arrow Highway (West) (Intersection #4):

- Add a 3<sup>rd</sup> westbound through lane (fair share)

Attachment C includes the intersection operation analysis worksheets with improvements.

If you have any questions, please contact me directly at (949) 336-5982.

Respectfully submitted,

URBAN CROSSROADS, INC.



Charlene So, PE  
Associate Principal



**Table 1**

**Grading and Construction Traffic**

| Grading/Construction Activity      | AM Peak Hour |          |            | PM Peak Hour |            |            | Daily      |
|------------------------------------|--------------|----------|------------|--------------|------------|------------|------------|
|                                    | In           | Out      | Total      | In           | Out        | Total      |            |
| Grading                            |              |          |            |              |            |            |            |
| Employees:                         | 20           | 0        | 20         | 0            | 20         | 20         | 40         |
| <b>Grading Traffic:</b>            | <b>20</b>    | <b>0</b> | <b>20</b>  | <b>0</b>     | <b>20</b>  | <b>20</b>  | <b>40</b>  |
| Construction                       |              |          |            |              |            |            |            |
| Employees:                         | 143          | 0        | 143        | 0            | 143        | 143        | 286        |
| Vendor Trips (4+-Axle PCE):        | 171          | 0        | 171        | 0            | 171        | 171        | 342        |
| <b>Construction Traffic (PCE):</b> | <b>314</b>   | <b>0</b> | <b>314</b> | <b>0</b>     | <b>314</b> | <b>314</b> | <b>628</b> |

Table 2

## Determination of Significant Impacts for Grading Activity

| #  | Intersection                                 | Traffic Control <sup>2</sup> | Existing (2017)                 |        | E+P (Grading)                   |        |                            |       | Significant Impact? <sup>3,4</sup> | 2020 Without Project            |                                 | 2020 With Project (Grading) |                            |       |                                    |                  |
|----|----------------------------------------------|------------------------------|---------------------------------|--------|---------------------------------|--------|----------------------------|-------|------------------------------------|---------------------------------|---------------------------------|-----------------------------|----------------------------|-------|------------------------------------|------------------|
|    |                                              |                              | V/C Ratio or Delay <sup>1</sup> |        | V/C Ratio or Delay <sup>1</sup> |        | Difference in V/C or Delay |       |                                    | V/C Ratio or Delay <sup>1</sup> | V/C Ratio or Delay <sup>1</sup> |                             | Difference in V/C or Delay |       | Significant Impact? <sup>3,4</sup> |                  |
|    |                                              |                              | AM                              | PM     | AM                              | PM     | AM                         | PM    |                                    |                                 | AM                              | PM                          | AM                         | PM    |                                    |                  |
| 1  | Myrtle Av. & Longden Av.                     | TS                           | 0.81                            | 0.92   | 0.81                            | 0.92   | --                         | 0.000 | No                                 | 0.81                            | 0.96                            | 0.81                        | 0.96                       | --    | 0.000                              | No               |
| 2  | Myrtle Av./Peck Rd. & Live Oak Av.           | TS                           | 0.88                            | 0.94   | 0.88                            | 0.94   | --                         | 0.000 | No                                 | 0.90                            | 0.96                            | 0.90                        | 0.96                       | 0.000 | 0.000                              | No               |
| 3  | Longden Av. & Live Oak Av./Driveway          | TS                           | 0.74                            | 0.88   | 0.74                            | 0.88   | --                         | --    | No                                 | 0.78                            | 0.97                            | 0.79                        | 0.97                       | --    | 0.000                              | No               |
| 4  | Live Oak Av. & Arrow Hwy. (West)             | TS                           | 0.99                            | 0.69   | 0.99                            | 0.69   | 0.000                      | --    | No                                 | 1.04                            | 1.82                            | 1.05                        | 1.82                       | 0.002 | 0.002                              | No               |
| 7  | Speedway Dwy. & Live Oak Av. <sup>6</sup>    | CSS                          | 20.8                            | 1177.1 | 20.9                            | 1237.1 | --                         | 60.0  | Yes                                | 68.8                            | 511.9                           | 71.9                        | 952.2                      | 3.1   | 440.3                              | Yes              |
| 15 | Avenida Barbosa/Private Drive A & Arrow Hwy. | TS                           | 1.02                            | 0.69   | 1.02                            | 0.70   | 0.000                      | --    | No                                 | 1.07                            | 0.86                            | 1.11                        | 0.88                       | 0.041 | --                                 | Yes              |
| 23 | I-605 NB Off-Ramps & Live Oak Av.            | CSS                          | 119.3                           | 123.9  | 129.0                           | 123.9  | 9.7                        | 0.0   | Yes <sup>5</sup>                   | 370.5                           | 211.4                           | 397.5                       | 250.5                      | 27.0  | 39.1                               | Yes <sup>5</sup> |
| 26 | Rivergrade Rd. & Live Oak Av.                | TS                           | 0.71                            | 1.04   | 0.71                            | 1.04   | --                         | 0.000 | No                                 | 0.72                            | 1.05                            | 0.73                        | 1.05                       | --    | 0.000                              | No               |
| 27 | Stewart Av. & Live Oak Av.                   | TS                           | 0.90                            | 0.80   | 0.90                            | 0.80   | --                         | --    | No                                 | 0.92                            | 0.84                            | 0.93                        | 0.84                       | 0.005 | --                                 | No               |
| 29 | Arrow Hwy. & Live Oak Av. (East)             | TS                           | 0.69                            | 0.90   | 0.69                            | 0.90   | --                         | --    | No                                 | 0.74                            | 0.95                            | 0.75                        | 0.95                       | --    | 0.000                              | No               |
| 30 | Maine Av. & Arrow Hwy.                       | TS                           | Not Applicable                  |        | Not Applicable                  |        |                            |       |                                    | 0.89                            | 0.46                            | 0.89                        | 0.46                       | --    | --                                 | No               |

<sup>1</sup> V/C calculated using the TRAFFIX operation analysis software, based on the ICU methodology. Delay based on HCM (6th Edition) methodology.

<sup>2</sup> TS = Traffic Signal; CSS = Cross-Street Stop

<sup>3</sup> Significant impact occurs when V/C is increased by 0.02 or more for either peak hour.

<sup>4</sup> Significant impact occurs when the delay is increased by more than 2 seconds.

<sup>5</sup> Caltrans facility does not have significance threshold. However, Project will contribute to the existing deficiency. As such, impact is cumulatively considerable.

<sup>6</sup> Intersection includes additional 3rd westbound through lane along Project's frontage on Live Oak Avenue for With Project traffic conditions.

Table 3

## Determination of Significant Impacts for Construction Activity

| #  | Intersection                                 | Traffic Control <sup>2</sup> | Existing (2017)                 |        | E+P (Construction)              |        |                            |       |                                    | 2020 Without Project            |       | 2020 With Project (Construction) |        |                            |       |                                    |
|----|----------------------------------------------|------------------------------|---------------------------------|--------|---------------------------------|--------|----------------------------|-------|------------------------------------|---------------------------------|-------|----------------------------------|--------|----------------------------|-------|------------------------------------|
|    |                                              |                              | V/C Ratio or Delay <sup>1</sup> |        | V/C Ratio or Delay <sup>1</sup> |        | Difference in V/C or Delay |       | Significant Impact? <sup>3,4</sup> | V/C Ratio or Delay <sup>1</sup> |       | V/C Ratio or Delay <sup>1</sup>  |        | Difference in V/C or Delay |       | Significant Impact? <sup>3,4</sup> |
|    |                                              |                              | AM                              | PM     | AM                              | PM     | AM                         | PM    |                                    | AM                              | PM    | AM                               | PM     | AM                         | PM    |                                    |
| 1  | Myrtle Av. & Longden Av.                     | TS                           | 0.81                            | 0.92   | 0.81                            | 0.92   | --                         | 0.000 | No                                 | 0.81                            | 0.96  | 0.81                             | 0.96   | --                         | 0.000 | No                                 |
| 2  | Myrtle Av./Peck Rd. & Live Oak Av.           | TS                           | 0.88                            | 0.94   | 0.88                            | 0.94   | --                         | 0.002 | No                                 | 0.90                            | 0.96  | 0.90                             | 0.96   | 0.000                      | 0.002 | No                                 |
| 3  | Longden Av. & Live Oak Av./Driveway          | TS                           | 0.74                            | 0.88   | 0.74                            | 0.88   | --                         | --    | No                                 | 0.78                            | 0.97  | 0.79                             | 0.97   | --                         | 0.000 | No                                 |
| 4  | Live Oak Av. & Arrow Hwy. (West)             | TS                           | 0.99                            | 0.69   | 1.03                            | 0.71   | 0.038                      | --    | Yes                                | 1.04                            | 1.82  | 1.15                             | 1.84   | 0.109                      | 0.019 | Yes                                |
| 7  | Speedway Dwy. & Live Oak Av. <sup>6</sup>    | CSS                          | 20.8                            | 1177.1 | 23.6                            | 1448.8 | --                         | 271.7 | Yes                                | 68.8                            | 511.9 | 99.7                             | 1017.3 | 30.9                       | 505.4 | Yes                                |
| 15 | Avenida Barbosa/Private Drive A & Arrow Hwy. | TS                           | 1.02                            | 0.69   | 1.02                            | 0.73   | 0.000                      | --    | No                                 | 1.07                            | 0.86  | 1.11                             | 0.91   | 0.041                      | 0.053 | Yes                                |
| 23 | I-605 NB Off-Ramps & Live Oak Av.            | CSS                          | 119.3                           | 123.9  | 319.1                           | 123.9  | 199.8                      | 0.0   | Yes <sup>5</sup>                   | 370.5                           | 211.4 | 643.9                            | 286.5  | 273.4                      | 75.1  | Yes <sup>5</sup>                   |
| 26 | Rivergrade Rd. & Live Oak Av.                | TS                           | 0.71                            | 1.04   | 0.72                            | 1.04   | --                         | 0.000 | No                                 | 0.72                            | 1.05  | 0.73                             | 1.05   | --                         | 0.000 | No                                 |
| 27 | Stewart Av. & Live Oak Av.                   | TS                           | 0.90                            | 0.80   | 0.90                            | 0.80   | 0.005                      | --    | No                                 | 0.92                            | 0.84  | 0.93                             | 0.85   | 0.008                      | --    | No                                 |
| 29 | Arrow Hwy. & Live Oak Av. (East)             | TS                           | 0.69                            | 0.90   | 0.69                            | 0.90   | --                         | --    | No                                 | 0.74                            | 0.95  | 0.75                             | 0.95   | --                         | 0.003 | No                                 |
| 30 | Maine Av. & Arrow Hwy.                       | TS                           | Not Applicable                  |        | Not Applicable                  |        |                            |       |                                    | 0.89                            | 0.46  | 0.89                             | 0.46   | --                         | --    | No                                 |

<sup>1</sup> V/C calculated using the TRAFFIX operation analysis software, based on the ICU methodology. Delay based on HCM (6th Edition) methodology.

<sup>2</sup> TS = Traffic Signal; CSS = Cross-Street Stop

<sup>3</sup> Significant impact occurs when V/C is increased by 0.02 or more for either peak hour.

<sup>4</sup> Significant impact occurs when the delay is increased by more than 2 seconds.

<sup>5</sup> Caltrans facility does not have significance threshold. However, Project will contribute to the existing deficiency. As such, impact is cumulatively considerable.

<sup>6</sup> Intersection includes additional 3rd westbound through lane along Project's frontage on Live Oak Avenue for With Project traffic conditions.

Table 4

## Intersection Analysis for Grading, With Improvements

| #  | Intersection                                                                                                                                                                   | Traffic Control <sup>4</sup>                           | Intersection Approach Lanes <sup>1</sup> |                                |                                |                                |                                |                                |                                |                                |                                              |                                |                                                        |                                                        | Delay <sup>2</sup><br>(secs.)  |                                | Level of Service                     |                                      | ICU <sup>3</sup><br>(v/c)            |                                      | Level of Service |    |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------------------------------------|--------------------------------|--------------------------------------------------------|--------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|------------------|----|
|    |                                                                                                                                                                                |                                                        | Northbound                               |                                |                                | Southbound                     |                                |                                | Eastbound                      |                                |                                              | Westbound                      |                                                        |                                                        |                                |                                |                                      |                                      |                                      |                                      |                  |    |
|    |                                                                                                                                                                                |                                                        | L                                        | T                              | R                              | L                              | T                              | R                              | L                              | T                              | R                                            | L                              | T                                                      | R                                                      | AM                             | PM                             | AM                                   | PM                                   | AM                                   | PM                                   | AM               | PM |
| 7  | Speedway Dwy. & Live Oak Av.<br>- Existing<br>- E+P (Grading)<br>- With Improvements<br><br>- 2020 Without Project<br>- 2020 With Project (Grading)<br>- With Improvements     | CSS<br>CSS<br>CSS<br><br>CSS<br>CSS<br><u>TS</u>       | 0<br>0<br>0<br><br>0<br>0<br>0           | 1<br>1<br>1<br><br>1<br>1<br>1 | 0<br>0<br>0<br><br>0<br>0<br>0 | 0<br>0<br>0<br><br>0<br>0<br>0 | 0<br>0<br>0<br><br>0<br>0<br>0 | 3<br>3<br>3<br><br>3<br>3<br>3 | 0<br>0<br>0<br><br>0<br>0<br>0 | 1<br>1<br>1<br><br>1<br>1<br>1 | 2<br>2<br><u>3</u><br><br>2<br>2<br><u>3</u> | 0<br>0<br>0<br><br>0<br>0<br>0 | 20.8<br>20.9<br>17.5<br><br>68.8<br>71.9<br>6.2        | #####<br>#####<br>625.0<br><br>511.9<br>952.2<br>17.8  | C<br>C<br>C<br><br>F<br>F<br>A | F<br>F<br>F<br><br>F<br>F<br>B | --<br>--<br>--<br><br>--<br>--<br>-- | --<br>--<br>--<br><br>--<br>--<br>-- | --<br>--<br>--<br><br>--<br>--<br>-- | --<br>--<br>--<br><br>--<br>--<br>-- |                  |    |
| 15 | Avenida Barbosa/Private Drive A & Arrow Hwy.<br>- 2020 Without Project<br>- 2020 With Project (Grading)<br>- With Improvements                                                 | TS<br>TS<br>TS                                         | 0<br>0<br>0                              | 0<br>0<br>0                    | 0<br>0<br>0                    | 2<br>2<br>2                    | 0<br>0<br>0                    | 1<br>1<br>1                    | 1<br>1<br>1                    | 2<br>2<br>2                    | 0<br>0<br>0                                  | 0<br>0<br><u>3</u>             | 1<br>1<br>1                                            | --<br>--<br>--                                         | --<br>--<br>--                 | --<br>--<br>--                 | --<br>--<br>--                       | 1.067<br>1.108<br>0.966              | 0.857<br>0.876<br>0.769              | F<br>F<br>E                          | D<br>D<br>C      |    |
| 23 | I-605 NB Off-Ramp & Live Oak Av.<br>- Existing<br>- E+P (Grading)<br>- With Improvements<br><br>- 2020 Without Project<br>- 2020 With Project (Grading)<br>- With Improvements | CSS<br>CSS<br><u>TS</u><br><br>CSS<br>CSS<br><u>TS</u> | 0<br>0<br>0<br><br>0<br>0<br>0           | 0<br>0<br>0<br><br>0<br>0<br>0 | 1<br>1<br>1<br><br>1<br>1<br>1 | 0<br>0<br>0<br><br>0<br>0<br>0 | 0<br>0<br>0<br><br>0<br>0<br>0 | 2<br>2<br>2<br><br>2<br>2<br>2 | 0<br>0<br>0<br><br>0<br>0<br>0 | 0<br>0<br>0<br><br>0<br>0<br>0 | 2<br>2<br>2<br><br>2<br>2<br>2               | 0<br>0<br>0<br><br>0<br>0<br>0 | >100.0<br>>100.0<br>0.9<br><br>>100.0<br>>100.0<br>0.9 | >100.0<br>>100.0<br>0.5<br><br>>100.0<br>>100.0<br>1.0 | F<br>F<br>A<br><br>F<br>F<br>A | F<br>F<br>A<br><br>F<br>F<br>A | --<br>--<br>--<br><br>--<br>--<br>-- | --<br>--<br>--<br><br>--<br>--<br>-- | --<br>--<br>--<br><br>--<br>--<br>-- | --<br>--<br>--<br><br>--<br>--<br>-- |                  |    |

<sup>1</sup> When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; >> = Free Right Turn Lane; d= Defacto Right Turn Lane; 1 = Improvement

<sup>2</sup> Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

<sup>3</sup> Intersection capacity utilization (ICU) methodology results are presented as a volume-to-capacity ratio. ICU not reported for unsignalized intersections or at Caltrans facilities.

<sup>4</sup> TS = Traffic Signal; CSS = Cross-Street Stop; **TS** = Improvement

Table 5

## Intersection Analysis for Construction, With Improvements

| #                   | Intersection                                 | Traffic Control <sup>4</sup> | Intersection Approach Lanes <sup>1</sup> |     |     |            |   |   |           |     |     |           |          |     | Delay <sup>2</sup><br>(secs.) |                | Level of Service |              | ICU <sup>3</sup><br>(v/c) |              | Level of Service |    |
|---------------------|----------------------------------------------|------------------------------|------------------------------------------|-----|-----|------------|---|---|-----------|-----|-----|-----------|----------|-----|-------------------------------|----------------|------------------|--------------|---------------------------|--------------|------------------|----|
|                     |                                              |                              | Northbound                               |     |     | Southbound |   |   | Eastbound |     |     | Westbound |          |     |                               |                |                  |              |                           |              |                  |    |
|                     |                                              |                              | L                                        | T   | R   | L          | T | R | L         | T   | R   | L         | T        | R   | AM                            | PM             | AM               | PM           | AM                        | PM           | AM               | PM |
| 4                   | Live Oak Av. & Arrow Hwy. (West)             |                              |                                          |     |     |            |   |   |           |     |     |           |          |     |                               |                |                  |              |                           |              |                  |    |
|                     | - Existing                                   | TS                           | 2                                        | 0   | 1>> | 0          | 0 | 0 | 0         | 2   | 1>> | 2         | 2        | 0   | --                            | --             | --               | --           | <b>0.989</b>              | 0.692        | E                | B  |
|                     | - E+P (Construction)                         | TS                           | 2                                        | 0   | 1>> | 0          | 0 | 0 | 0         | 2   | 1>> | 2         | 2        | 0   | --                            | --             | --               | --           | <b>1.027</b>              | 0.708        | F                | C  |
|                     | - With Improvements                          | TS                           | 2                                        | 0   | 1>> | 0          | 0 | 0 | 0         | 2   | 1>> | 2         | <b>3</b> | 0   | --                            | --             | --               | --           | 0.836                     | 0.708        | D                | C  |
|                     | - 2020 Without Project                       | TS                           | 2                                        | 0   | 1>> | 0          | 0 | 0 | 0         | 2   | 1>> | 2         | 2        | 0   | --                            | --             | --               | --           | <b>1.044</b>              | <b>1.816</b> | F                | F  |
|                     | - 2020 With Project (Construction)           | TS                           | 2                                        | 0   | 1>> | 0          | 0 | 0 | 0         | 2   | 1>> | 2         | 2        | 0   | --                            | --             | --               | --           | <b>1.153</b>              | <b>1.835</b> | F                | F  |
| - With Improvements | TS                                           | 2                            | 0                                        | 1>> | 0   | 0          | 0 | 0 | 2         | 1>> | 2   | <b>3</b>  | 0        | --  | --                            | --             | --               | <b>0.951</b> | <b>1.835</b>              | E            | F                |    |
| 7                   | Speedway Dwy. & Live Oak Av.                 |                              |                                          |     |     |            |   |   |           |     |     |           |          |     |                               |                |                  |              |                           |              |                  |    |
|                     | - Existing                                   | CSS                          | 0                                        | 1   | 0   | 0          | 0 | 0 | 0         | 3   | 0   | 1         | 2        | 0   | 20.8                          | > <b>100.0</b> | C                | F            | --                        | --           | --               | -- |
|                     | - E+P (Construction)                         | CSS                          | 0                                        | 1   | 0   | 0          | 0 | 0 | 0         | 3   | 0   | 1         | 2        | 0   | 23.6                          | > <b>100.0</b> | C                | F            | --                        | --           | --               | -- |
|                     | - With Improvements                          | CSS                          | 0                                        | 1   | 0   | 0          | 0 | 0 | 0         | 3   | 0   | 1         | <b>3</b> | 0   | 18.6                          | <b>674.1</b>   | C                | F            | --                        | --           | --               | -- |
|                     | - 2020 Without Project                       | CSS                          | 0                                        | 1   | 0   | 0          | 0 | 0 | 0         | 3   | 0   | 1         | 2        | 0   | <b>68.8</b>                   | > <b>100.0</b> | F                | F            | --                        | --           | --               | -- |
|                     | - 2020 With Project (Construction)           | CSS                          | 0                                        | 1   | 0   | 0          | 0 | 0 | 0         | 3   | 0   | 1         | 2        | 0   | <b>99.7</b>                   | > <b>100.0</b> | F                | F            | --                        | --           | --               | -- |
| - With Improvements | <b>TS</b>                                    | 0                            | 1                                        | 0   | 0   | 0          | 0 | 0 | 3         | 0   | 1   | <b>3</b>  | 0        | 9.4 | 18.4                          | A              | B                | --           | --                        | --           | --               |    |
| 15                  | Avenida Barbosa/Private Drive A & Arrow Hwy. |                              |                                          |     |     |            |   |   |           |     |     |           |          |     |                               |                |                  |              |                           |              |                  |    |
|                     | - 2020 Without Project                       | TS                           | 0                                        | 0   | 0   | 2          | 0 | 1 | 1         | 2   | 0   | 0         | 2        | 1   | --                            | --             | --               | --           | <b>1.016</b>              | 0.689        | F                | B  |
|                     | - 2020 With Project (Construction)           | TS                           | 0                                        | 0   | 0   | 2          | 0 | 1 | 1         | 2   | 0   | 0         | 2        | 1   | --                            | --             | --               | --           | <b>1.116</b>              | 0.887        | F                | D  |
| - With Improvements | TS                                           | 0                            | 0                                        | 0   | 2   | 0          | 1 | 1 | 2         | 0   | 0   | <b>3</b>  | 1        | --  | --                            | --             | --               | <b>0.966</b> | 0.803                     | E            | D                |    |
| 23                  | I-605 NB Off-Ramp & Live Oak Av.             |                              |                                          |     |     |            |   |   |           |     |     |           |          |     |                               |                |                  |              |                           |              |                  |    |
|                     | - Existing                                   | CSS                          | 0                                        | 0   | 1   | 0          | 0 | 1 | 0         | 2   | 0   | 0         | 2        | 0   | > <b>100.0</b>                | > <b>100.0</b> | F                | F            | --                        | --           | --               | -- |
|                     | - E+P                                        | CSS                          | 0                                        | 0   | 1   | 0          | 0 | 1 | 0         | 2   | 0   | 0         | 2        | 0   | > <b>100.0</b>                | > <b>100.0</b> | F                | F            | --                        | --           | --               | -- |
|                     | - With Improvements                          | <b>TS</b>                    | 0                                        | 0   | 1   | 0          | 0 | 1 | 0         | 2   | 0   | 0         | 2        | 0   | 0.9                           | 1.0            | A                | A            | --                        | --           | --               | -- |
|                     | - 2020 Without Project                       | CSS                          | 0                                        | 0   | 1   | 0          | 0 | 1 | 0         | 2   | 0   | 0         | 2        | 0   | > <b>100.0</b>                | > <b>100.0</b> | F                | F            | --                        | --           | --               | -- |
|                     | - 2020 With Project (Grading)                | CSS                          | 0                                        | 0   | 1   | 0          | 0 | 1 | 0         | 2   | 0   | 0         | 2        | 0   | > <b>100.0</b>                | > <b>100.0</b> | F                | F            | --                        | --           | --               | -- |
| - With Improvements | <b>TS</b>                                    | 0                            | 0                                        | 1   | 0   | 0          | 1 | 0 | 2         | 0   | 0   | 2         | 0        | 1.0 | 1.0                           | A              | A                | --           | --                        | --           | --               |    |

<sup>1</sup> When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; >> = Free Right Turn Lane; d= Defacto Right Turn Lane; 1 = Improvement

<sup>2</sup> Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

<sup>3</sup> Intersection capacity utilization (ICU) methodology results are presented as a volume-to-capacity ratio. ICU not reported for unsignalized intersections or at Caltrans facilities.

<sup>4</sup> TS = Traffic Signal; CSS = Cross-Street Stop; **TS** = Improvement

## **ATTACHMENT A: INTERSECTION OPERATION ANALYSIS WORKSHEETS: SITE GRADING ACTIVITY**

**E+P**

**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)

E+P

AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 Myrtle / Longden

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.810

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 69 Level Of Service: D

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound  |     |     | West Bound  |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L           | T   | R   | L           | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Prot+Permit |     |     | Prot+Permit |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include     |     |     | Include     |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 113  | 645  | 10   | 138  | 687  | 57   | 49   | 236  | 81   | 115  | 780  | 312  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 113  | 645  | 10   | 138  | 687  | 57   | 49   | 236  | 81   | 115  | 780  | 312  |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 113  | 645  | 10   | 138  | 687  | 57   | 49   | 236  | 81   | 115  | 780  | 312  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| PHF Volume:  | 121  | 691  | 11   | 148  | 736  | 61   | 53   | 253  | 87   | 123  | 836  | 334  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 121  | 691  | 11   | 148  | 736  | 61   | 53   | 253  | 87   | 123  | 836  | 334  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 121  | 691  | 11   | 148  | 736  | 61   | 53   | 253  | 87   | 123  | 836  | 334  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.97 | 0.03 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.43 | 0.57 |
| Final Sat.: | 1600 | 3151 | 49   | 1600 | 3200 | 1600 | 1600 | 1600 | 1600 | 1600 | 2286 | 914  |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.08 | 0.22 | 0.22 | 0.09 | 0.23 | 0.04 | 0.03 | 0.16 | 0.05 | 0.08 | 0.37 | 0.37 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)

E+P

AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Myrtle/Peck / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.878

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 90 Level Of Service: D

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 2   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 241  | 662  | 160  | 28   | 577  | 235  | 133  | 535  | 237  | 184  | 1068 | 13   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 241  | 662  | 160  | 28   | 577  | 235  | 133  | 535  | 237  | 184  | 1068 | 13   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 241  | 662  | 160  | 28   | 577  | 235  | 133  | 535  | 237  | 184  | 1068 | 13   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 249  | 685  | 165  | 29   | 597  | 243  | 138  | 553  | 245  | 190  | 1104 | 13   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 249  | 685  | 165  | 29   | 597  | 243  | 138  | 553  | 245  | 190  | 1104 | 13   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 249  | 685  | 165  | 29   | 597  | 243  | 138  | 553  | 245  | 190  | 1104 | 13   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.98 | 0.02 |
| Final Sat.: | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3162 | 38   |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.16 | 0.21 | 0.10 | 0.02 | 0.19 | 0.15 | 0.09 | 0.17 | 0.15 | 0.12 | 0.35 | 0.35 |
| Crit Moves: | **** |      |      |      | **** |      | **** |      |      |      | **** |      |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)

E+P

AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Longden / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.736

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 55 Level Of Service: C

\*\*\*\*\*

| Approach:   | North Bound |     |        | South Bound |     |       | East Bound |     |       | West Bound |     |       |
|-------------|-------------|-----|--------|-------------|-----|-------|------------|-----|-------|------------|-----|-------|
| Movement:   | L           | T   | R      | L           | T   | R     | L          | T   | R     | L          | T   | R     |
| Control:    | Split Phase |     |        | Split Phase |     |       | Protected  |     |       | Protected  |     |       |
| Rights:     | Include     |     |        | Include     |     |       | Include    |     |       | Include    |     |       |
| Min. Green: | 0           | 0   | 0      | 0           | 0   | 0     | 0          | 0   | 0     | 0          | 0   | 0     |
| Y+R:        | 4.0         | 4.0 | 4.0    | 4.0         | 4.0 | 4.0   | 4.0        | 4.0 | 4.0   | 4.0        | 4.0 | 4.0   |
| Lanes:      | 0           | 0   | 1! 0 0 | 1           | 1   | 0 0 1 | 1          | 0   | 2 0 1 | 1          | 0   | 2 0 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 5    | 7    | 8    | 379  | 5    | 17   | 27   | 619  | 0    | 9    | 1485 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 5    | 7    | 8    | 379  | 5    | 17   | 27   | 619  | 0    | 9    | 1485 | 0    |
| Added Vol:   | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 5    | 7    | 8    | 380  | 5    | 17   | 27   | 620  | 0    | 9    | 1485 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 5    | 7    | 8    | 394  | 5    | 18   | 28   | 642  | 0    | 9    | 1539 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 5    | 7    | 8    | 394  | 5    | 18   | 28   | 642  | 0    | 9    | 1539 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 5    | 7    | 8    | 394  | 5    | 18   | 28   | 642  | 0    | 9    | 1539 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.25 | 0.35 | 0.40 | 1.97 | 0.03 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 |
| Final Sat.: | 400  | 560  | 640  | 3158 | 42   | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.01 | 0.01 | 0.01 | 0.12 | 0.12 | 0.01 | 0.02 | 0.20 | 0.00 | 0.01 | 0.48 | 0.00 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)

E+P

AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Live Oak / Arrow (West)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.989

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 976  | 0    | 247  | 0    | 0    | 0    | 0    | 493  | 0    | 145  | 1774 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 976  | 0    | 247  | 0    | 0    | 0    | 0    | 493  | 0    | 145  | 1774 | 0    |
| Added Vol:   | 0    | 0    | 18   | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 976  | 0    | 265  | 0    | 0    | 0    | 0    | 494  | 0    | 145  | 1774 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 1009 | 0    | 274  | 0    | 0    | 0    | 0    | 511  | 0    | 150  | 1835 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 1009 | 0    | 274  | 0    | 0    | 0    | 0    | 511  | 0    | 150  | 1835 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 1009 | 0    | 274  | 0    | 0    | 0    | 0    | 511  | 0    | 150  | 1835 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 2.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 0    | 3200 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.32 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 | 0.00 | 0.05 | 0.57 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      | **** |      |      | **** |      |      |

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| Intersection             |        |      |        |       |        |      |
|--------------------------|--------|------|--------|-------|--------|------|
| Int Delay, s/veh         | 0.6    |      |        |       |        |      |
| Movement                 | EBT    | EBR  | WBL    | WBT   | NBL    | NBR  |
| Lane Configurations      | ↑↑↑    |      | ↘      | ↑↑    | ↘      |      |
| Traffic Vol, veh/h       | 813    | 29   | 27     | 1229  | 12     | 30   |
| Future Vol, veh/h        | 813    | 29   | 27     | 1229  | 12     | 30   |
| Conflicting Peds, #/hr   | 0      | 0    | 0      | 0     | 0      | 0    |
| Sign Control             | Free   | Free | Free   | Free  | Stop   | Stop |
| RT Channelized           | -      | None | -      | None  | -      | None |
| Storage Length           | -      | -    | 150    | -     | 0      | -    |
| Veh in Median Storage, # | 0      | -    | -      | 0     | 0      | -    |
| Grade, %                 | 0      | -    | -      | 0     | 0      | -    |
| Peak Hour Factor         | 97     | 97   | 97     | 97    | 97     | 97   |
| Heavy Vehicles, %        | 0      | 0    | 0      | 0     | 0      | 0    |
| Mvmt Flow                | 838    | 30   | 28     | 1267  | 12     | 31   |
|                          |        |      |        |       |        |      |
| Major/Minor              | Major1 |      | Major2 |       | Minor1 |      |
| Conflicting Flow All     | 0      | 0    | 868    | 0     | 1543   | 434  |
| Stage 1                  | -      | -    | -      | -     | 853    | -    |
| Stage 2                  | -      | -    | -      | -     | 690    | -    |
| Critical Hdwy            | -      | -    | 5.3    | -     | 6.25   | 7.1  |
| Critical Hdwy Stg 1      | -      | -    | -      | -     | 6.6    | -    |
| Critical Hdwy Stg 2      | -      | -    | -      | -     | 5.8    | -    |
| Follow-up Hdwy           | -      | -    | 3.1    | -     | 3.65   | 3.9  |
| Pot Cap-1 Maneuver       | -      | -    | 459    | -     | 134    | 492  |
| Stage 1                  | -      | -    | -      | -     | 308    | -    |
| Stage 2                  | -      | -    | -      | -     | 451    | -    |
| Platoon blocked, %       | -      | -    |        | -     |        |      |
| Mov Cap-1 Maneuver       | -      | -    | 459    | -     | 126    | 492  |
| Mov Cap-2 Maneuver       | -      | -    | -      | -     | 126    | -    |
| Stage 1                  | -      | -    | -      | -     | 308    | -    |
| Stage 2                  | -      | -    | -      | -     | 423    | -    |
|                          |        |      |        |       |        |      |
|                          |        |      |        |       |        |      |
| Approach                 | EB     |      | WB     |       | NB     |      |
| HCM Control Delay, s     | 0      |      | 0.3    |       | 20.9   |      |
| HCM LOS                  |        |      |        |       | C      |      |
|                          |        |      |        |       |        |      |
|                          |        |      |        |       |        |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBT  | EBR    | WBL   | WBT    |      |
| Capacity (veh/h)         | 269    | -    | -      | 459   | -      |      |
| HCM Lane V/C Ratio       | 0.161  | -    | -      | 0.061 | -      |      |
| HCM Control Delay (s)    | 20.9   | -    | -      | 13.3  | -      |      |
| HCM Lane LOS             | C      | -    | -      | B     | -      |      |
| HCM 95th %tile Q(veh)    | 0.6    | -    | -      | 0.2   | -      |      |

**\*\* Project Grading \*\***

E+P PM

Fri Nov 8, 2019 11:54:08

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #1 Myrtle / Longden

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.923

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 113 Level Of Service: E

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound  |     |     | West Bound  |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L           | T   | R   | L           | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Prot+Permit |     |     | Prot+Permit |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include     |     |     | Include     |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 85   | 688  | 48   | 313  | 1008 | 61   | 83   | 576  | 80   | 21   | 359  | 258  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 85   | 688  | 48   | 313  | 1008 | 61   | 83   | 576  | 80   | 21   | 359  | 258  |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 85   | 688  | 48   | 313  | 1008 | 61   | 83   | 576  | 80   | 21   | 359  | 258  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 88   | 709  | 49   | 322  | 1038 | 63   | 85   | 593  | 82   | 22   | 370  | 266  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 88   | 709  | 49   | 322  | 1038 | 63   | 85   | 593  | 82   | 22   | 370  | 266  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 88   | 709  | 49   | 322  | 1038 | 63   | 85   | 593  | 82   | 22   | 370  | 266  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.87 | 0.13 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.16 | 0.84 |
| Final Sat.: | 1600 | 2991 | 209  | 1600 | 3200 | 1600 | 1600 | 1600 | 1600 | 1600 | 1862 | 1338 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.05 | 0.24 | 0.24 | 0.20 | 0.32 | 0.04 | 0.05 | 0.37 | 0.05 | 0.01 | 0.20 | 0.20 |
| Crit Moves: | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** |

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**\*\* Project Grading \*\***

E+P PM

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #2 Myrtle/Peck / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.940

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 125 Level Of Service: E

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 2   | 0           | 1   |     | 1          | 0   | 2   | 0          | 1   |     |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 188  | 695  | 165  | 252  | 668  | 146  | 110  | 1148 | 190  | 93   | 567  | 12   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 188  | 695  | 165  | 252  | 668  | 146  | 110  | 1148 | 190  | 93   | 567  | 12   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 188  | 695  | 165  | 252  | 668  | 146  | 110  | 1148 | 190  | 93   | 567  | 12   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| PHF Volume:  | 200  | 738  | 175  | 268  | 709  | 155  | 117  | 1219 | 202  | 99   | 602  | 13   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 200  | 738  | 175  | 268  | 709  | 155  | 117  | 1219 | 202  | 99   | 602  | 13   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 200  | 738  | 175  | 268  | 709  | 155  | 117  | 1219 | 202  | 99   | 602  | 13   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3134 | 66   |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.12 | 0.23 | 0.11 | 0.17 | 0.22 | 0.10 | 0.07 | 0.38 | 0.13 | 0.06 | 0.19 | 0.19 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

E+P PM

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #3 Longden / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.881

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 91 Level Of Service: D

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 747  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 747  | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 748  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 748  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 748  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 748  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 1.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 1600 | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.29 | 0.00 | 0.01 | 0.01 | 0.49 | 0.00 | 0.00 | 0.23 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      |      | **** |      |      | **** |      |

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**\*\* Project Grading \*\***

E+P PM

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #4 Live Oak / Arrow (West)

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.694

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 49 Level Of Service: B

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 798  | 0    | 152  | 0    | 0    | 0    | 0    | 721  | 0    | 342  | 620  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 798  | 0    | 152  | 0    | 0    | 0    | 0    | 721  | 0    | 342  | 620  | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 7    | 1    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 798  | 0    | 152  | 0    | 0    | 0    | 0    | 721  | 0    | 349  | 621  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| PHF Volume:  | 812  | 0    | 155  | 0    | 0    | 0    | 0    | 733  | 0    | 355  | 632  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 812  | 0    | 155  | 0    | 0    | 0    | 0    | 733  | 0    | 355  | 632  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 812  | 0    | 155  | 0    | 0    | 0    | 0    | 733  | 0    | 355  | 632  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 2.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 0    | 3200 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.25 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.23 | 0.00 | 0.11 | 0.20 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

E+P PM

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #15 Avenida Barbosa/Dwy A / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.695

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 49 Level Of Service: B

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 649  | 0    | 413  | 225  | 648  | 0    | 0    | 550  | 231  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 649  | 0    | 413  | 225  | 648  | 0    | 0    | 550  | 231  |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 9    | 2    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 649  | 0    | 413  | 234  | 650  | 0    | 0    | 550  | 231  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 0    | 0    | 0    | 670  | 0    | 427  | 242  | 671  | 0    | 0    | 568  | 239  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 670  | 0    | 427  | 242  | 671  | 0    | 0    | 568  | 239  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 670  | 0    | 427  | 242  | 671  | 0    | 0    | 568  | 239  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.21 | 0.00 | 0.27 | 0.15 | 0.21 | 0.00 | 0.00 | 0.18 | 0.15 |
| Crit Moves: |      |      |      | **** |      | **** |      |      |      |      | **** |      |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #26 Rivergrade / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 1.042  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 180 Level Of Service: F

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |
| Lanes:      | 1           | 0   | 1   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   | 2 | 0 | 1 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 166  | 201  | 498  | 26   | 49   | 69   | 40   | 1519 | 21   | 122  | 731  | 19   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 166  | 201  | 498  | 26   | 49   | 69   | 40   | 1519 | 21   | 122  | 731  | 19   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 166  | 201  | 498  | 26   | 49   | 70   | 40   | 1519 | 21   | 122  | 731  | 19   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| PHF Volume:  | 178  | 215  | 534  | 28   | 53   | 75   | 43   | 1628 | 23   | 131  | 783  | 20   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 178  | 215  | 534  | 28   | 53   | 75   | 43   | 1628 | 23   | 131  | 783  | 20   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 178  | 215  | 534  | 28   | 53   | 75   | 43   | 1628 | 23   | 131  | 783  | 20   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.11 | 0.13 | 0.33 | 0.02 | 0.02 | 0.05 | 0.03 | 0.51 | 0.01 | 0.08 | 0.24 | 0.01 |
| Crit Moves: | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #27 Stewart / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.795

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 66 Level Of Service: C

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Permitted   |     |     | Permitted   |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 1   | 1          | 0   | 2   | 0          | 1   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 54   | 27   | 7    | 36   | 114  | 8    | 39   | 1759 | 305  | 33   | 721  | 10   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 54   | 27   | 7    | 36   | 114  | 8    | 39   | 1759 | 305  | 33   | 721  | 10   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 54   | 27   | 7    | 36   | 114  | 8    | 39   | 1759 | 305  | 33   | 721  | 10   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 56   | 28   | 7    | 37   | 117  | 8    | 40   | 1812 | 314  | 34   | 743  | 10   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 56   | 28   | 7    | 37   | 117  | 8    | 40   | 1812 | 314  | 34   | 743  | 10   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 56   | 28   | 7    | 37   | 117  | 8    | 40   | 1812 | 314  | 34   | 743  | 10   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.61 | 0.31 | 0.08 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 982  | 491  | 127  | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.03 | 0.06 | 0.06 | 0.02 | 0.07 | 0.01 | 0.03 | 0.57 | 0.20 | 0.02 | 0.23 | 0.01 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #29 Arrow / Live Oak (East)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.897

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 99 Level Of Service: D

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 1099 | 0    | 135  | 43   | 1375 | 0    | 0    | 867  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 1099 | 0    | 135  | 43   | 1375 | 0    | 0    | 867  | 0    |
| Added Vol:   | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 1100 | 0    | 135  | 43   | 1375 | 0    | 0    | 867  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 0    | 0    | 0    | 1134 | 0    | 139  | 44   | 1418 | 0    | 0    | 894  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 1134 | 0    | 139  | 44   | 1418 | 0    | 0    | 894  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 1134 | 0    | 139  | 44   | 1418 | 0    | 0    | 894  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.35 | 0.00 | 0.09 | 0.03 | 0.44 | 0.00 | 0.00 | 0.28 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      |      | **** |      |      | **** |      |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #30 Maine / Arrow

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.816

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: D

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |   |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |   |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 1   | 1   | 0 | 3 | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 256  | 0    | 63   | 0    | 0    | 0    | 0    | 1920 | 564  | 72   | 1130 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 256  | 0    | 63   | 0    | 0    | 0    | 0    | 1920 | 564  | 72   | 1130 | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 256  | 0    | 63   | 0    | 0    | 0    | 0    | 1921 | 564  | 72   | 1130 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| PHF Volume:  | 269  | 0    | 66   | 0    | 0    | 0    | 0    | 2022 | 594  | 76   | 1189 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 269  | 0    | 66   | 0    | 0    | 0    | 0    | 2022 | 594  | 76   | 1189 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 269  | 0    | 66   | 0    | 0    | 0    | 0    | 2022 | 594  | 76   | 1189 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.00 | 1.00 | 3.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 1600 | 1600 | 4800 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.08 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.63 | 0.37 | 0.05 | 0.25 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      |      | **** |      |      |      |      |

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**\*\* Project Grading \*\***

E+P PM

Fri Nov 8, 2019 11:54:08

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #15 Avenida Barbosa/Dwy A / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.695

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 49 Level Of Service: B

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 649  | 0    | 413  | 225  | 648  | 0    | 0    | 550  | 231  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 649  | 0    | 413  | 225  | 648  | 0    | 0    | 550  | 231  |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 9    | 2    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 649  | 0    | 413  | 234  | 650  | 0    | 0    | 550  | 231  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 0    | 0    | 0    | 670  | 0    | 427  | 242  | 671  | 0    | 0    | 568  | 239  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 670  | 0    | 427  | 242  | 671  | 0    | 0    | 568  | 239  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 670  | 0    | 427  | 242  | 671  | 0    | 0    | 568  | 239  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.21 | 0.00 | 0.27 | 0.15 | 0.21 | 0.00 | 0.00 | 0.18 | 0.15 |
| Crit Moves: |      |      |      | **** |      | **** |      |      |      |      | **** |      |

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| Intersection               |        |                        |        |                            |        |       |        |                                |       |      |      |       |  |
|----------------------------|--------|------------------------|--------|----------------------------|--------|-------|--------|--------------------------------|-------|------|------|-------|--|
| Int Delay, s/veh           | 32.1   |                        |        |                            |        |       |        |                                |       |      |      |       |  |
| Movement                   | EBL    | EBT                    | EBR    | WBL                        | WBT    | WBR   | NBL    | NBT                            | NBR   | SBL  | SBT  | SBR   |  |
| Lane Configurations        |        | ↑↑                     |        |                            | ↑↑     |       |        |                                | ↗     |      |      | ↗     |  |
| Traffic Vol, veh/h         | 0      | 1177                   | 0      | 0                          | 1009   | 0     | 0      | 0                              | 646   | 0    | 0    | 572   |  |
| Future Vol, veh/h          | 0      | 1177                   | 0      | 0                          | 1009   | 0     | 0      | 0                              | 646   | 0    | 0    | 572   |  |
| Conflicting Peds, #/hr     | 0      | 0                      | 0      | 0                          | 0      | 0     | 0      | 0                              | 0     | 0    | 0    | 0     |  |
| Sign Control               | Free   | Free                   | Free   | Free                       | Free   | Free  | Stop   | Stop                           | Stop  | Stop | Stop | Stop  |  |
| RT Channelized             | -      | -                      | None   | -                          | -      | None  | -      | -                              | Yield | -    | -    | Yield |  |
| Storage Length             | -      | -                      | -      | -                          | -      | -     | -      | -                              | 0     | -    | -    | 0     |  |
| Veh in Median Storage, #   | -      | 0                      | -      | -                          | 0      | -     | -      | 0                              | -     | -    | 0    | -     |  |
| Grade, %                   | -      | 0                      | -      | -                          | 0      | -     | -      | 0                              | -     | -    | 0    | -     |  |
| Peak Hour Factor           | 97     | 97                     | 97     | 97                         | 97     | 97    | 97     | 97                             | 97    | 97   | 97   | 97    |  |
| Heavy Vehicles, %          | 0      | 0                      | 0      | 0                          | 0      | 0     | 0      | 0                              | 0     | 0    | 0    | 0     |  |
| Mvmt Flow                  | 0      | 1213                   | 0      | 0                          | 1040   | 0     | 0      | 0                              | 666   | 0    | 0    | 590   |  |
|                            |        |                        |        |                            |        |       |        |                                |       |      |      |       |  |
| Major/Minor                | Major1 |                        | Major2 |                            | Minor1 |       | Minor2 |                                |       |      |      |       |  |
| Conflicting Flow All       | -      | 0                      | -      | -                          | -      | 0     | -      | -                              | 607   | -    | -    | 520   |  |
| Stage 1                    | -      | -                      | -      | -                          | -      | -     | -      | -                              | -     | -    | -    | -     |  |
| Stage 2                    | -      | -                      | -      | -                          | -      | -     | -      | -                              | -     | -    | -    | -     |  |
| Critical Hdwy              | -      | -                      | -      | -                          | -      | -     | -      | -                              | 5.5   | -    | -    | 5.5   |  |
| Critical Hdwy Stg 1        | -      | -                      | -      | -                          | -      | -     | -      | -                              | -     | -    | -    | -     |  |
| Critical Hdwy Stg 2        | -      | -                      | -      | -                          | -      | -     | -      | -                              | -     | -    | -    | -     |  |
| Follow-up Hdwy             | -      | -                      | -      | -                          | -      | -     | -      | -                              | 3.3   | -    | -    | 3.3   |  |
| Pot Cap-1 Maneuver         | 0      | -                      | 0      | 0                          | -      | 0     | 0      | 0                              | ~ 563 | 0    | 0    | 620   |  |
| Stage 1                    | 0      | -                      | 0      | 0                          | -      | 0     | 0      | 0                              | -     | 0    | 0    | -     |  |
| Stage 2                    | 0      | -                      | 0      | 0                          | -      | 0     | 0      | 0                              | -     | 0    | 0    | -     |  |
| Platoon blocked, %         |        | -                      |        |                            | -      |       |        |                                |       |      |      |       |  |
| Mov Cap-1 Maneuver         | -      | -                      | -      | -                          | -      | -     | -      | -                              | ~ 563 | -    | -    | 620   |  |
| Mov Cap-2 Maneuver         | -      | -                      | -      | -                          | -      | -     | -      | -                              | -     | -    | -    | -     |  |
| Stage 1                    | -      | -                      | -      | -                          | -      | -     | -      | -                              | -     | -    | -    | -     |  |
| Stage 2                    | -      | -                      | -      | -                          | -      | -     | -      | -                              | -     | -    | -    | -     |  |
|                            |        |                        |        |                            |        |       |        |                                |       |      |      |       |  |
| Approach                   | EB     |                        | WB     |                            | NB     |       | SB     |                                |       |      |      |       |  |
| HCM Control Delay, s       | 0      |                        | 0      |                            | 123.9  |       | 50.9   |                                |       |      |      |       |  |
| HCM LOS                    |        |                        |        |                            | F      |       | F      |                                |       |      |      |       |  |
|                            |        |                        |        |                            |        |       |        |                                |       |      |      |       |  |
| Minor Lane/Major Mvmt      | NBLn1  |                        | EBT    | WBT                        |        | SBLn1 |        |                                |       |      |      |       |  |
| Capacity (veh/h)           | 563    |                        | -      | -                          |        | 620   |        |                                |       |      |      |       |  |
| HCM Lane V/C Ratio         | 1.183  |                        | -      | -                          |        | 0.951 |        |                                |       |      |      |       |  |
| HCM Control Delay (s)      | 123.9  |                        | -      | -                          |        | 50.9  |        |                                |       |      |      |       |  |
| HCM Lane LOS               | F      |                        | -      | -                          |        | F     |        |                                |       |      |      |       |  |
| HCM 95th %tile Q(veh)      | 23.5   |                        | -      | -                          |        | 13.1  |        |                                |       |      |      |       |  |
| Notes                      |        |                        |        |                            |        |       |        |                                |       |      |      |       |  |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |        | +: Computation Not Defined |        |       |        | *: All major volume in platoon |       |      |      |       |  |

**\*\* Project Grading \*\***

E+P PM

Fri Nov 8, 2019 11:08:40

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #26 Rivergrade / Live Oak

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|                  |     |                          |         |
|------------------|-----|--------------------------|---------|
| Cycle (sec):     | 100 | Critical Vol./Cap.(X):   | 1.042   |
| Loss Time (sec): | 10  | Average Delay (sec/veh): | xxxxxxx |
| Optimal Cycle:   | 180 | Level Of Service:        | F       |

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |
| Lanes:      | 1           | 0   | 1   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   | 2 | 0 | 1 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 166  | 201  | 498  | 26   | 49   | 69   | 40   | 1519 | 21   | 122  | 731  | 19   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 166  | 201  | 498  | 26   | 49   | 69   | 40   | 1519 | 21   | 122  | 731  | 19   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 166  | 201  | 498  | 26   | 49   | 70   | 40   | 1519 | 21   | 122  | 731  | 19   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| PHF Volume:  | 178  | 215  | 534  | 28   | 53   | 75   | 43   | 1628 | 23   | 131  | 783  | 20   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 178  | 215  | 534  | 28   | 53   | 75   | 43   | 1628 | 23   | 131  | 783  | 20   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 178  | 215  | 534  | 28   | 53   | 75   | 43   | 1628 | 23   | 131  | 783  | 20   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.11 | 0.13 | 0.33 | 0.02 | 0.02 | 0.05 | 0.03 | 0.51 | 0.01 | 0.08 | 0.24 | 0.01 |
| Crit Moves: | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** |

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**\*\* Project Grading \*\***

E+P PM

Fri Nov 8, 2019 11:08:40

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #27 Stewart / Live Oak

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.795

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 66 Level Of Service: C

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Permitted   |     |     | Permitted   |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 1   | 1          | 0   | 2   | 0          | 1   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 54   | 27   | 7    | 36   | 114  | 8    | 39   | 1759 | 305  | 33   | 721  | 10   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 54   | 27   | 7    | 36   | 114  | 8    | 39   | 1759 | 305  | 33   | 721  | 10   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 54   | 27   | 7    | 36   | 114  | 8    | 39   | 1759 | 305  | 33   | 721  | 10   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 56   | 28   | 7    | 37   | 117  | 8    | 40   | 1812 | 314  | 34   | 743  | 10   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 56   | 28   | 7    | 37   | 117  | 8    | 40   | 1812 | 314  | 34   | 743  | 10   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 56   | 28   | 7    | 37   | 117  | 8    | 40   | 1812 | 314  | 34   | 743  | 10   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.61 | 0.31 | 0.08 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 982  | 491  | 127  | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.03 | 0.06 | 0.06 | 0.02 | 0.07 | 0.01 | 0.03 | 0.57 | 0.20 | 0.02 | 0.23 | 0.01 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

E+P PM

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #29 Arrow / Live Oak (East)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.897

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 99 Level Of Service: D

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 1   | 0   | 2          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 1099 | 0    | 135  | 43   | 1375 | 0    | 0    | 867  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 1099 | 0    | 135  | 43   | 1375 | 0    | 0    | 867  | 0    |
| Added Vol:   | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 1100 | 0    | 135  | 43   | 1375 | 0    | 0    | 867  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 0    | 0    | 0    | 1134 | 0    | 139  | 44   | 1418 | 0    | 0    | 894  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 1134 | 0    | 139  | 44   | 1418 | 0    | 0    | 894  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 1134 | 0    | 139  | 44   | 1418 | 0    | 0    | 894  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.35 | 0.00 | 0.09 | 0.03 | 0.44 | 0.00 | 0.00 | 0.28 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      |      | **** |      |      | **** |      |

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## **OPENING YEAR CUMULATIVE (2020) WITH PROJECT**

**\*\* Project Grading \*\***

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour  
-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #1 Myrtle / Longden

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Cycle (sec):           100                           Critical Vol./Cap.(X):           0.811  
Loss Time (sec):       10                           Average Delay (sec/veh):       xxxxxxx  
Optimal Cycle:         69                           Level Of Service:               D

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound  |     |     | West Bound  |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L           | T   | R   | L           | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Prot+Permit |     |     | Prot+Permit |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include     |     |     | Include     |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   |

| Volume Module: |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:      | 120  | 684  | 10   | 153  | 729  | 60   | 52   | 257  | 86   | 122  | 831  | 334  |
| Growth Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse:   | 120  | 684  | 10   | 153  | 729  | 60   | 52   | 257  | 86   | 122  | 831  | 334  |
| Added Vol:     | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 2    | 0    | 0    | 2    | 1    |
| PasserByVol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut:   | 120  | 684  | 10   | 154  | 729  | 60   | 52   | 259  | 86   | 122  | 833  | 335  |
| User Adj:      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:    | 120  | 684  | 10   | 154  | 729  | 60   | 52   | 259  | 86   | 122  | 833  | 335  |
| Reduct Vol:    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol:   | 120  | 684  | 10   | 154  | 729  | 60   | 52   | 259  | 86   | 122  | 833  | 335  |
| PCE Adj:       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume:   | 120  | 684  | 10   | 154  | 729  | 60   | 52   | 259  | 86   | 122  | 833  | 335  |

| Saturation Flow Module: |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:               | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment:             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:                  | 1.00 | 1.97 | 0.03 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.43 | 0.57 |
| Final Sat.:             | 1600 | 3154 | 46   | 1600 | 3200 | 1600 | 1600 | 1600 | 1600 | 1600 | 2282 | 918  |

| Capacity Analysis Module: |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:                  | 0.08 | 0.22 | 0.22 | 0.10 | 0.23 | 0.04 | 0.03 | 0.16 | 0.05 | 0.08 | 0.37 | 0.36 |
| Crit Moves:               | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #2 Myrtle/Peck / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.904

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 102 Level Of Service: E

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 2   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 256  | 702  | 177  | 30   | 612  | 249  | 141  | 605  | 253  | 209  | 1152 | 14   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 256  | 702  | 177  | 30   | 612  | 249  | 141  | 605  | 253  | 209  | 1152 | 14   |
| Added Vol:   | 0    | 0    | 2    | 0    | 0    | 0    | 0    | 1    | 0    | 2    | 1    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 256  | 702  | 179  | 30   | 612  | 249  | 141  | 606  | 253  | 211  | 1153 | 14   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 256  | 702  | 179  | 30   | 612  | 249  | 141  | 606  | 253  | 211  | 1153 | 14   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 256  | 702  | 179  | 30   | 612  | 249  | 141  | 606  | 253  | 211  | 1153 | 14   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 256  | 702  | 179  | 30   | 612  | 249  | 141  | 606  | 253  | 211  | 1153 | 14   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.98 | 0.02 |
| Final Sat.: | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3162 | 38   |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.16 | 0.22 | 0.11 | 0.02 | 0.19 | 0.16 | 0.09 | 0.19 | 0.16 | 0.13 | 0.36 | 0.36 |
| Crit Moves: | **** |      |      |      | **** |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #3 Longden / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.786

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 64 Level Of Service: C

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 5    | 7    | 8    | 416  | 5    | 18   | 28   | 708  | 0    | 10   | 1672 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 5    | 7    | 8    | 416  | 5    | 18   | 28   | 708  | 0    | 10   | 1672 | 0    |
| Added Vol:   | 0    | 0    | 0    | 4    | 0    | 0    | 0    | 4    | 0    | 0    | 3    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 5    | 7    | 8    | 420  | 5    | 18   | 28   | 712  | 0    | 10   | 1675 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 5    | 7    | 8    | 420  | 5    | 18   | 28   | 712  | 0    | 10   | 1675 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 5    | 7    | 8    | 420  | 5    | 18   | 28   | 712  | 0    | 10   | 1675 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 5    | 7    | 8    | 420  | 5    | 18   | 28   | 712  | 0    | 10   | 1675 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.25 | 0.35 | 0.40 | 1.98 | 0.02 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 |
| Final Sat.: | 400  | 560  | 640  | 3162 | 38   | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.01 | 0.01 | 0.01 | 0.13 | 0.13 | 0.01 | 0.02 | 0.22 | 0.00 | 0.01 | 0.52 | 0.00 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour  
-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #4 Live Oak / Arrow (West)

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Cycle (sec): 100 Critical Vol./Cap.(X): 1.046

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | - T | - R | L           | - T | - R | L          | - T | - R | L          | - T | - R |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 1090 | 0    | 313  | 0    | 0    | 0    | 0    | 539  | 0    | 291  | 1931 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 1090 | 0    | 313  | 0    | 0    | 0    | 0    | 539  | 0    | 291  | 1931 | 0    |
| Added Vol:   | 0    | 0    | 109  | 0    | 0    | 0    | 0    | 7    | 0    | 35   | 6    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 1090 | 0    | 422  | 0    | 0    | 0    | 0    | 546  | 0    | 326  | 1937 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 1090 | 0    | 422  | 0    | 0    | 0    | 0    | 546  | 0    | 326  | 1937 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 1090 | 0    | 422  | 0    | 0    | 0    | 0    | 546  | 0    | 326  | 1937 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 1090 | 0    | 422  | 0    | 0    | 0    | 0    | 546  | 0    | 326  | 1937 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 2.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 0    | 3200 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.34 | 0.00 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.10 | 0.61 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      | **** |      |      | **** |      |      |

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| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 2.6    |        |      |        |      |      |
| Movement                 | EBT    | EBR    | WBL  | WBT    | NBL  | NBR  |
| Lane Configurations      | ↑↑↑    |        | ↘    | ↑↑     | ↘    |      |
| Traffic Vol, veh/h       | 1013   | 74     | 70   | 1402   | 30   | 46   |
| Future Vol, veh/h        | 1013   | 74     | 70   | 1402   | 30   | 46   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free   | Free | Free   | Stop | Stop |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | 150  | -      | 0    | -    |
| Veh in Median Storage, # | 0      | -      | -    | 0      | 0    | -    |
| Grade, %                 | 0      | -      | -    | 0      | 0    | -    |
| Peak Hour Factor         | 97     | 97     | 97   | 97     | 97   | 97   |
| Heavy Vehicles, %        | 0      | 0      | 0    | 0      | 0    | 0    |
| Mvmt Flow                | 1044   | 76     | 72   | 1445   | 31   | 47   |
|                          |        |        |      |        |      |      |
| Major/Minor              | Major1 | Major2 |      | Minor1 |      |      |
| Conflicting Flow All     | 0      | 0      | 1120 | 0      | 1949 | 560  |
| Stage 1                  | -      | -      | -    | -      | 1082 | -    |
| Stage 2                  | -      | -      | -    | -      | 867  | -    |
| Critical Hdwy            | -      | -      | 5.3  | -      | 6.25 | 7.1  |
| Critical Hdwy Stg 1      | -      | -      | -    | -      | 6.6  | -    |
| Critical Hdwy Stg 2      | -      | -      | -    | -      | 5.8  | -    |
| Follow-up Hdwy           | -      | -      | 3.1  | -      | 3.65 | 3.9  |
| Pot Cap-1 Maneuver       | -      | -      | 348  | -      | 77   | 408  |
| Stage 1                  | -      | -      | -    | -      | 223  | -    |
| Stage 2                  | -      | -      | -    | -      | 367  | -    |
| Platoon blocked, %       | -      | -      |      | -      |      |      |
| Mov Cap-1 Maneuver       | -      | -      | 348  | -      | 61   | 408  |
| Mov Cap-2 Maneuver       | -      | -      | -    | -      | 61   | -    |
| Stage 1                  | -      | -      | -    | -      | 223  | -    |
| Stage 2                  | -      | -      | -    | -      | 291  | -    |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Approach                 | EB     | WB     |      | NB     |      |      |
| HCM Control Delay, s     | 0      | 0.9    |      | 71.9   |      |      |
| HCM LOS                  | F      |        |      |        |      |      |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBT    | EBR  | WBL    | WBT  |      |
| Capacity (veh/h)         | 126    | -      | -    | 348    | -    |      |
| HCM Lane V/C Ratio       | 0.622  | -      | -    | 0.207  | -    |      |
| HCM Control Delay (s)    | 71.9   | -      | -    | 18     | -    |      |
| HCM Lane LOS             | F      | -      | -    | C      | -    |      |
| HCM 95th %tile Q(veh)    | 3.2    | -      | -    | 0.8    | -    |      |



**\*\* Project Grading \*\***

OYC 2020 WP AM

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour  
-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #15 Avenida Barbosa/Dwy A / Arrow

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Cycle (sec): 100 Critical Vol./Cap.(X): 1.108

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 1   | 0   | 2          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 220  | 0    | 194  | 334  | 518  | 0    | 0    | 2038 | 698  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 220  | 0    | 194  | 334  | 518  | 0    | 0    | 2038 | 698  |
| Added Vol:   | 0    | 0    | 0    | 94   | 0    | 10   | 55   | 42   | 0    | 0    | 0    | 95   |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 314  | 0    | 204  | 389  | 560  | 0    | 0    | 2038 | 793  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 314  | 0    | 204  | 389  | 560  | 0    | 0    | 2038 | 793  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 314  | 0    | 204  | 389  | 560  | 0    | 0    | 2038 | 793  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 314  | 0    | 204  | 389  | 560  | 0    | 0    | 2038 | 793  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.13 | 0.24 | 0.17 | 0.00 | 0.00 | 0.64 | 0.50 |
| Crit Moves: |      |      |      |      |      | **** | **** |      |      |      | **** |      |

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| Intersection               |        |                        |        |      |                            |      |          |      |                                |      |      |       |
|----------------------------|--------|------------------------|--------|------|----------------------------|------|----------|------|--------------------------------|------|------|-------|
| Int Delay, s/veh           | 89.9   |                        |        |      |                            |      |          |      |                                |      |      |       |
| Movement                   | EBL    | EBT                    | EBR    | WBL  | WBT                        | WBR  | NBL      | NBT  | NBR                            | SBL  | SBT  | SBR   |
| Lane Configurations        |        | ↑↑                     |        |      | ↑↑                         |      |          |      | ↗                              |      |      | ↗     |
| Traffic Vol, veh/h         | 0      | 366                    | 0      | 0    | 1578                       | 0    | 0        | 0    | 666                            | 0    | 0    | 709   |
| Future Vol, veh/h          | 0      | 366                    | 0      | 0    | 1578                       | 0    | 0        | 0    | 666                            | 0    | 0    | 709   |
| Conflicting Peds, #/hr     | 0      | 0                      | 0      | 0    | 0                          | 0    | 0        | 0    | 0                              | 0    | 0    | 0     |
| Sign Control               | Free   | Free                   | Free   | Free | Free                       | Free | Stop     | Stop | Stop                           | Stop | Stop | Stop  |
| RT Channelized             | -      | -                      | None   | -    | -                          | None | -        | -    | Yield                          | -    | -    | Yield |
| Storage Length             | -      | -                      | -      | -    | -                          | -    | -        | -    | 0                              | -    | -    | 0     |
| Veh in Median Storage, #   | -      | 0                      | -      | -    | 0                          | -    | -        | 0    | -                              | -    | 0    | -     |
| Grade, %                   | -      | 0                      | -      | -    | 0                          | -    | -        | 0    | -                              | -    | 0    | -     |
| Peak Hour Factor           | 92     | 92                     | 92     | 92   | 92                         | 92   | 92       | 92   | 92                             | 92   | 92   | 92    |
| Heavy Vehicles, %          | 0      | 0                      | 0      | 0    | 0                          | 0    | 0        | 0    | 0                              | 0    | 0    | 0     |
| Mvmt Flow                  | 0      | 398                    | 0      | 0    | 1715                       | 0    | 0        | 0    | 724                            | 0    | 0    | 771   |
|                            |        |                        |        |      |                            |      |          |      |                                |      |      |       |
| Major/Minor                | Major1 |                        | Major2 |      | Minor1                     |      | Minor2   |      |                                |      |      |       |
| Conflicting Flow All       | -      | 0                      | -      | -    | -                          | 0    | -        | -    | 199                            | -    | -    | 858   |
| Stage 1                    | -      | -                      | -      | -    | -                          | -    | -        | -    | -                              | -    | -    | -     |
| Stage 2                    | -      | -                      | -      | -    | -                          | -    | -        | -    | -                              | -    | -    | -     |
| Critical Hdwy              | -      | -                      | -      | -    | -                          | -    | -        | -    | 5.5                            | -    | -    | 5.5   |
| Critical Hdwy Stg 1        | -      | -                      | -      | -    | -                          | -    | -        | -    | -                              | -    | -    | -     |
| Critical Hdwy Stg 2        | -      | -                      | -      | -    | -                          | -    | -        | -    | -                              | -    | -    | -     |
| Follow-up Hdwy             | -      | -                      | -      | -    | -                          | -    | -        | -    | 3.3                            | -    | -    | 3.3   |
| Pot Cap-1 Maneuver         | 0      | -                      | 0      | 0    | -                          | 0    | 0        | 0    | 881                            | 0    | 0    | ~ 425 |
| Stage 1                    | 0      | -                      | 0      | 0    | -                          | 0    | 0        | 0    | -                              | 0    | 0    | -     |
| Stage 2                    | 0      | -                      | 0      | 0    | -                          | 0    | 0        | 0    | -                              | 0    | 0    | -     |
| Platoon blocked, %         |        | -                      |        |      | -                          |      |          |      |                                |      |      |       |
| Mov Cap-1 Maneuver         | -      | -                      | -      | -    | -                          | -    | -        | -    | 881                            | -    | -    | ~ 425 |
| Mov Cap-2 Maneuver         | -      | -                      | -      | -    | -                          | -    | -        | -    | -                              | -    | -    | -     |
| Stage 1                    | -      | -                      | -      | -    | -                          | -    | -        | -    | -                              | -    | -    | -     |
| Stage 2                    | -      | -                      | -      | -    | -                          | -    | -        | -    | -                              | -    | -    | -     |
|                            |        |                        |        |      |                            |      |          |      |                                |      |      |       |
| Approach                   | EB     |                        | WB     |      | NB                         |      | SB       |      |                                |      |      |       |
| HCM Control Delay, s       | 0      |                        | 0      |      | 24.8                       |      | \$ 397.5 |      |                                |      |      |       |
| HCM LOS                    |        |                        |        |      | C                          |      | F        |      |                                |      |      |       |
|                            |        |                        |        |      |                            |      |          |      |                                |      |      |       |
| Minor Lane/Major Mvmt      | NBLn1  |                        | EBT    |      | WBT                        |      | SBLn1    |      |                                |      |      |       |
| Capacity (veh/h)           | 881    |                        | -      |      | -                          |      | 425      |      |                                |      |      |       |
| HCM Lane V/C Ratio         | 0.822  |                        | -      |      | -                          |      | 1.813    |      |                                |      |      |       |
| HCM Control Delay (s)      | 24.8   |                        | -      |      | -                          |      | \$ 397.5 |      |                                |      |      |       |
| HCM Lane LOS               | C      |                        | -      |      | -                          |      | F        |      |                                |      |      |       |
| HCM 95th %tile Q(veh)      | 9.4    |                        | -      |      | -                          |      | 49.1     |      |                                |      |      |       |
| Notes                      |        |                        |        |      |                            |      |          |      |                                |      |      |       |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |        |      | +: Computation Not Defined |      |          |      | *: All major volume in platoon |      |      |       |

**\*\* Project Grading \*\***

OYC 2020 WP AM

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour  
-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #26 Rivergrade / Live Oak

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|                  |     |                          |        |
|------------------|-----|--------------------------|--------|
| Cycle (sec):     | 100 | Critical Vol./Cap.(X):   | 0.725  |
| Loss Time (sec): | 10  | Average Delay (sec/veh): | xxxxxx |
| Optimal Cycle:   | 53  | Level Of Service:        | C      |

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |
| Lanes:      | 1           | 0   | 1   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   | 2 | 0 | 1 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 73   | 167  | 209  | 26   | 441  | 105  | 98   | 784  | 90   | 294  | 1200 | 30   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 73   | 167  | 209  | 26   | 441  | 105  | 98   | 784  | 90   | 294  | 1200 | 30   |
| Added Vol:   | 2    | 0    | 0    | 0    | 2    | 5    | 0    | 0    | 0    | 0    | 11   | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 75   | 167  | 209  | 26   | 443  | 110  | 98   | 784  | 90   | 294  | 1211 | 30   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 75   | 167  | 209  | 26   | 443  | 110  | 98   | 784  | 90   | 294  | 1211 | 30   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 75   | 167  | 209  | 26   | 443  | 110  | 98   | 784  | 90   | 294  | 1211 | 30   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 75   | 167  | 209  | 26   | 443  | 110  | 98   | 784  | 90   | 294  | 1211 | 30   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.05 | 0.10 | 0.13 | 0.02 | 0.14 | 0.07 | 0.06 | 0.25 | 0.06 | 0.18 | 0.38 | 0.02 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour  
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #27 Stewart / Live Oak

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.925

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 114 Level Of Service: E

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| Approach:   | North Bound |     |        | South Bound |     |       | East Bound |     |       | West Bound |     |       |
|-------------|-------------|-----|--------|-------------|-----|-------|------------|-----|-------|------------|-----|-------|
| Movement:   | L           | T   | R      | L           | T   | R     | L          | T   | R     | L          | T   | R     |
| Control:    | Permitted   |     |        | Permitted   |     |       | Permitted  |     |       | Permitted  |     |       |
| Rights:     | Include     |     |        | Include     |     |       | Include    |     |       | Include    |     |       |
| Min. Green: | 0           | 0   | 0      | 0           | 0   | 0     | 0          | 0   | 0     | 0          | 0   | 0     |
| Y+R:        | 4.0         | 4.0 | 4.0    | 4.0         | 4.0 | 4.0   | 4.0        | 4.0 | 4.0   | 4.0        | 4.0 | 4.0   |
| Lanes:      | 0           | 0   | 1! 0 0 | 1           | 0   | 1 0 1 | 1          | 0   | 2 0 1 | 1          | 0   | 2 0 1 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 270  | 120  | 40   | 13   | 37   | 53   | 14   | 853  | 33   | 29   | 1711 | 29   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 270  | 120  | 40   | 13   | 37   | 53   | 14   | 853  | 33   | 29   | 1711 | 29   |
| Added Vol:   | 1    | 0    | 0    | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 10   | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 271  | 120  | 40   | 14   | 38   | 53   | 14   | 853  | 33   | 29   | 1721 | 29   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 271  | 120  | 40   | 14   | 38   | 53   | 14   | 853  | 33   | 29   | 1721 | 29   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 271  | 120  | 40   | 14   | 38   | 53   | 14   | 853  | 33   | 29   | 1721 | 29   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 271  | 120  | 40   | 14   | 38   | 53   | 14   | 853  | 33   | 29   | 1721 | 29   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.63 | 0.28 | 0.09 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1006 | 445  | 148  | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.17 | 0.27 | 0.27 | 0.01 | 0.02 | 0.03 | 0.01 | 0.27 | 0.02 | 0.02 | 0.54 | 0.02 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

OYC 2020 WP AM

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour  
-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #29 Arrow / Live Oak (East)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.745

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 56 Level Of Service: C

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 1   | 0   | 2          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 377  | 0    | 86   | 146  | 905  | 0    | 0    | 1381 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 377  | 0    | 86   | 146  | 905  | 0    | 0    | 1381 | 0    |
| Added Vol:   | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 0    | 8    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 384  | 0    | 86   | 146  | 905  | 0    | 0    | 1389 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 384  | 0    | 86   | 146  | 905  | 0    | 0    | 1389 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 384  | 0    | 86   | 146  | 905  | 0    | 0    | 1389 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 384  | 0    | 86   | 146  | 905  | 0    | 0    | 1389 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.05 | 0.09 | 0.28 | 0.00 | 0.00 | 0.43 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      | **** |      |      |      | **** |      |

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**\*\* Project Grading \*\***

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour  
-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #30 Maine / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.887

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 94 Level Of Service: D

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |   |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |   |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 1   | 1   | 0 | 3 | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 697  | 0    | 114  | 0    | 0    | 0    | 0    | 1194 | 208  | 69   | 2722 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 697  | 0    | 114  | 0    | 0    | 0    | 0    | 1194 | 208  | 69   | 2722 | 0    |
| Added Vol:   | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 6    | 1    | 0    | 7    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 698  | 0    | 114  | 0    | 0    | 0    | 0    | 1200 | 209  | 69   | 2729 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 698  | 0    | 114  | 0    | 0    | 0    | 0    | 1200 | 209  | 69   | 2729 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 698  | 0    | 114  | 0    | 0    | 0    | 0    | 1200 | 209  | 69   | 2729 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 698  | 0    | 114  | 0    | 0    | 0    | 0    | 1200 | 209  | 69   | 2729 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.00 | 1.00 | 3.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 1600 | 1600 | 4800 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.22 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.38 | 0.13 | 0.04 | 0.57 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

OYC 2020 WP PM

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour  
-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 Myrtle / Longden

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.956

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 139 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound  |     |     | West Bound  |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L           | T   | R   | L           | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Prot+Permit |     |     | Prot+Permit |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include     |     |     | Include     |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 390  | 283  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 390  | 283  |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 390  | 283  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 390  | 283  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 390  | 283  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 390  | 283  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.87 | 0.13 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.16 | 0.84 |
| Final Sat.: | 1600 | 2995 | 205  | 1600 | 3200 | 1600 | 1600 | 1600 | 1600 | 1600 | 1854 | 1346 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.06 | 0.24 | 0.24 | 0.21 | 0.33 | 0.04 | 0.06 | 0.39 | 0.05 | 0.01 | 0.21 | 0.21 |
| Crit Moves: | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Myrtle/Peck / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.955

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 138 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 2   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 109  | 641  | 13   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 109  | 641  | 13   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 109  | 641  | 13   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 109  | 641  | 13   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 109  | 641  | 13   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 109  | 641  | 13   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3136 | 64   |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.13 | 0.23 | 0.12 | 0.17 | 0.22 | 0.10 | 0.07 | 0.39 | 0.13 | 0.07 | 0.20 | 0.20 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #3 Longden / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.965  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 148 Level Of Service: E

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 1   | 1          | 0   | 2   | 0          | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 847  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 847  | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 848  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 848  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 848  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 848  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 1.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 1600 | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.32 | 0.00 | 0.01 | 0.01 | 0.55 | 0.00 | 0.00 | 0.27 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      |      | **** |      |      | **** |      |

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**\*\* Project Grading \*\***

OYC 2020 WP PM

Fri Nov 8, 2019 11:09:19

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour  
-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #4 Live Oak / Arrow (West)

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Cycle (sec): 100 Critical Vol./Cap.(X): 1.818

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 1   | 1          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 905  | 0    | 336  | 0    | 0    | 0    | 0    | 807  | 1990 | 606  | 866  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 905  | 0    | 336  | 0    | 0    | 0    | 0    | 807  | 1990 | 606  | 866  | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 7    | 1    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 905  | 0    | 336  | 0    | 0    | 0    | 0    | 807  | 1990 | 613  | 867  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 905  | 0    | 336  | 0    | 0    | 0    | 0    | 807  | 1990 | 613  | 867  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 905  | 0    | 336  | 0    | 0    | 0    | 0    | 807  | 1990 | 613  | 867  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 905  | 0    | 336  | 0    | 0    | 0    | 0    | 807  | 1990 | 613  | 867  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 2.00 | 2.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 1600 | 1600 | 3200 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.28 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 1.24 | 0.19 | 0.27 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      |      |      | **** | **** |      |      |

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| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 80.6 |      |      |      |      |      |
| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
| Lane Configurations      | ↑↑↑  |      | ↑    | ↑↑   | ↑    |      |
| Traffic Vol, veh/h       | 2647 | 114  | 116  | 1203 | 111  | 170  |
| Future Vol, veh/h        | 2647 | 114  | 116  | 1203 | 111  | 170  |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | 150  | -    | 0    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 96   | 96   | 96   | 96   | 96   | 96   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 2757 | 119  | 121  | 1253 | 116  | 177  |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 2876   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 5.3    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 3.1    |
| Pot Cap-1 Maneuver   | -      | -      | ~ 46   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | ~ 46   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB   | NB       |
|----------------------|----|------|----------|
| HCM Control Delay, s | 0  | 81.4 | \$ 869.5 |
| HCM LOS              |    |      | F        |

| Minor Lane/Major Mvmt | NBLn1    | EBT | EBR | WBL      | WBT |
|-----------------------|----------|-----|-----|----------|-----|
| Capacity (veh/h)      | 107      | -   | -   | ~ 46     | -   |
| HCM Lane V/C Ratio    | 2.736    | -   | -   | 2.627    | -   |
| HCM Control Delay (s) | \$ 869.5 | -   | -   | \$ 925.2 | -   |
| HCM Lane LOS          | F        | -   | -   | F        | -   |
| HCM 95th %tile Q(veh) | 27.2     | -   | -   | 12.9     | -   |

| Notes                      |                        |                            |                                |
|----------------------------|------------------------|----------------------------|--------------------------------|
| ~: Volume exceeds capacity | \$: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

**\*\* Project Grading \*\***

OYC 2020 WP PM

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour  
-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #15 Avenida Barbosa/Dwy A / Arrow

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.876

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 89 Level Of Service: D

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 1   | 0   | 2          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 698  | 0    | 448  | 251  | 891  | 0    | 0    | 1025 | 253  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 698  | 0    | 448  | 251  | 891  | 0    | 0    | 1025 | 253  |
| Added Vol:   | 0    | 0    | 0    | 99   | 0    | 11   | 19   | 2    | 0    | 0    | 0    | 90   |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 797  | 0    | 459  | 270  | 893  | 0    | 0    | 1025 | 343  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 797  | 0    | 459  | 270  | 893  | 0    | 0    | 1025 | 343  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 797  | 0    | 459  | 270  | 893  | 0    | 0    | 1025 | 343  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 797  | 0    | 459  | 270  | 893  | 0    | 0    | 1025 | 343  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.29 | 0.17 | 0.28 | 0.00 | 0.00 | 0.32 | 0.21 |
| Crit Moves: |      |      |      | **** |      | **** |      |      |      |      | **** |      |

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| Intersection               |        |                        |      |                            |       |      |        |                                |       |        |      |       |
|----------------------------|--------|------------------------|------|----------------------------|-------|------|--------|--------------------------------|-------|--------|------|-------|
| Int Delay, s/veh           | 88.5   |                        |      |                            |       |      |        |                                |       |        |      |       |
| Movement                   | EBL    | EBT                    | EBR  | WBL                        | WBT   | WBR  | NBL    | NBT                            | NBR   | SBL    | SBT  | SBR   |
| Lane Configurations        |        | ↑↑                     |      |                            | ↑↑    |      |        |                                | ↗     |        |      | ↗     |
| Traffic Vol, veh/h         | 0      | 1310                   | 0    | 0                          | 1166  | 0    | 0      | 0                              | 705   | 0      | 0    | 819   |
| Future Vol, veh/h          | 0      | 1310                   | 0    | 0                          | 1166  | 0    | 0      | 0                              | 705   | 0      | 0    | 819   |
| Conflicting Peds, #/hr     | 0      | 0                      | 0    | 0                          | 0     | 0    | 0      | 0                              | 0     | 0      | 0    | 0     |
| Sign Control               | Free   | Free                   | Free | Free                       | Free  | Free | Stop   | Stop                           | Stop  | Stop   | Stop | Stop  |
| RT Channelized             | -      | -                      | None | -                          | -     | None | -      | -                              | Yield | -      | -    | Yield |
| Storage Length             | -      | -                      | -    | -                          | -     | -    | -      | -                              | 0     | -      | -    | 0     |
| Veh in Median Storage, #   | -      | 0                      | -    | -                          | 0     | -    | -      | 0                              | -     | -      | 0    | -     |
| Grade, %                   | -      | 0                      | -    | -                          | 0     | -    | -      | 0                              | -     | -      | 0    | -     |
| Peak Hour Factor           | 97     | 97                     | 97   | 97                         | 97    | 97   | 97     | 97                             | 97    | 97     | 97   | 97    |
| Heavy Vehicles, %          | 0      | 0                      | 0    | 0                          | 0     | 0    | 0      | 0                              | 0     | 0      | 0    | 0     |
| Mvmt Flow                  | 0      | 1351                   | 0    | 0                          | 1202  | 0    | 0      | 0                              | 727   | 0      | 0    | 844   |
|                            |        |                        |      |                            |       |      |        |                                |       |        |      |       |
| Major/Minor                | Major1 |                        |      | Major2                     |       |      | Minor1 |                                |       | Minor2 |      |       |
| Conflicting Flow All       | -      | 0                      | -    | -                          | -     | 0    | -      | -                              | 676   | -      | -    | 601   |
| Stage 1                    | -      | -                      | -    | -                          | -     | -    | -      | -                              | -     | -      | -    | -     |
| Stage 2                    | -      | -                      | -    | -                          | -     | -    | -      | -                              | -     | -      | -    | -     |
| Critical Hdwy              | -      | -                      | -    | -                          | -     | -    | -      | -                              | 5.5   | -      | -    | 5.5   |
| Critical Hdwy Stg 1        | -      | -                      | -    | -                          | -     | -    | -      | -                              | -     | -      | -    | -     |
| Critical Hdwy Stg 2        | -      | -                      | -    | -                          | -     | -    | -      | -                              | -     | -      | -    | -     |
| Follow-up Hdwy             | -      | -                      | -    | -                          | -     | -    | -      | -                              | 3.3   | -      | -    | 3.3   |
| Pot Cap-1 Maneuver         | 0      | -                      | 0    | 0                          | -     | 0    | 0      | 0                              | ~ 521 | 0      | 0    | ~ 566 |
| Stage 1                    | 0      | -                      | 0    | 0                          | -     | 0    | 0      | 0                              | -     | 0      | 0    | -     |
| Stage 2                    | 0      | -                      | 0    | 0                          | -     | 0    | 0      | 0                              | -     | 0      | 0    | -     |
| Platoon blocked, %         |        | -                      |      |                            | -     |      |        |                                |       |        |      |       |
| Mov Cap-1 Maneuver         | -      | -                      | -    | -                          | -     | -    | -      | -                              | ~ 521 | -      | -    | ~ 566 |
| Mov Cap-2 Maneuver         | -      | -                      | -    | -                          | -     | -    | -      | -                              | -     | -      | -    | -     |
| Stage 1                    | -      | -                      | -    | -                          | -     | -    | -      | -                              | -     | -      | -    | -     |
| Stage 2                    | -      | -                      | -    | -                          | -     | -    | -      | -                              | -     | -      | -    | -     |
|                            |        |                        |      |                            |       |      |        |                                |       |        |      |       |
| Approach                   | EB     |                        | WB   |                            | NB    |      | SB     |                                |       |        |      |       |
| HCM Control Delay, s       | 0      |                        | 0    |                            | 211.4 |      | 250.5  |                                |       |        |      |       |
| HCM LOS                    |        |                        |      |                            | F     |      | F      |                                |       |        |      |       |
|                            |        |                        |      |                            |       |      |        |                                |       |        |      |       |
| Minor Lane/Major Mvmt      | NBLn1  | EBT                    | WBT  | SBLn1                      |       |      |        |                                |       |        |      |       |
| Capacity (veh/h)           | 521    | -                      | -    | 566                        |       |      |        |                                |       |        |      |       |
| HCM Lane V/C Ratio         | 1.395  | -                      | -    | 1.492                      |       |      |        |                                |       |        |      |       |
| HCM Control Delay (s)      | 211.4  | -                      | -    | 250.5                      |       |      |        |                                |       |        |      |       |
| HCM Lane LOS               | F      | -                      | -    | F                          |       |      |        |                                |       |        |      |       |
| HCM 95th %tile Q(veh)      | 33.8   | -                      | -    | 42.3                       |       |      |        |                                |       |        |      |       |
| Notes                      |        |                        |      |                            |       |      |        |                                |       |        |      |       |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |      | +: Computation Not Defined |       |      |        | *: All major volume in platoon |       |        |      |       |

**\*\* Project Grading \*\***

OYC 2020 WP PM

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #26 Rivergrade / Live Oak

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Cycle (sec): 100 Critical Vol./Cap.(X): 1.052

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |
| Lanes:      | 1           | 0   | 1   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   | 2 | 0 | 1 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 186  | 277  | 528  | 27   | 109  | 73   | 42   | 1678 | 35   | 129  | 861  | 20   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 186  | 277  | 528  | 27   | 109  | 73   | 42   | 1678 | 35   | 129  | 861  | 20   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 186  | 277  | 528  | 27   | 109  | 74   | 42   | 1678 | 35   | 129  | 861  | 20   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 186  | 277  | 528  | 27   | 109  | 74   | 42   | 1678 | 35   | 129  | 861  | 20   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 186  | 277  | 528  | 27   | 109  | 74   | 42   | 1678 | 35   | 129  | 861  | 20   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 186  | 277  | 528  | 27   | 109  | 74   | 42   | 1678 | 35   | 129  | 861  | 20   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.12 | 0.17 | 0.33 | 0.02 | 0.03 | 0.05 | 0.03 | 0.52 | 0.02 | 0.08 | 0.27 | 0.01 |
| Crit Moves: | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** |

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**\*\* Project Grading \*\***

OYC 2020 WP PM

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #27 Stewart / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.844  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 78 Level Of Service: D

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Permitted   |     |     | Permitted   |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 1   | 1          | 0   | 2   | 0          | 1   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 68   | 29   | 11   | 38   | 120  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 68   | 29   | 11   | 38   | 120  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 68   | 29   | 11   | 38   | 120  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 68   | 29   | 11   | 38   | 120  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 68   | 29   | 11   | 38   | 120  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 68   | 29   | 11   | 38   | 120  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.63 | 0.27 | 0.10 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1007 | 430  | 163  | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.04 | 0.07 | 0.07 | 0.02 | 0.08 | 0.01 | 0.03 | 0.60 | 0.21 | 0.03 | 0.26 | 0.01 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Grading \*\***

OYC 2020 WP PM

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #29 Arrow / Live Oak (East)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.948

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 132 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 1204 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 1204 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |
| Added Vol:   | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 1205 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 1205 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 1205 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 1205 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.38 | 0.00 | 0.10 | 0.04 | 0.47 | 0.00 | 0.00 | 0.32 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      |      | **** |      |      | **** |      |

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**\*\* Project Grading \*\***

OYC 2020 WP PM

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-----  
The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour  
-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #30 Maine / Arrow

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.464

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: A

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |   |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |   |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 1   | 1   | 0 | 3 | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 0    | 0    | 85   | 1310 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 0    | 0    | 85   | 1310 | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 1    | 0    | 85   | 1310 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 1    | 0    | 85   | 1310 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 1    | 0    | 85   | 1310 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 1    | 0    | 85   | 1310 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.00 | 1.00 | 3.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 1600 | 1600 | 4800 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.09 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.27 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      | **** |      |      |      | **** |      |

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**ATTACHMENT B: INTERSECTION OPERATION ANALYSIS WORKSHEETS: BUILDING  
CONSTRUCTION ACTIVITY**

**E+P**

**\*\* Project Construction \*\***

E+P AM

Fri Nov 8, 2019 12:02:37

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The Park @ Live Oak (JN 11110)  
E+P  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #1 Myrtle / Longden

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.811  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 69 Level Of Service: D

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound  |     |     | West Bound  |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L           | T   | R   | L           | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Prot+Permit |     |     | Prot+Permit |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include     |     |     | Include     |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 113  | 645  | 10   | 138  | 687  | 57   | 49   | 236  | 81   | 115  | 780  | 312  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 113  | 645  | 10   | 138  | 687  | 57   | 49   | 236  | 81   | 115  | 780  | 312  |
| Added Vol:   | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 3    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 113  | 645  | 10   | 139  | 687  | 57   | 49   | 239  | 81   | 115  | 780  | 312  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| PHF Volume:  | 121  | 691  | 11   | 149  | 736  | 61   | 53   | 256  | 87   | 123  | 836  | 334  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 121  | 691  | 11   | 149  | 736  | 61   | 53   | 256  | 87   | 123  | 836  | 334  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 121  | 691  | 11   | 149  | 736  | 61   | 53   | 256  | 87   | 123  | 836  | 334  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.97 | 0.03 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.43 | 0.57 |
| Final Sat.: | 1600 | 3151 | 49   | 1600 | 3200 | 1600 | 1600 | 1600 | 1600 | 1600 | 2286 | 914  |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.08 | 0.22 | 0.22 | 0.09 | 0.23 | 0.04 | 0.03 | 0.16 | 0.05 | 0.08 | 0.37 | 0.37 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

E+P AM

Fri Nov 8, 2019 12:02:38

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The Park @ Live Oak (JN 11110)

E+P

AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #2 Myrtle/Peck / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.878

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 90 Level Of Service: D

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 2   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 241  | 662  | 160  | 28   | 577  | 235  | 133  | 535  | 237  | 184  | 1068 | 13   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 241  | 662  | 160  | 28   | 577  | 235  | 133  | 535  | 237  | 184  | 1068 | 13   |
| Added Vol:   | 0    | 0    | 3    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 241  | 662  | 163  | 28   | 577  | 235  | 133  | 536  | 237  | 184  | 1068 | 13   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 249  | 685  | 169  | 29   | 597  | 243  | 138  | 554  | 245  | 190  | 1104 | 13   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 249  | 685  | 169  | 29   | 597  | 243  | 138  | 554  | 245  | 190  | 1104 | 13   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 249  | 685  | 169  | 29   | 597  | 243  | 138  | 554  | 245  | 190  | 1104 | 13   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.98 | 0.02 |
| Final Sat.: | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3162 | 38   |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.16 | 0.21 | 0.11 | 0.02 | 0.19 | 0.15 | 0.09 | 0.17 | 0.15 | 0.12 | 0.35 | 0.35 |
| Crit Moves: | **** |      |      |      | **** |      | **** |      |      |      | **** |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)

E+P

AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #3 Longden / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.737

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 55 Level Of Service: C

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 5    | 7    | 8    | 379  | 5    | 17   | 27   | 619  | 0    | 9    | 1485 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 5    | 7    | 8    | 379  | 5    | 17   | 27   | 619  | 0    | 9    | 1485 | 0    |
| Added Vol:   | 0    | 0    | 0    | 4    | 0    | 0    | 0    | 4    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 5    | 7    | 8    | 383  | 5    | 17   | 27   | 623  | 0    | 9    | 1485 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 5    | 7    | 8    | 397  | 5    | 18   | 28   | 646  | 0    | 9    | 1539 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 5    | 7    | 8    | 397  | 5    | 18   | 28   | 646  | 0    | 9    | 1539 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 5    | 7    | 8    | 397  | 5    | 18   | 28   | 646  | 0    | 9    | 1539 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.25 | 0.35 | 0.40 | 1.97 | 0.03 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 |
| Final Sat.: | 400  | 560  | 640  | 3159 | 41   | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.01 | 0.01 | 0.01 | 0.13 | 0.13 | 0.01 | 0.02 | 0.20 | 0.00 | 0.01 | 0.48 | 0.00 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)

E+P

AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #4 Live Oak / Arrow (West)

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Cycle (sec): 100 Critical Vol./Cap.(X): 1.027

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 976  | 0    | 247  | 0    | 0    | 0    | 0    | 493  | 0    | 145  | 1774 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 976  | 0    | 247  | 0    | 0    | 0    | 0    | 493  | 0    | 145  | 1774 | 0    |
| Added Vol:   | 0    | 0    | 301  | 0    | 0    | 0    | 0    | 9    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 976  | 0    | 548  | 0    | 0    | 0    | 0    | 502  | 0    | 145  | 1774 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 1009 | 0    | 567  | 0    | 0    | 0    | 0    | 519  | 0    | 150  | 1835 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 1009 | 0    | 567  | 0    | 0    | 0    | 0    | 519  | 0    | 150  | 1835 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 1009 | 0    | 567  | 0    | 0    | 0    | 0    | 519  | 0    | 150  | 1835 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 2.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 0    | 3200 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.32 | 0.00 | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 | 0.00 | 0.05 | 0.57 | 0.00 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.5  |      |      |      |      |      |
| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
| Lane Configurations      | ↑↑↑  |      | ↘    | ↑↑   | ↘    |      |
| Traffic Vol, veh/h       | 813  | 29   | 27   | 1512 | 12   | 30   |
| Future Vol, veh/h        | 813  | 29   | 27   | 1512 | 12   | 30   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | 150  | -    | 0    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 97   | 97   | 97   | 97   | 97   | 97   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 838  | 30   | 28   | 1559 | 12   | 31   |

| Major/Minor          | Major1 | Major2 | Minor1 |   |      |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 0      | 0      | 868    | 0 | 1689 |
| Stage 1              | -      | -      | -      | - | 853  |
| Stage 2              | -      | -      | -      | - | 836  |
| Critical Hdwy        | -      | -      | 5.3    | - | 6.25 |
| Critical Hdwy Stg 1  | -      | -      | -      | - | 6.6  |
| Critical Hdwy Stg 2  | -      | -      | -      | - | 5.8  |
| Follow-up Hdwy       | -      | -      | 3.1    | - | 3.65 |
| Pot Cap-1 Maneuver   | -      | -      | 459    | - | 110  |
| Stage 1              | -      | -      | -      | - | 308  |
| Stage 2              | -      | -      | -      | - | 380  |
| Platoon blocked, %   | -      | -      | -      | - | -    |
| Mov Cap-1 Maneuver   | -      | -      | 459    | - | 103  |
| Mov Cap-2 Maneuver   | -      | -      | -      | - | 103  |
| Stage 1              | -      | -      | -      | - | 308  |
| Stage 2              | -      | -      | -      | - | 357  |

| Approach             | EB | WB  | NB   |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0  | 0.2 | 23.6 |
| HCM LOS              |    |     | C    |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 237   | -   | -   | 459   | -   |
| HCM Lane V/C Ratio    | 0.183 | -   | -   | 0.061 | -   |
| HCM Control Delay (s) | 23.6  | -   | -   | 13.3  | -   |
| HCM Lane LOS          | C     | -   | -   | B     | -   |
| HCM 95th %tile Q(veh) | 0.7   | -   | -   | 0.2   | -   |



**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
E+P  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #15 Avenida Barbosa/Dwy A / Arrow

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Cycle (sec): 100 Critical Vol./Cap.(X): 1.016  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 180 Level Of Service: F

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 198  | 0    | 174  | 311  | 429  | 0    | 0    | 1756 | 648  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 198  | 0    | 174  | 311  | 429  | 0    | 0    | 1756 | 648  |
| Added Vol:   | 0    | 0    | 0    | 4    | 0    | 0    | 0    | 124  | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 202  | 0    | 174  | 311  | 553  | 0    | 0    | 1756 | 648  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| PHF Volume:  | 0    | 0    | 0    | 217  | 0    | 187  | 334  | 595  | 0    | 0    | 1888 | 697  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 217  | 0    | 187  | 334  | 595  | 0    | 0    | 1888 | 697  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 217  | 0    | 187  | 334  | 595  | 0    | 0    | 1888 | 697  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.12 | 0.21 | 0.19 | 0.00 | 0.00 | 0.59 | 0.44 |
| Crit Moves: |      |      |      |      |      | **** | **** |      |      |      | **** |      |

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| Intersection               |        |                        |        |                            |        |      |          |                                |       |      |      |       |
|----------------------------|--------|------------------------|--------|----------------------------|--------|------|----------|--------------------------------|-------|------|------|-------|
| Int Delay, s/veh           | 69     |                        |        |                            |        |      |          |                                |       |      |      |       |
| Movement                   | EBL    | EBT                    | EBR    | WBL                        | WBT    | WBR  | NBL      | NBT                            | NBR   | SBL  | SBT  | SBR   |
| Lane Configurations        |        | ↑↑                     |        |                            | ↑↑     |      |          |                                | ↗     |      |      | ↗     |
| Traffic Vol, veh/h         | 0      | 322                    | 0      | 0                          | 1571   | 0    | 0        | 0                              | 580   | 0    | 0    | 642   |
| Future Vol, veh/h          | 0      | 322                    | 0      | 0                          | 1571   | 0    | 0        | 0                              | 580   | 0    | 0    | 642   |
| Conflicting Peds, #/hr     | 0      | 0                      | 0      | 0                          | 0      | 0    | 0        | 0                              | 0     | 0    | 0    | 0     |
| Sign Control               | Free   | Free                   | Free   | Free                       | Free   | Free | Stop     | Stop                           | Stop  | Stop | Stop | Stop  |
| RT Channelized             | -      | -                      | None   | -                          | -      | None | -        | -                              | Yield | -    | -    | Yield |
| Storage Length             | -      | -                      | -      | -                          | -      | -    | -        | -                              | 0     | -    | -    | 0     |
| Veh in Median Storage, #   | -      | 0                      | -      | -                          | 0      | -    | -        | 0                              | -     | -    | 0    | -     |
| Grade, %                   | -      | 0                      | -      | -                          | 0      | -    | -        | 0                              | -     | -    | 0    | -     |
| Peak Hour Factor           | 92     | 92                     | 92     | 92                         | 92     | 92   | 92       | 92                             | 92    | 92   | 92   | 92    |
| Heavy Vehicles, %          | 0      | 0                      | 0      | 0                          | 0      | 0    | 0        | 0                              | 0     | 0    | 0    | 0     |
| Mvmt Flow                  | 0      | 350                    | 0      | 0                          | 1708   | 0    | 0        | 0                              | 630   | 0    | 0    | 698   |
|                            |        |                        |        |                            |        |      |          |                                |       |      |      |       |
| Major/Minor                | Major1 |                        | Major2 |                            | Minor1 |      | Minor2   |                                |       |      |      |       |
| Conflicting Flow All       | -      | 0                      | -      | -                          | -      | 0    | -        | -                              | 175   | -    | -    | 854   |
| Stage 1                    | -      | -                      | -      | -                          | -      | -    | -        | -                              | -     | -    | -    | -     |
| Stage 2                    | -      | -                      | -      | -                          | -      | -    | -        | -                              | -     | -    | -    | -     |
| Critical Hdwy              | -      | -                      | -      | -                          | -      | -    | -        | -                              | 5.5   | -    | -    | 5.5   |
| Critical Hdwy Stg 1        | -      | -                      | -      | -                          | -      | -    | -        | -                              | -     | -    | -    | -     |
| Critical Hdwy Stg 2        | -      | -                      | -      | -                          | -      | -    | -        | -                              | -     | -    | -    | -     |
| Follow-up Hdwy             | -      | -                      | -      | -                          | -      | -    | -        | -                              | 3.3   | -    | -    | 3.3   |
| Pot Cap-1 Maneuver         | 0      | -                      | 0      | 0                          | -      | 0    | 0        | 0                              | 904   | 0    | 0    | ~ 427 |
| Stage 1                    | 0      | -                      | 0      | 0                          | -      | 0    | 0        | 0                              | -     | 0    | 0    | -     |
| Stage 2                    | 0      | -                      | 0      | 0                          | -      | 0    | 0        | 0                              | -     | 0    | 0    | -     |
| Platoon blocked, %         |        | -                      |        |                            | -      |      |          |                                |       |      |      |       |
| Mov Cap-1 Maneuver         | -      | -                      | -      | -                          | -      | -    | -        | -                              | 904   | -    | -    | ~ 427 |
| Mov Cap-2 Maneuver         | -      | -                      | -      | -                          | -      | -    | -        | -                              | -     | -    | -    | -     |
| Stage 1                    | -      | -                      | -      | -                          | -      | -    | -        | -                              | -     | -    | -    | -     |
| Stage 2                    | -      | -                      | -      | -                          | -      | -    | -        | -                              | -     | -    | -    | -     |
|                            |        |                        |        |                            |        |      |          |                                |       |      |      |       |
| Approach                   | EB     |                        | WB     |                            | NB     |      | SB       |                                |       |      |      |       |
| HCM Control Delay, s       | 0      |                        | 0      |                            | 17.6   |      | \$ 319.1 |                                |       |      |      |       |
| HCM LOS                    |        |                        |        |                            | C      |      | F        |                                |       |      |      |       |
|                            |        |                        |        |                            |        |      |          |                                |       |      |      |       |
| Minor Lane/Major Mvmt      | NBLn1  | EBT                    | WBT    | SBLn1                      |        |      |          |                                |       |      |      |       |
| Capacity (veh/h)           | 904    | -                      | -      | 427                        |        |      |          |                                |       |      |      |       |
| HCM Lane V/C Ratio         | 0.697  | -                      | -      | 1.634                      |        |      |          |                                |       |      |      |       |
| HCM Control Delay (s)      | 17.6   | -                      | -      | \$ 319.1                   |        |      |          |                                |       |      |      |       |
| HCM Lane LOS               | C      | -                      | -      | F                          |        |      |          |                                |       |      |      |       |
| HCM 95th %tile Q(veh)      | 5.9    | -                      | -      | 40.3                       |        |      |          |                                |       |      |      |       |
| Notes                      |        |                        |        |                            |        |      |          |                                |       |      |      |       |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |        | +: Computation Not Defined |        |      |          | *: All major volume in platoon |       |      |      |       |

**\*\* Project Construction \*\***

E+P AM

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The Park @ Live Oak (JN 11110)  
E+P  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #26 Rivergrade / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.718  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 52 Level Of Service: C  
\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |
| Lanes:      | 1           | 0   | 1   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   | 2 | 0 | 1 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 60   | 91   | 197  | 25   | 350  | 99   | 93   | 673  | 81   | 277  | 1076 | 28   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 60   | 91   | 197  | 25   | 350  | 99   | 93   | 673  | 81   | 277  | 1076 | 28   |
| Added Vol:   | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 13   | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 63   | 91   | 197  | 25   | 350  | 99   | 93   | 673  | 81   | 277  | 1089 | 28   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| PHF Volume:  | 71   | 103  | 222  | 28   | 395  | 112  | 105  | 760  | 91   | 313  | 1229 | 32   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 71   | 103  | 222  | 28   | 395  | 112  | 105  | 760  | 91   | 313  | 1229 | 32   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 71   | 103  | 222  | 28   | 395  | 112  | 105  | 760  | 91   | 313  | 1229 | 32   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.04 | 0.06 | 0.14 | 0.02 | 0.12 | 0.07 | 0.07 | 0.24 | 0.06 | 0.20 | 0.38 | 0.02 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
E+P  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #27 Stewart / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.903

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 101 Level Of Service: E

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Permitted   |     |     | Permitted   |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 1   | 1          | 0   | 2   | 0          | 1   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 242  | 113  | 29   | 13   | 35   | 50   | 14   | 742  | 28   | 24   | 1569 | 27   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 242  | 113  | 29   | 13   | 35   | 50   | 14   | 742  | 28   | 24   | 1569 | 27   |
| Added Vol:   | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 11   | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 243  | 113  | 29   | 13   | 35   | 50   | 14   | 742  | 28   | 24   | 1580 | 27   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| PHF Volume:  | 260  | 121  | 31   | 14   | 37   | 53   | 15   | 793  | 30   | 26   | 1688 | 29   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 260  | 121  | 31   | 14   | 37   | 53   | 15   | 793  | 30   | 26   | 1688 | 29   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 260  | 121  | 31   | 14   | 37   | 53   | 15   | 793  | 30   | 26   | 1688 | 29   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.63 | 0.29 | 0.08 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1010 | 470  | 121  | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.16 | 0.26 | 0.26 | 0.01 | 0.02 | 0.03 | 0.01 | 0.25 | 0.02 | 0.02 | 0.53 | 0.02 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      |      | **** |      |

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# \*\* Project Construction \*\*

E+P AM

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The Park @ Live Oak (JN 11110)

E+P

AM Peak Hour

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #29 Arrow / Live Oak (East)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.694

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 49 Level Of Service: B

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 0   |

### Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 312  | 0    | 62   | 119  | 775  | 0    | 0    | 1259 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 312  | 0    | 62   | 119  | 775  | 0    | 0    | 1259 | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 10   | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 312  | 0    | 62   | 119  | 775  | 0    | 0    | 1269 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| PHF Volume:  | 0    | 0    | 0    | 326  | 0    | 65   | 124  | 810  | 0    | 0    | 1326 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 326  | 0    | 65   | 124  | 810  | 0    | 0    | 1326 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 326  | 0    | 65   | 124  | 810  | 0    | 0    | 1326 | 0    |

### Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 0    |

### Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.04 | 0.08 | 0.25 | 0.00 | 0.00 | 0.41 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      |      | **** |      |      |      | **** |

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**\*\* Project Construction \*\***

E+P PM

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #1 Myrtle / Longden

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.923  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 113 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound  |     |     | West Bound  |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L           | T   | R   | L           | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Prot+Permit |     |     | Prot+Permit |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include     |     |     | Include     |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 1   | 1           | 0   | 0   | 1           | 0   | 1   | 0           | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 85   | 688  | 48   | 313  | 1008 | 61   | 83   | 576  | 80   | 21   | 359  | 258  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 85   | 688  | 48   | 313  | 1008 | 61   | 83   | 576  | 80   | 21   | 359  | 258  |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 3    | 1    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 85   | 688  | 48   | 313  | 1008 | 61   | 83   | 576  | 80   | 21   | 362  | 259  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 88   | 709  | 49   | 322  | 1038 | 63   | 85   | 593  | 82   | 22   | 373  | 267  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 88   | 709  | 49   | 322  | 1038 | 63   | 85   | 593  | 82   | 22   | 373  | 267  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 88   | 709  | 49   | 322  | 1038 | 63   | 85   | 593  | 82   | 22   | 373  | 267  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.87 | 0.13 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.17 | 0.83 |
| Final Sat.: | 1600 | 2991 | 209  | 1600 | 3200 | 1600 | 1600 | 1600 | 1600 | 1600 | 1865 | 1335 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.05 | 0.24 | 0.24 | 0.20 | 0.32 | 0.04 | 0.05 | 0.37 | 0.05 | 0.01 | 0.20 | 0.20 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

E+P PM

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Myrtle/Peck / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.942

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 127 Level Of Service: E

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 2   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 188  | 695  | 165  | 252  | 668  | 146  | 110  | 1148 | 190  | 93   | 567  | 12   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 188  | 695  | 165  | 252  | 668  | 146  | 110  | 1148 | 190  | 93   | 567  | 12   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 3    | 1    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 188  | 695  | 165  | 252  | 668  | 146  | 110  | 1148 | 190  | 96   | 568  | 12   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| PHF Volume:  | 200  | 738  | 175  | 268  | 709  | 155  | 117  | 1219 | 202  | 102  | 603  | 13   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 200  | 738  | 175  | 268  | 709  | 155  | 117  | 1219 | 202  | 102  | 603  | 13   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 200  | 738  | 175  | 268  | 709  | 155  | 117  | 1219 | 202  | 102  | 603  | 13   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3134 | 66   |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.12 | 0.23 | 0.11 | 0.17 | 0.22 | 0.10 | 0.07 | 0.38 | 0.13 | 0.06 | 0.19 | 0.19 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

E+P PM

Fri Nov 8, 2019 12:03:00

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Longden / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.881

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 91 Level Of Service: D

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 747  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 747  | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 4    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 751  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 751  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 751  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 942  | 0    | 8    | 15   | 1554 | 0    | 2    | 751  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 1.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 1600 | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.29 | 0.00 | 0.01 | 0.01 | 0.49 | 0.00 | 0.00 | 0.23 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      |      | **** |      |      | **** |      |

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**\*\* Project Construction \*\***

E+P PM

Fri Nov 8, 2019 12:03:00

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Live Oak / Arrow (West)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.708

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 51 Level Of Service: C

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 798  | 0    | 152  | 0    | 0    | 0    | 0    | 721  | 0    | 342  | 620  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 798  | 0    | 152  | 0    | 0    | 0    | 0    | 721  | 0    | 342  | 620  | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 50   | 9    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 798  | 0    | 152  | 0    | 0    | 0    | 0    | 721  | 0    | 392  | 629  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| PHF Volume:  | 812  | 0    | 155  | 0    | 0    | 0    | 0    | 733  | 0    | 399  | 640  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 812  | 0    | 155  | 0    | 0    | 0    | 0    | 733  | 0    | 399  | 640  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 812  | 0    | 155  | 0    | 0    | 0    | 0    | 733  | 0    | 399  | 640  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 2.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 0    | 3200 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.25 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.23 | 0.00 | 0.12 | 0.20 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      |      | **** |      | **** |      |      |

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| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 33.5 |      |      |      |      |      |
| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
| Lane Configurations      | ↑↑↑  |      | ↑    | ↑↑   | ↑    |      |
| Traffic Vol, veh/h       | 2355 | 12   | 40   | 930  | 20   | 56   |
| Future Vol, veh/h        | 2355 | 12   | 40   | 930  | 20   | 56   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | 150  | -    | 0    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 96   | 96   | 96   | 96   | 96   | 96   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 2453 | 13   | 42   | 969  | 21   | 58   |

| Major/Minor          | Major1 | Major2 | Minor1 |   |      |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 0      | 0      | 2466   | 0 | 3029 |
| Stage 1              | -      | -      | -      | - | 2460 |
| Stage 2              | -      | -      | -      | - | 569  |
| Critical Hdwy        | -      | -      | 5.3    | - | 6.25 |
| Critical Hdwy Stg 1  | -      | -      | -      | - | 6.6  |
| Critical Hdwy Stg 2  | -      | -      | -      | - | 5.8  |
| Follow-up Hdwy       | -      | -      | 3.1    | - | 3.65 |
| Pot Cap-1 Maneuver   | -      | -      | 74     | - | ~ 17 |
| Stage 1              | -      | -      | -      | - | 29   |
| Stage 2              | -      | -      | -      | - | 519  |
| Platoon blocked, %   | -      | -      | -      | - | -    |
| Mov Cap-1 Maneuver   | -      | -      | 74     | - | ~ 7  |
| Mov Cap-2 Maneuver   | -      | -      | -      | - | ~ 7  |
| Stage 1              | -      | -      | -      | - | 29   |
| Stage 2              | -      | -      | -      | - | 224  |

| Approach             | EB | WB  | NB        |
|----------------------|----|-----|-----------|
| HCM Control Delay, s | 0  | 4.3 | \$ 1448.8 |
| HCM LOS              |    |     | F         |

| Minor Lane/Major Mvmt | NBLn1     | EBT | EBR | WBL   | WBT |
|-----------------------|-----------|-----|-----|-------|-----|
| Capacity (veh/h)      | 23        | -   | -   | 74    | -   |
| HCM Lane V/C Ratio    | 3.442     | -   | -   | 0.563 | -   |
| HCM Control Delay (s) | \$ 1448.8 | -   | -   | 103.6 | -   |
| HCM Lane LOS          | F         | -   | -   | F     | -   |
| HCM 95th %tile Q(veh) | 10        | -   | -   | 2.4   | -   |

| Notes                      |                        |                            |                                |
|----------------------------|------------------------|----------------------------|--------------------------------|
| ~: Volume exceeds capacity | \$: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

**\*\* Project Construction \*\***

E+P PM

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #15 Avenida Barbosa/Dwy A / Arrow

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.730

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 54 Level Of Service: C

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|
| Movement:   | L           | -   | T   | -           | R   | L   | -          | T   | -   | R          | L   | -   | T | - | R |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 2   | 0          | 0   | 0   | 1          | 1   | 0   | 2 | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 649  | 0    | 413  | 225  | 648  | 0    | 0    | 550  | 231  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 649  | 0    | 413  | 225  | 648  | 0    | 0    | 550  | 231  |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 63   | 100  | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 649  | 0    | 413  | 288  | 748  | 0    | 0    | 550  | 231  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 0    | 0    | 0    | 670  | 0    | 427  | 298  | 773  | 0    | 0    | 568  | 239  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 670  | 0    | 427  | 298  | 773  | 0    | 0    | 568  | 239  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 670  | 0    | 427  | 298  | 773  | 0    | 0    | 568  | 239  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.21 | 0.00 | 0.27 | 0.19 | 0.24 | 0.00 | 0.00 | 0.18 | 0.15 |
| Crit Moves: |      |      |      | **** |      | **** |      |      |      | **** |      |      |

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| Intersection               |        |                        |        |                            |        |      |        |                                |       |      |      |       |
|----------------------------|--------|------------------------|--------|----------------------------|--------|------|--------|--------------------------------|-------|------|------|-------|
| Int Delay, s/veh           | 33.4   |                        |        |                            |        |      |        |                                |       |      |      |       |
| Movement                   | EBL    | EBT                    | EBR    | WBL                        | WBT    | WBR  | NBL    | NBT                            | NBR   | SBL  | SBT  | SBR   |
| Lane Configurations        |        | ↑↑                     |        |                            | ↑↑     |      |        |                                | ↗     |      |      | ↗     |
| Traffic Vol, veh/h         | 0      | 1177                   | 0      | 0                          | 1101   | 0    | 0      | 0                              | 646   | 0    | 0    | 572   |
| Future Vol, veh/h          | 0      | 1177                   | 0      | 0                          | 1101   | 0    | 0      | 0                              | 646   | 0    | 0    | 572   |
| Conflicting Peds, #/hr     | 0      | 0                      | 0      | 0                          | 0      | 0    | 0      | 0                              | 0     | 0    | 0    | 0     |
| Sign Control               | Free   | Free                   | Free   | Free                       | Free   | Free | Stop   | Stop                           | Stop  | Stop | Stop | Stop  |
| RT Channelized             | -      | -                      | None   | -                          | -      | None | -      | -                              | Yield | -    | -    | Yield |
| Storage Length             | -      | -                      | -      | -                          | -      | -    | -      | -                              | 0     | -    | -    | 0     |
| Veh in Median Storage, #   | -      | 0                      | -      | -                          | 0      | -    | -      | 0                              | -     | -    | 0    | -     |
| Grade, %                   | -      | 0                      | -      | -                          | 0      | -    | -      | 0                              | -     | -    | 0    | -     |
| Peak Hour Factor           | 97     | 97                     | 97     | 97                         | 97     | 97   | 97     | 97                             | 97    | 97   | 97   | 97    |
| Heavy Vehicles, %          | 0      | 0                      | 0      | 0                          | 0      | 0    | 0      | 0                              | 0     | 0    | 0    | 0     |
| Mvmt Flow                  | 0      | 1213                   | 0      | 0                          | 1135   | 0    | 0      | 0                              | 666   | 0    | 0    | 590   |
|                            |        |                        |        |                            |        |      |        |                                |       |      |      |       |
| Major/Minor                | Major1 |                        | Major2 |                            | Minor1 |      | Minor2 |                                |       |      |      |       |
| Conflicting Flow All       | -      | 0                      | -      | -                          | -      | 0    | -      | -                              | 607   | -    | -    | 568   |
| Stage 1                    | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Stage 2                    | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Critical Hdwy              | -      | -                      | -      | -                          | -      | -    | -      | -                              | 5.5   | -    | -    | 5.5   |
| Critical Hdwy Stg 1        | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Critical Hdwy Stg 2        | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Follow-up Hdwy             | -      | -                      | -      | -                          | -      | -    | -      | -                              | 3.3   | -    | -    | 3.3   |
| Pot Cap-1 Maneuver         | 0      | -                      | 0      | 0                          | -      | 0    | 0      | 0                              | ~ 563 | 0    | 0    | ~ 588 |
| Stage 1                    | 0      | -                      | 0      | 0                          | -      | 0    | 0      | 0                              | -     | 0    | 0    | -     |
| Stage 2                    | 0      | -                      | 0      | 0                          | -      | 0    | 0      | 0                              | -     | 0    | 0    | -     |
| Platoon blocked, %         |        | -                      |        |                            | -      |      |        |                                |       |      |      |       |
| Mov Cap-1 Maneuver         | -      | -                      | -      | -                          | -      | -    | -      | -                              | ~ 563 | -    | -    | ~ 588 |
| Mov Cap-2 Maneuver         | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Stage 1                    | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Stage 2                    | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
|                            |        |                        |        |                            |        |      |        |                                |       |      |      |       |
| Approach                   | EB     |                        | WB     |                            | NB     |      | SB     |                                |       |      |      |       |
| HCM Control Delay, s       | 0      |                        | 0      |                            | 123.9  |      | 64.3   |                                |       |      |      |       |
| HCM LOS                    |        |                        |        |                            | F      |      | F      |                                |       |      |      |       |
|                            |        |                        |        |                            |        |      |        |                                |       |      |      |       |
| Minor Lane/Major Mvmt      | NBLn1  | EBT                    | WBT    |                            | SBLn1  |      |        |                                |       |      |      |       |
| Capacity (veh/h)           | 563    | -                      | -      |                            | 588    |      |        |                                |       |      |      |       |
| HCM Lane V/C Ratio         | 1.183  | -                      | -      |                            | 1.003  |      |        |                                |       |      |      |       |
| HCM Control Delay (s)      | 123.9  | -                      | -      |                            | 64.3   |      |        |                                |       |      |      |       |
| HCM Lane LOS               | F      | -                      | -      |                            | F      |      |        |                                |       |      |      |       |
| HCM 95th %tile Q(veh)      | 23.5   | -                      | -      |                            | 15     |      |        |                                |       |      |      |       |
| Notes                      |        |                        |        |                            |        |      |        |                                |       |      |      |       |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |        | +: Computation Not Defined |        |      |        | *: All major volume in platoon |       |      |      |       |

**\*\* Project Construction \*\***

E+P PM

Fri Nov 8, 2019 12:03:00

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #26 Rivergrade / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 1.042  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 180 Level Of Service: F

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |
| Lanes:      | 1           | 0   | 1   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   | 2 | 0 | 1 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 166  | 201  | 498  | 26   | 49   | 69   | 40   | 1519 | 21   | 122  | 731  | 19   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 166  | 201  | 498  | 26   | 49   | 69   | 40   | 1519 | 21   | 122  | 731  | 19   |
| Added Vol:   | 0    | 0    | 0    | 0    | 3    | 7    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 166  | 201  | 498  | 26   | 52   | 76   | 40   | 1519 | 21   | 122  | 731  | 19   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| PHF Volume:  | 178  | 215  | 534  | 28   | 56   | 81   | 43   | 1628 | 23   | 131  | 783  | 20   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 178  | 215  | 534  | 28   | 56   | 81   | 43   | 1628 | 23   | 131  | 783  | 20   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 178  | 215  | 534  | 28   | 56   | 81   | 43   | 1628 | 23   | 131  | 783  | 20   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.11 | 0.13 | 0.33 | 0.02 | 0.02 | 0.05 | 0.03 | 0.51 | 0.01 | 0.08 | 0.24 | 0.01 |
| Crit Moves: | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** |

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**\*\* Project Construction \*\***

E+P PM

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #27 Stewart / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.796

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 66 Level Of Service: C

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Permitted   |     |     | Permitted   |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 1   | 1          | 0   | 2   | 0          | 1   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 54   | 27   | 7    | 36   | 114  | 8    | 39   | 1759 | 305  | 33   | 721  | 10   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 54   | 27   | 7    | 36   | 114  | 8    | 39   | 1759 | 305  | 33   | 721  | 10   |
| Added Vol:   | 0    | 0    | 0    | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 54   | 27   | 7    | 37   | 115  | 8    | 39   | 1759 | 305  | 33   | 721  | 10   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 56   | 28   | 7    | 38   | 118  | 8    | 40   | 1812 | 314  | 34   | 743  | 10   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 56   | 28   | 7    | 38   | 118  | 8    | 40   | 1812 | 314  | 34   | 743  | 10   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 56   | 28   | 7    | 38   | 118  | 8    | 40   | 1812 | 314  | 34   | 743  | 10   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.61 | 0.31 | 0.08 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 982  | 491  | 127  | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.03 | 0.06 | 0.06 | 0.02 | 0.07 | 0.01 | 0.03 | 0.57 | 0.20 | 0.02 | 0.23 | 0.01 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

E+P PM

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The Park @ Live Oak (JN 11110)

E+P

PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #29 Arrow / Live Oak (East)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.900

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 100 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 1099 | 0    | 135  | 43   | 1375 | 0    | 0    | 867  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 1099 | 0    | 135  | 43   | 1375 | 0    | 0    | 867  | 0    |
| Added Vol:   | 0    | 0    | 0    | 10   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 1109 | 0    | 135  | 43   | 1375 | 0    | 0    | 867  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 0    | 0    | 0    | 1143 | 0    | 139  | 44   | 1418 | 0    | 0    | 894  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 1143 | 0    | 139  | 44   | 1418 | 0    | 0    | 894  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 1143 | 0    | 139  | 44   | 1418 | 0    | 0    | 894  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.36 | 0.00 | 0.09 | 0.03 | 0.44 | 0.00 | 0.00 | 0.28 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      |      | **** |      |      | **** |      |

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## **OPENING YEAR CUMULATIVE (2020) WITH PROJECT**



**\*\* Project Construction \*\***

OYC 2020 WP AM

Fri Nov 8, 2019 12:03:17

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 Myrtle / Longden

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.811

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 69 Level Of Service: D

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound  |     |     | West Bound  |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L           | T   | R   | L           | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Prot+Permit |     |     | Prot+Permit |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include     |     |     | Include     |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   | 1           | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 120  | 684  | 10   | 153  | 729  | 60   | 52   | 257  | 86   | 122  | 831  | 334  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 120  | 684  | 10   | 153  | 729  | 60   | 52   | 257  | 86   | 122  | 831  | 334  |
| Added Vol:   | 0    | 0    | 0    | 2    | 0    | 0    | 0    | 5    | 0    | 0    | 2    | 1    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 120  | 684  | 10   | 155  | 729  | 60   | 52   | 262  | 86   | 122  | 833  | 335  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 120  | 684  | 10   | 155  | 729  | 60   | 52   | 262  | 86   | 122  | 833  | 335  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 120  | 684  | 10   | 155  | 729  | 60   | 52   | 262  | 86   | 122  | 833  | 335  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 120  | 684  | 10   | 155  | 729  | 60   | 52   | 262  | 86   | 122  | 833  | 335  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.97 | 0.03 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.43 | 0.57 |
| Final Sat.: | 1600 | 3154 | 46   | 1600 | 3200 | 1600 | 1600 | 1600 | 1600 | 1600 | 2282 | 918  |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.08 | 0.22 | 0.22 | 0.10 | 0.23 | 0.04 | 0.03 | 0.16 | 0.05 | 0.08 | 0.37 | 0.36 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

OYC 2020 WP AM

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Myrtle/Peck / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.904

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 102 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 2   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 256  | 702  | 177  | 30   | 612  | 249  | 141  | 605  | 253  | 209  | 1152 | 14   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 256  | 702  | 177  | 30   | 612  | 249  | 141  | 605  | 253  | 209  | 1152 | 14   |
| Added Vol:   | 0    | 0    | 5    | 0    | 0    | 0    | 0    | 2    | 0    | 2    | 1    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 256  | 702  | 182  | 30   | 612  | 249  | 141  | 607  | 253  | 211  | 1153 | 14   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 256  | 702  | 182  | 30   | 612  | 249  | 141  | 607  | 253  | 211  | 1153 | 14   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 256  | 702  | 182  | 30   | 612  | 249  | 141  | 607  | 253  | 211  | 1153 | 14   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 256  | 702  | 182  | 30   | 612  | 249  | 141  | 607  | 253  | 211  | 1153 | 14   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.98 | 0.02 |
| Final Sat.: | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3162 | 38   |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.16 | 0.22 | 0.11 | 0.02 | 0.19 | 0.16 | 0.09 | 0.19 | 0.16 | 0.13 | 0.36 | 0.36 |
| Crit Moves: | **** |      |      |      | **** |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #3 Longden / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.787

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 64 Level Of Service: C

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 5    | 7    | 8    | 416  | 5    | 18   | 28   | 708  | 0    | 10   | 1672 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 5    | 7    | 8    | 416  | 5    | 18   | 28   | 708  | 0    | 10   | 1672 | 0    |
| Added Vol:   | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 7    | 0    | 0    | 3    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 5    | 7    | 8    | 423  | 5    | 18   | 28   | 715  | 0    | 10   | 1675 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 5    | 7    | 8    | 423  | 5    | 18   | 28   | 715  | 0    | 10   | 1675 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 5    | 7    | 8    | 423  | 5    | 18   | 28   | 715  | 0    | 10   | 1675 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 5    | 7    | 8    | 423  | 5    | 18   | 28   | 715  | 0    | 10   | 1675 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.25 | 0.35 | 0.40 | 1.98 | 0.02 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 |
| Final Sat.: | 400  | 560  | 640  | 3163 | 37   | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.01 | 0.01 | 0.01 | 0.13 | 0.13 | 0.01 | 0.02 | 0.22 | 0.00 | 0.01 | 0.52 | 0.00 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #4 Live Oak / Arrow (West)

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Cycle (sec): 100 Critical Vol./Cap.(X): 1.153  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 180 Level Of Service: F

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 1090 | 0    | 313  | 0    | 0    | 0    | 0    | 539  | 0    | 291  | 1931 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 1090 | 0    | 313  | 0    | 0    | 0    | 0    | 539  | 0    | 291  | 1931 | 0    |
| Added Vol:   | 0    | 0    | 403  | 0    | 0    | 0    | 0    | 15   | 0    | 45   | 6    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 1090 | 0    | 716  | 0    | 0    | 0    | 0    | 554  | 0    | 336  | 1937 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 1090 | 0    | 716  | 0    | 0    | 0    | 0    | 554  | 0    | 336  | 1937 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 1090 | 0    | 716  | 0    | 0    | 0    | 0    | 554  | 0    | 336  | 1937 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 1090 | 0    | 716  | 0    | 0    | 0    | 0    | 554  | 0    | 336  | 1937 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 2.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 0    | 3200 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.34 | 0.00 | 0.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.11 | 0.61 | 0.00 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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| Intersection             |        |      |        |       |        |      |
|--------------------------|--------|------|--------|-------|--------|------|
| Int Delay, s/veh         | 3      |      |        |       |        |      |
| Movement                 | EBT    | EBR  | WBL    | WBT   | NBL    | NBR  |
| Lane Configurations      | ↑↑↑    |      | ↱      | ↑↑    | ↲      |      |
| Traffic Vol, veh/h       | 1013   | 74   | 70     | 1685  | 30     | 46   |
| Future Vol, veh/h        | 1013   | 74   | 70     | 1685  | 30     | 46   |
| Conflicting Peds, #/hr   | 0      | 0    | 0      | 0     | 0      | 0    |
| Sign Control             | Free   | Free | Free   | Free  | Stop   | Stop |
| RT Channelized           | -      | None | -      | None  | -      | None |
| Storage Length           | -      | -    | 150    | -     | 0      | -    |
| Veh in Median Storage, # | 0      | -    | -      | 0     | 0      | -    |
| Grade, %                 | 0      | -    | -      | 0     | 0      | -    |
| Peak Hour Factor         | 97     | 97   | 97     | 97    | 97     | 97   |
| Heavy Vehicles, %        | 0      | 0    | 0      | 0     | 0      | 0    |
| Mvmt Flow                | 1044   | 76   | 72     | 1737  | 31     | 47   |
|                          |        |      |        |       |        |      |
| Major/Minor              | Major1 |      | Major2 |       | Minor1 |      |
| Conflicting Flow All     | 0      | 0    | 1120   | 0     | 2095   | 560  |
| Stage 1                  | -      | -    | -      | -     | 1082   | -    |
| Stage 2                  | -      | -    | -      | -     | 1013   | -    |
| Critical Hdwy            | -      | -    | 5.3    | -     | 6.25   | 7.1  |
| Critical Hdwy Stg 1      | -      | -    | -      | -     | 6.6    | -    |
| Critical Hdwy Stg 2      | -      | -    | -      | -     | 5.8    | -    |
| Follow-up Hdwy           | -      | -    | 3.1    | -     | 3.65   | 3.9  |
| Pot Cap-1 Maneuver       | -      | -    | 348    | -     | 63     | 408  |
| Stage 1                  | -      | -    | -      | -     | 223    | -    |
| Stage 2                  | -      | -    | -      | -     | 309    | -    |
| Platoon blocked, %       | -      | -    |        | -     |        |      |
| Mov Cap-1 Maneuver       | -      | -    | 348    | -     | 50     | 408  |
| Mov Cap-2 Maneuver       | -      | -    | -      | -     | 50     | -    |
| Stage 1                  | -      | -    | -      | -     | 223    | -    |
| Stage 2                  | -      | -    | -      | -     | 245    | -    |
|                          |        |      |        |       |        |      |
|                          |        |      |        |       |        |      |
| Approach                 | EB     |      | WB     |       | NB     |      |
| HCM Control Delay, s     | 0      |      | 0.7    |       | 99.7   |      |
| HCM LOS                  |        |      |        |       | F      |      |
|                          |        |      |        |       |        |      |
|                          |        |      |        |       |        |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBT  | EBR    | WBL   | WBT    |      |
| Capacity (veh/h)         | 107    | -    | -      | 348   | -      |      |
| HCM Lane V/C Ratio       | 0.732  | -    | -      | 0.207 | -      |      |
| HCM Control Delay (s)    | 99.7   | -    | -      | 18    | -      |      |
| HCM Lane LOS             | F      | -    | -      | C     | -      |      |
| HCM 95th %tile Q(veh)    | 3.9    | -    | -      | 0.8   | -      |      |

**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #15 Avenida Barbosa/Dwy A / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 1.108

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 220  | 0    | 194  | 334  | 518  | 0    | 0    | 2038 | 698  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 220  | 0    | 194  | 334  | 518  | 0    | 0    | 2038 | 698  |
| Added Vol:   | 0    | 0    | 0    | 97   | 0    | 10   | 55   | 161  | 0    | 0    | 0    | 95   |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 317  | 0    | 204  | 389  | 679  | 0    | 0    | 2038 | 793  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 317  | 0    | 204  | 389  | 679  | 0    | 0    | 2038 | 793  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 317  | 0    | 204  | 389  | 679  | 0    | 0    | 2038 | 793  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 317  | 0    | 204  | 389  | 679  | 0    | 0    | 2038 | 793  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.13 | 0.24 | 0.21 | 0.00 | 0.00 | 0.64 | 0.50 |
| Crit Moves: |      |      |      |      |      | **** | **** |      |      |      | **** |      |

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| Intersection               |        |                        |      |        |                            |          |          |      |                                |        |      |       |
|----------------------------|--------|------------------------|------|--------|----------------------------|----------|----------|------|--------------------------------|--------|------|-------|
| Int Delay, s/veh           | 155.5  |                        |      |        |                            |          |          |      |                                |        |      |       |
| Movement                   | EBL    | EBT                    | EBR  | WBL    | WBT                        | WBR      | NBL      | NBT  | NBR                            | SBL    | SBT  | SBR   |
| Lane Configurations        |        | ↑↑                     |      |        | ↑↑                         |          |          |      | ↗                              |        |      | ↗     |
| Traffic Vol, veh/h         | 0      | 366                    | 0    | 0      | 1726                       | 0        | 0        | 0    | 666                            | 0      | 0    | 844   |
| Future Vol, veh/h          | 0      | 366                    | 0    | 0      | 1726                       | 0        | 0        | 0    | 666                            | 0      | 0    | 844   |
| Conflicting Peds, #/hr     | 0      | 0                      | 0    | 0      | 0                          | 0        | 0        | 0    | 0                              | 0      | 0    | 0     |
| Sign Control               | Free   | Free                   | Free | Free   | Free                       | Free     | Stop     | Stop | Stop                           | Stop   | Stop | Stop  |
| RT Channelized             | -      | -                      | None | -      | -                          | None     | -        | -    | Yield                          | -      | -    | Yield |
| Storage Length             | -      | -                      | -    | -      | -                          | -        | -        | -    | 0                              | -      | -    | 0     |
| Veh in Median Storage, #   | -      | 0                      | -    | -      | 0                          | -        | -        | 0    | -                              | -      | 0    | -     |
| Grade, %                   | -      | 0                      | -    | -      | 0                          | -        | -        | 0    | -                              | -      | 0    | -     |
| Peak Hour Factor           | 92     | 92                     | 92   | 92     | 92                         | 92       | 92       | 92   | 92                             | 92     | 92   | 92    |
| Heavy Vehicles, %          | 0      | 0                      | 0    | 0      | 0                          | 0        | 0        | 0    | 0                              | 0      | 0    | 0     |
| Mvmt Flow                  | 0      | 398                    | 0    | 0      | 1876                       | 0        | 0        | 0    | 724                            | 0      | 0    | 917   |
|                            |        |                        |      |        |                            |          |          |      |                                |        |      |       |
| Major/Minor                | Major1 |                        |      | Major2 |                            |          | Minor1   |      |                                | Minor2 |      |       |
| Conflicting Flow All       | -      | 0                      | -    | -      | -                          | 0        | -        | -    | 199                            | -      | -    | 938   |
| Stage 1                    | -      | -                      | -    | -      | -                          | -        | -        | -    | -                              | -      | -    | -     |
| Stage 2                    | -      | -                      | -    | -      | -                          | -        | -        | -    | -                              | -      | -    | -     |
| Critical Hdwy              | -      | -                      | -    | -      | -                          | -        | -        | -    | 5.5                            | -      | -    | 5.5   |
| Critical Hdwy Stg 1        | -      | -                      | -    | -      | -                          | -        | -        | -    | -                              | -      | -    | -     |
| Critical Hdwy Stg 2        | -      | -                      | -    | -      | -                          | -        | -        | -    | -                              | -      | -    | -     |
| Follow-up Hdwy             | -      | -                      | -    | -      | -                          | -        | -        | -    | 3.3                            | -      | -    | 3.3   |
| Pot Cap-1 Maneuver         | 0      | -                      | 0    | 0      | -                          | 0        | 0        | 0    | 881                            | 0      | 0    | ~ 388 |
| Stage 1                    | 0      | -                      | 0    | 0      | -                          | 0        | 0        | 0    | -                              | 0      | 0    | -     |
| Stage 2                    | 0      | -                      | 0    | 0      | -                          | 0        | 0        | 0    | -                              | 0      | 0    | -     |
| Platoon blocked, %         |        | -                      |      |        | -                          |          |          |      |                                |        |      |       |
| Mov Cap-1 Maneuver         | -      | -                      | -    | -      | -                          | -        | -        | -    | 881                            | -      | -    | ~ 388 |
| Mov Cap-2 Maneuver         | -      | -                      | -    | -      | -                          | -        | -        | -    | -                              | -      | -    | -     |
| Stage 1                    | -      | -                      | -    | -      | -                          | -        | -        | -    | -                              | -      | -    | -     |
| Stage 2                    | -      | -                      | -    | -      | -                          | -        | -        | -    | -                              | -      | -    | -     |
|                            |        |                        |      |        |                            |          |          |      |                                |        |      |       |
| Approach                   | EB     |                        | WB   |        | NB                         |          | SB       |      |                                |        |      |       |
| HCM Control Delay, s       | 0      |                        | 0    |        | 24.8                       |          | \$ 643.9 |      |                                |        |      |       |
| HCM LOS                    |        |                        |      |        | C                          |          | F        |      |                                |        |      |       |
|                            |        |                        |      |        |                            |          |          |      |                                |        |      |       |
| Minor Lane/Major Mvmt      | NBLn1  |                        | EBT  | WBT    |                            | SBLn1    |          |      |                                |        |      |       |
| Capacity (veh/h)           | 881    |                        | -    | -      |                            | 388      |          |      |                                |        |      |       |
| HCM Lane V/C Ratio         | 0.822  |                        | -    | -      |                            | 2.364    |          |      |                                |        |      |       |
| HCM Control Delay (s)      | 24.8   |                        | -    | -      |                            | \$ 643.9 |          |      |                                |        |      |       |
| HCM Lane LOS               | C      |                        | -    | -      |                            | F        |          |      |                                |        |      |       |
| HCM 95th %tile Q(veh)      | 9.4    |                        | -    | -      |                            | 71       |          |      |                                |        |      |       |
| Notes                      |        |                        |      |        |                            |          |          |      |                                |        |      |       |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |      |        | +: Computation Not Defined |          |          |      | *: All major volume in platoon |        |      |       |

**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #26 Rivergrade / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.730

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 54 Level Of Service: C

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |
| Lanes:      | 1           | 0   | 1   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   | 2 | 0 | 1 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 73   | 167  | 209  | 26   | 441  | 105  | 98   | 784  | 90   | 294  | 1200 | 30   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 73   | 167  | 209  | 26   | 441  | 105  | 98   | 784  | 90   | 294  | 1200 | 30   |
| Added Vol:   | 5    | 0    | 0    | 0    | 2    | 5    | 0    | 0    | 0    | 0    | 22   | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 78   | 167  | 209  | 26   | 443  | 110  | 98   | 784  | 90   | 294  | 1222 | 30   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 78   | 167  | 209  | 26   | 443  | 110  | 98   | 784  | 90   | 294  | 1222 | 30   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 78   | 167  | 209  | 26   | 443  | 110  | 98   | 784  | 90   | 294  | 1222 | 30   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 78   | 167  | 209  | 26   | 443  | 110  | 98   | 784  | 90   | 294  | 1222 | 30   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.05 | 0.10 | 0.13 | 0.02 | 0.14 | 0.07 | 0.06 | 0.25 | 0.06 | 0.18 | 0.38 | 0.02 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #27 Stewart / Live Oak

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.928

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 116 Level Of Service: E

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Permitted   |     |     | Permitted   |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 1   | 1          | 0   | 2   | 0          | 1   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 270  | 120  | 40   | 13   | 37   | 53   | 14   | 853  | 33   | 29   | 1711 | 29   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 270  | 120  | 40   | 13   | 37   | 53   | 14   | 853  | 33   | 29   | 1711 | 29   |
| Added Vol:   | 2    | 0    | 0    | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 19   | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 272  | 120  | 40   | 14   | 38   | 53   | 14   | 853  | 33   | 29   | 1730 | 29   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 272  | 120  | 40   | 14   | 38   | 53   | 14   | 853  | 33   | 29   | 1730 | 29   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 272  | 120  | 40   | 14   | 38   | 53   | 14   | 853  | 33   | 29   | 1730 | 29   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 272  | 120  | 40   | 14   | 38   | 53   | 14   | 853  | 33   | 29   | 1730 | 29   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.63 | 0.28 | 0.09 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1007 | 444  | 148  | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.17 | 0.27 | 0.27 | 0.01 | 0.02 | 0.03 | 0.01 | 0.27 | 0.02 | 0.02 | 0.54 | 0.02 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      |      | **** |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #29 Arrow / Live Oak (East)

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.748

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 57 Level Of Service: C

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 377  | 0    | 86   | 146  | 905  | 0    | 0    | 1381 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 377  | 0    | 86   | 146  | 905  | 0    | 0    | 1381 | 0    |
| Added Vol:   | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 0    | 17   | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 384  | 0    | 86   | 146  | 905  | 0    | 0    | 1398 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 384  | 0    | 86   | 146  | 905  | 0    | 0    | 1398 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 384  | 0    | 86   | 146  | 905  | 0    | 0    | 1398 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 384  | 0    | 86   | 146  | 905  | 0    | 0    | 1398 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.05 | 0.09 | 0.28 | 0.00 | 0.00 | 0.44 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      | **** |      |      |      | **** |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #30 Maine / Arrow

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.889

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 95 Level Of Service: D

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 1   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 697  | 0    | 114  | 0    | 0    | 0    | 0    | 1194 | 208  | 69   | 2722 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 697  | 0    | 114  | 0    | 0    | 0    | 0    | 1194 | 208  | 69   | 2722 | 0    |
| Added Vol:   | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 6    | 1    | 0    | 15   | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 699  | 0    | 114  | 0    | 0    | 0    | 0    | 1200 | 209  | 69   | 2737 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 699  | 0    | 114  | 0    | 0    | 0    | 0    | 1200 | 209  | 69   | 2737 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 699  | 0    | 114  | 0    | 0    | 0    | 0    | 1200 | 209  | 69   | 2737 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 699  | 0    | 114  | 0    | 0    | 0    | 0    | 1200 | 209  | 69   | 2737 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.00 | 1.00 | 3.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 1600 | 1600 | 4800 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.22 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.38 | 0.13 | 0.04 | 0.57 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 Myrtle / Longden

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.956

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 139 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound  |     |     | West Bound  |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L           | T   | R   | L           | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Prot+Permit |     |     | Prot+Permit |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include     |     |     | Include     |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   | 0           | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 1   | 1           | 0   | 0   | 1           | 0   | 1   | 0           | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 390  | 283  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 390  | 283  |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 3    | 1    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 393  | 284  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 393  | 284  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 393  | 284  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 90   | 730  | 50   | 339  | 1069 | 64   | 88   | 618  | 85   | 22   | 393  | 284  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.87 | 0.13 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.16 | 0.84 |
| Final Sat.: | 1600 | 2995 | 205  | 1600 | 3200 | 1600 | 1600 | 1600 | 1600 | 1600 | 1858 | 1342 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.06 | 0.24 | 0.24 | 0.21 | 0.33 | 0.04 | 0.06 | 0.39 | 0.05 | 0.01 | 0.21 | 0.21 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Myrtle/Peck / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.957

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 140 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 1           | 0   | 2   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 109  | 641  | 13   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 109  | 641  | 13   |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 3    | 1    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 112  | 642  | 13   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 112  | 642  | 13   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 112  | 642  | 13   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 201  | 738  | 190  | 267  | 709  | 154  | 117  | 1246 | 201  | 112  | 642  | 13   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3136 | 64   |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.13 | 0.23 | 0.12 | 0.17 | 0.22 | 0.10 | 0.07 | 0.39 | 0.13 | 0.07 | 0.20 | 0.20 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Longden / Live Oak

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.965  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 148 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 1   | 1          | 0   | 2   | 0          | 1   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 847  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 847  | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 4    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 851  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 851  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 851  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 1014 | 0    | 8    | 15   | 1749 | 0    | 2    | 851  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 1.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 1600 | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.32 | 0.00 | 0.01 | 0.01 | 0.55 | 0.00 | 0.00 | 0.27 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      |      | **** |      |      | **** |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Live Oak / Arrow (West)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 1.835

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 1   | 1          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 905  | 0    | 336  | 0    | 0    | 0    | 0    | 807  | 1990 | 606  | 866  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 905  | 0    | 336  | 0    | 0    | 0    | 0    | 807  | 1990 | 606  | 866  | 0    |
| Added Vol:   | 0    | 0    | 10   | 0    | 0    | 0    | 0    | 0    | 0    | 61   | 9    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 905  | 0    | 346  | 0    | 0    | 0    | 0    | 807  | 1990 | 667  | 875  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 905  | 0    | 346  | 0    | 0    | 0    | 0    | 807  | 1990 | 667  | 875  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 905  | 0    | 346  | 0    | 0    | 0    | 0    | 807  | 1990 | 667  | 875  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 905  | 0    | 346  | 0    | 0    | 0    | 0    | 807  | 1990 | 667  | 875  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 2.00 | 2.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 1600 | 1600 | 3200 | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.28 | 0.00 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 1.24 | 0.21 | 0.27 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      |      |      | **** | **** |      |      |

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| Intersection               |          |                        |        |                            |      |                                |
|----------------------------|----------|------------------------|--------|----------------------------|------|--------------------------------|
| Int Delay, s/veh           | 85.5     |                        |        |                            |      |                                |
| Movement                   | EBT      | EBR                    | WBL    | WBT                        | NBL  | NBR                            |
| Lane Configurations        | ↑↑↑      |                        | ↱      | ↑↑                         | ↲    |                                |
| Traffic Vol, veh/h         | 2690     | 114                    | 116    | 1203                       | 111  | 170                            |
| Future Vol, veh/h          | 2690     | 114                    | 116    | 1203                       | 111  | 170                            |
| Conflicting Peds, #/hr     | 0        | 0                      | 0      | 0                          | 0    | 0                              |
| Sign Control               | Free     | Free                   | Free   | Free                       | Stop | Stop                           |
| RT Channelized             | -        | None                   | -      | None                       | -    | None                           |
| Storage Length             | -        | -                      | 150    | -                          | 0    | -                              |
| Veh in Median Storage, #   | 0        | -                      | -      | 0                          | 0    | -                              |
| Grade, %                   | 0        | -                      | -      | 0                          | 0    | -                              |
| Peak Hour Factor           | 96       | 96                     | 96     | 96                         | 96   | 96                             |
| Heavy Vehicles, %          | 0        | 0                      | 0      | 0                          | 0    | 0                              |
| Mvmt Flow                  | 2802     | 119                    | 121    | 1253                       | 116  | 177                            |
|                            |          |                        |        |                            |      |                                |
| Major/Minor                | Major1   | Major2                 | Minor1 |                            |      |                                |
| Conflicting Flow All       | 0        | 0                      | 2921   | 0                          | 3731 | 1461                           |
| Stage 1                    | -        | -                      | -      | -                          | 2862 | -                              |
| Stage 2                    | -        | -                      | -      | -                          | 869  | -                              |
| Critical Hdwy              | -        | -                      | 5.3    | -                          | 6.25 | 7.1                            |
| Critical Hdwy Stg 1        | -        | -                      | -      | -                          | 6.6  | -                              |
| Critical Hdwy Stg 2        | -        | -                      | -      | -                          | 5.8  | -                              |
| Follow-up Hdwy             | -        | -                      | 3.1    | -                          | 3.65 | 3.9                            |
| Pot Cap-1 Maneuver         | -        | -                      | ~ 43   | -                          | ~ 6  | ~ 103                          |
| Stage 1                    | -        | -                      | -      | -                          | ~ 16 | -                              |
| Stage 2                    | -        | -                      | -      | -                          | 366  | -                              |
| Platoon blocked, %         | -        | -                      | -      | -                          | -    | -                              |
| Mov Cap-1 Maneuver         | -        | -                      | ~ 43   | -                          | 0    | ~ 103                          |
| Mov Cap-2 Maneuver         | -        | -                      | -      | -                          | 0    | -                              |
| Stage 1                    | -        | -                      | -      | -                          | ~ 16 | -                              |
| Stage 2                    | -        | -                      | -      | -                          | 0    | -                              |
|                            |          |                        |        |                            |      |                                |
| Approach                   | EB       | WB                     |        | NB                         |      |                                |
| HCM Control Delay, s       | 0        | 89.5                   |        | \$ 919.6                   |      |                                |
| HCM LOS                    | F        |                        |        |                            |      |                                |
|                            |          |                        |        |                            |      |                                |
| Minor Lane/Major Mvmt      | NBLn1    | EBT                    | EBR    | WBL                        | WBT  |                                |
| Capacity (veh/h)           | 103      | -                      | -      | ~ 43                       | -    |                                |
| HCM Lane V/C Ratio         | 2.842    | -                      | -      | 2.81                       | -    |                                |
| HCM Control Delay (s)      | \$ 919.6 | -                      | -      | \$ 1017.3                  | -    |                                |
| HCM Lane LOS               | F        | -                      | -      | F                          | -    |                                |
| HCM 95th %tile Q(veh)      | 27.7     | -                      | -      | 13.2                       | -    |                                |
| Notes                      |          |                        |        |                            |      |                                |
| ~: Volume exceeds capacity |          | \$: Delay exceeds 300s |        | +: Computation Not Defined |      | *: All major volume in platoon |



**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour  
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #15 Avenida Barbosa/Dwy A / Arrow

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.910

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 105 Level Of Service: E

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 1   | 0   | 2          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 698  | 0    | 448  | 251  | 891  | 0    | 0    | 1025 | 253  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 698  | 0    | 448  | 251  | 891  | 0    | 0    | 1025 | 253  |
| Added Vol:   | 0    | 0    | 0    | 99   | 0    | 11   | 73   | 100  | 0    | 0    | 0    | 90   |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 797  | 0    | 459  | 324  | 991  | 0    | 0    | 1025 | 343  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 797  | 0    | 459  | 324  | 991  | 0    | 0    | 1025 | 343  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 797  | 0    | 459  | 324  | 991  | 0    | 0    | 1025 | 343  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 797  | 0    | 459  | 324  | 991  | 0    | 0    | 1025 | 343  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.29 | 0.20 | 0.31 | 0.00 | 0.00 | 0.32 | 0.21 |
| Crit Moves: |      |      |      | **** |      | **** |      |      |      |      | **** |      |

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| Intersection               |        |                        |        |                            |        |      |        |                                |       |      |      |       |
|----------------------------|--------|------------------------|--------|----------------------------|--------|------|--------|--------------------------------|-------|------|------|-------|
| Int Delay, s/veh           | 93.8   |                        |        |                            |        |      |        |                                |       |      |      |       |
| Movement                   | EBL    | EBT                    | EBR    | WBL                        | WBT    | WBR  | NBL    | NBT                            | NBR   | SBL  | SBT  | SBR   |
| Lane Configurations        |        | ↑↑                     |        |                            | ↑↑     |      |        |                                | ↗     |      |      | ↗     |
| Traffic Vol, veh/h         | 0      | 1310                   | 0      | 0                          | 1258   | 0    | 0      | 0                              | 705   | 0    | 0    | 819   |
| Future Vol, veh/h          | 0      | 1310                   | 0      | 0                          | 1258   | 0    | 0      | 0                              | 705   | 0    | 0    | 819   |
| Conflicting Peds, #/hr     | 0      | 0                      | 0      | 0                          | 0      | 0    | 0      | 0                              | 0     | 0    | 0    | 0     |
| Sign Control               | Free   | Free                   | Free   | Free                       | Free   | Free | Stop   | Stop                           | Stop  | Stop | Stop | Stop  |
| RT Channelized             | -      | -                      | None   | -                          | -      | None | -      | -                              | Yield | -    | -    | Yield |
| Storage Length             | -      | -                      | -      | -                          | -      | -    | -      | -                              | 0     | -    | -    | 0     |
| Veh in Median Storage, #   | -      | 0                      | -      | -                          | 0      | -    | -      | 0                              | -     | -    | 0    | -     |
| Grade, %                   | -      | 0                      | -      | -                          | 0      | -    | -      | 0                              | -     | -    | 0    | -     |
| Peak Hour Factor           | 97     | 97                     | 97     | 97                         | 97     | 97   | 97     | 97                             | 97    | 97   | 97   | 97    |
| Heavy Vehicles, %          | 0      | 0                      | 0      | 0                          | 0      | 0    | 0      | 0                              | 0     | 0    | 0    | 0     |
| Mvmt Flow                  | 0      | 1351                   | 0      | 0                          | 1297   | 0    | 0      | 0                              | 727   | 0    | 0    | 844   |
|                            |        |                        |        |                            |        |      |        |                                |       |      |      |       |
| Major/Minor                | Major1 |                        | Major2 |                            | Minor1 |      | Minor2 |                                |       |      |      |       |
| Conflicting Flow All       | -      | 0                      | -      | -                          | -      | 0    | -      | -                              | 676   | -    | -    | 649   |
| Stage 1                    | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Stage 2                    | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Critical Hdwy              | -      | -                      | -      | -                          | -      | -    | -      | -                              | 5.5   | -    | -    | 5.5   |
| Critical Hdwy Stg 1        | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Critical Hdwy Stg 2        | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Follow-up Hdwy             | -      | -                      | -      | -                          | -      | -    | -      | -                              | 3.3   | -    | -    | 3.3   |
| Pot Cap-1 Maneuver         | 0      | -                      | 0      | 0                          | -      | 0    | 0      | 0                              | ~ 521 | 0    | 0    | ~ 537 |
| Stage 1                    | 0      | -                      | 0      | 0                          | -      | 0    | 0      | 0                              | -     | 0    | 0    | -     |
| Stage 2                    | 0      | -                      | 0      | 0                          | -      | 0    | 0      | 0                              | -     | 0    | 0    | -     |
| Platoon blocked, %         |        | -                      |        |                            | -      |      |        |                                |       |      |      |       |
| Mov Cap-1 Maneuver         | -      | -                      | -      | -                          | -      | -    | -      | -                              | ~ 521 | -    | -    | ~ 537 |
| Mov Cap-2 Maneuver         | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Stage 1                    | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
| Stage 2                    | -      | -                      | -      | -                          | -      | -    | -      | -                              | -     | -    | -    | -     |
|                            |        |                        |        |                            |        |      |        |                                |       |      |      |       |
| Approach                   | EB     |                        | WB     |                            | NB     |      | SB     |                                |       |      |      |       |
| HCM Control Delay, s       | 0      |                        | 0      |                            | 211.4  |      | 286.5  |                                |       |      |      |       |
| HCM LOS                    |        |                        |        |                            | F      |      | F      |                                |       |      |      |       |
|                            |        |                        |        |                            |        |      |        |                                |       |      |      |       |
| Minor Lane/Major Mvmt      | NBLn1  | EBT                    | WBT    |                            | SBLn1  |      |        |                                |       |      |      |       |
| Capacity (veh/h)           | 521    | -                      | -      |                            | 537    |      |        |                                |       |      |      |       |
| HCM Lane V/C Ratio         | 1.395  | -                      | -      |                            | 1.572  |      |        |                                |       |      |      |       |
| HCM Control Delay (s)      | 211.4  | -                      | -      |                            | 286.5  |      |        |                                |       |      |      |       |
| HCM Lane LOS               | F      | -                      | -      |                            | F      |      |        |                                |       |      |      |       |
| HCM 95th %tile Q(veh)      | 33.8   | -                      | -      |                            | 45.4   |      |        |                                |       |      |      |       |
| Notes                      |        |                        |        |                            |        |      |        |                                |       |      |      |       |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |        | +: Computation Not Defined |        |      |        | *: All major volume in platoon |       |      |      |       |

**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #26 Rivergrade / Live Oak

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Cycle (sec): 100 Critical Vol./Cap.(X): 1.052  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 180 Level Of Service: F

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |   |   |   |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|---|---|---|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |   |   |   |
| Control:    | Protected   |     |     | Protected   |     |     | Protected  |     |     | Protected  |     |     |   |   |   |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |   |   |   |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |   |   |   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |   |   |   |
| Lanes:      | 1           | 0   | 1   | 0           | 1   | 1   | 0          | 2   | 0   | 1          | 1   | 0   | 2 | 0 | 1 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 186  | 277  | 528  | 27   | 109  | 73   | 42   | 1678 | 35   | 129  | 861  | 20   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 186  | 277  | 528  | 27   | 109  | 73   | 42   | 1678 | 35   | 129  | 861  | 20   |
| Added Vol:   | 0    | 0    | 0    | 0    | 3    | 7    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 186  | 277  | 528  | 27   | 112  | 80   | 42   | 1678 | 35   | 129  | 861  | 20   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 186  | 277  | 528  | 27   | 112  | 80   | 42   | 1678 | 35   | 129  | 861  | 20   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 186  | 277  | 528  | 27   | 112  | 80   | 42   | 1678 | 35   | 129  | 861  | 20   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 186  | 277  | 528  | 27   | 112  | 80   | 42   | 1678 | 35   | 129  | 861  | 20   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.12 | 0.17 | 0.33 | 0.02 | 0.04 | 0.05 | 0.03 | 0.52 | 0.02 | 0.08 | 0.27 | 0.01 |
| Crit Moves: | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** | **** |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #27 Stewart / Live Oak

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.845

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 78 Level Of Service: D

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Permitted   |     |     | Permitted   |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 1   | 0           | 0   | 1   | 1          | 0   | 2   | 0          | 1   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 68   | 29   | 11   | 38   | 120  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 68   | 29   | 11   | 38   | 120  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |
| Added Vol:   | 0    | 0    | 0    | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 68   | 29   | 11   | 39   | 121  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 68   | 29   | 11   | 39   | 121  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 68   | 29   | 11   | 39   | 121  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 68   | 29   | 11   | 39   | 121  | 8    | 41   | 1917 | 338  | 44   | 841  | 10   |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.63 | 0.27 | 0.10 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 1007 | 430  | 163  | 1600 | 1600 | 1600 | 1600 | 3200 | 1600 | 1600 | 3200 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.04 | 0.07 | 0.07 | 0.02 | 0.08 | 0.01 | 0.03 | 0.60 | 0.21 | 0.03 | 0.26 | 0.01 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

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**\*\* Project Construction \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #29 Arrow / Live Oak (East)

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.951

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 134 Level Of Service: E

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| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Permitted  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 1204 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 1204 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |
| Added Vol:   | 0    | 0    | 0    | 10   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 1214 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 1214 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 1214 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 1214 | 0    | 159  | 63   | 1510 | 0    | 0    | 1010 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 3200 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.38 | 0.00 | 0.10 | 0.04 | 0.47 | 0.00 | 0.00 | 0.32 | 0.00 |
| Crit Moves: |      |      |      | **** |      |      |      | **** |      |      | **** |      |

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**\*\* Project Construction \*\***

OYC 2020 WP PM

Fri Nov 8, 2019 12:03:36

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #30 Maine / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.464

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: A

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 1   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 0    | 0    | 85   | 1310 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 0    | 0    | 85   | 1310 | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 9    | 1    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 9    | 1    | 85   | 1310 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 9    | 1    | 85   | 1310 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 9    | 1    | 85   | 1310 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 293  | 0    | 70   | 0    | 0    | 0    | 0    | 9    | 1    | 85   | 1310 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.00 | 1.00 | 3.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 1600 | 1600 | 4800 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.09 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.27 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      | **** |      |      | **** |      |      |

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**ATTACHMENT C: INTERSECTION OPERATION ANALYSIS WORKSHEETS  
WITH IMPROVEMENTS**

**E+P**



**\*\* Grading Improvements \*\***

HCM 6th TWSC

The Park @ Live Oak TIA (JN 11110)

7: Speedway Dwy. & Live Oak Av.

11/08/2019

| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 0.5    |        |      |        |      |      |
| Movement                 | EBT    | EBR    | WBL  | WBT    | NBL  | NBR  |
| Lane Configurations      | ↑↑↑    |        | ↑    | ↑↑↑    | ↑    |      |
| Traffic Vol, veh/h       | 813    | 29     | 27   | 1229   | 12   | 30   |
| Future Vol, veh/h        | 813    | 29     | 27   | 1229   | 12   | 30   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free   | Free | Free   | Stop | Stop |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | 150  | -      | 0    | -    |
| Veh in Median Storage, # | 0      | -      | -    | 0      | 0    | -    |
| Grade, %                 | 0      | -      | -    | 0      | 0    | -    |
| Peak Hour Factor         | 97     | 97     | 97   | 97     | 97   | 97   |
| Heavy Vehicles, %        | 0      | 0      | 0    | 0      | 0    | 0    |
| Mvmt Flow                | 838    | 30     | 28   | 1267   | 12   | 31   |
|                          |        |        |      |        |      |      |
| Major/Minor              | Major1 | Major2 |      | Minor1 |      |      |
| Conflicting Flow All     | 0      | 0      | 868  | 0      | 1416 | 434  |
| Stage 1                  | -      | -      | -    | -      | 853  | -    |
| Stage 2                  | -      | -      | -    | -      | 563  | -    |
| Critical Hdwy            | -      | -      | 5.3  | -      | 5.7  | 7.1  |
| Critical Hdwy Stg 1      | -      | -      | -    | -      | 6.6  | -    |
| Critical Hdwy Stg 2      | -      | -      | -    | -      | 6    | -    |
| Follow-up Hdwy           | -      | -      | 3.1  | -      | 3.8  | 3.9  |
| Pot Cap-1 Maneuver       | -      | -      | 459  | -      | 194  | 492  |
| Stage 1                  | -      | -      | -    | -      | 301  | -    |
| Stage 2                  | -      | -      | -    | -      | 492  | -    |
| Platoon blocked, %       | -      | -      |      | -      |      |      |
| Mov Cap-1 Maneuver       | -      | -      | 459  | -      | 182  | 492  |
| Mov Cap-2 Maneuver       | -      | -      | -    | -      | 182  | -    |
| Stage 1                  | -      | -      | -    | -      | 301  | -    |
| Stage 2                  | -      | -      | -    | -      | 462  | -    |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Approach                 | EB     | WB     |      | NB     |      |      |
| HCM Control Delay, s     | 0      | 0.3    |      | 17.5   |      |      |
| HCM LOS                  | C      |        |      |        |      |      |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBT    | EBR  | WBL    | WBT  |      |
| Capacity (veh/h)         | 331    | -      | -    | 459    | -    |      |
| HCM Lane V/C Ratio       | 0.131  | -      | -    | 0.061  | -    |      |
| HCM Control Delay (s)    | 17.5   | -      | -    | 13.3   | -    |      |
| HCM Lane LOS             | C      | -      | -    | B      | -    |      |
| HCM 95th %tile Q(veh)    | 0.4    | -      | -    | 0.2    | -    |      |

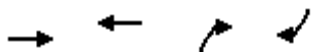
# **\*\* Grading Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

11/08/2019



| Lane Group           | EBT   | WBT   | NBR   | SBR   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑    | ↑↑    | ↑     | ↑     |
| Traffic Volume (vph) | 322   | 1423  | 580   | 507   |
| Future Volume (vph)  | 322   | 1423  | 580   | 507   |
| Turn Type            | NA    | NA    | Prot  | Prot  |
| Protected Phases     | 2     | 6     | 3     | 7     |
| Permitted Phases     |       |       |       |       |
| Detector Phase       | 2     | 6     | 3     | 7     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 5.0   | 5.0   |
| Minimum Split (s)    | 22.8  | 22.8  | 9.5   | 9.5   |
| Total Split (s)      | 58.0  | 58.0  | 62.0  | 62.0  |
| Total Split (%)      | 48.3% | 48.3% | 51.7% | 51.7% |
| Yellow Time (s)      | 4.8   | 4.8   | 3.5   | 3.5   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.8   | 5.8   | 4.5   | 4.5   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | None  | None  | None  | None  |

## **Intersection Summary**

Cycle Length: 120

Actuated Cycle Length: 100.2

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Splits and Phases: 23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

|      |      |
|------|------|
| → Ø2 | ↗ Ø3 |
| 58 s | 62 s |
| ← Ø6 | ↘ Ø7 |
| 58 s | 62 s |

**\*\* Grading Improvements \*\***

**HCM 6th Signalized Intersection Summary**

**The Park @ Live Oak TIA (JN 11110)**

**23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.**

11/08/2019

|                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |
| Traffic Volume (veh/h)                                                                                        | 0                                                                                 | 322                                                                               | 0                                                                                 | 0                                                                                 | 1423                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 580                                                                                 | 0                                                                                   | 0                                                                                   | 507                                                                                 |
| Future Volume (veh/h)                                                                                         | 0                                                                                 | 322                                                                               | 0                                                                                 | 0                                                                                 | 1423                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 580                                                                                 | 0                                                                                   | 0                                                                                   | 507                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 0                                                                                 | 350                                                                               | 0                                                                                 | 0                                                                                 | 1547                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor                                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                                          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                                    | 0                                                                                 | 3114                                                                              | 0                                                                                 | 0                                                                                 | 3114                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Arrive On Green                                                                                               | 0.00                                                                              | 0.86                                                                              | 0.00                                                                              | 0.00                                                                              | 0.86                                                                              | 0.00                                                                              | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h                                                                                               | 0                                                                                 | 3800                                                                              | 0                                                                                 | 0                                                                                 | 3800                                                                              | 0                                                                                 |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h                                                                                          | 0                                                                                 | 350                                                                               | 0                                                                                 | 0                                                                                 | 1547                                                                              | 0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 0                                                                                 | 1805                                                                              | 0                                                                                 | 0                                                                                 | 1805                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s                                                                                               | 0.0                                                                               | 0.6                                                                               | 0.0                                                                               | 0.0                                                                               | 4.3                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s                                                                                         | 0.0                                                                               | 0.6                                                                               | 0.0                                                                               | 0.0                                                                               | 4.3                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                                                                                                  | 0.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h                                                                                        | 0                                                                                 | 3114                                                                              | 0                                                                                 | 0                                                                                 | 3114                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                                                                                                  | 0.00                                                                              | 0.11                                                                              | 0.00                                                                              | 0.00                                                                              | 0.50                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h                                                                                         | 0                                                                                 | 4468                                                                              | 0                                                                                 | 0                                                                                 | 4468                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)                                                                                            | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh                                                                                      | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh                                                                                        | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.3                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln                                                                                      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 0.0                                                                               | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h                                                                                           |                                                                                   | 350                                                                               |                                                                                   |                                                                                   | 1547                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                         |                                                                                   | 0.5                                                                               |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                                                                  |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                          |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      |                                                                                   | 42.2                                                                              |                                                                                   |                                                                                   | 42.2                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   |                                                                                   | 52.2                                                                              |                                                                                   |                                                                                   | 52.2                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  |                                                                                   | 2.6                                                                               |                                                                                   |                                                                                   | 6.3                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   | 30.0                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                   | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**\*\* Grading Improvements \*\***

HCM 6th TWSC

The Park @ Live Oak TIA (JN 11110)

7: Speedway Dwy. & Live Oak Av.

11/08/2019

**Intersection**

Int Delay, s/veh 15.2

| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↑↑↑  |      | ↑    | ↑↑↑  | ↑    |      |
| Traffic Vol, veh/h       | 2312 | 12   | 40   | 930  | 20   | 56   |
| Future Vol, veh/h        | 2312 | 12   | 40   | 930  | 20   | 56   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | 150  | -    | 0    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 96   | 96   | 96   | 96   | 96   | 96   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 2408 | 13   | 42   | 969  | 21   | 58   |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 2421   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 5.3    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 3.1    |
| Pot Cap-1 Maneuver   | -      | -      | 78     |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 78     |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB     |
|----------------------|----|-----|--------|
| HCM Control Delay, s | 0  | 3.9 | \$ 625 |
| HCM LOS              |    |     | F      |

| Minor Lane/Major Mvmt | NBLn1  | EBT | EBR | WBL   | WBT |
|-----------------------|--------|-----|-----|-------|-----|
| Capacity (veh/h)      | 42     | -   | -   | 78    | -   |
| HCM Lane V/C Ratio    | 1.885  | -   | -   | 0.534 | -   |
| HCM Control Delay (s) | \$ 625 | -   | -   | 94.9  | -   |
| HCM Lane LOS          | F      | -   | -   | F     | -   |
| HCM 95th %tile Q(veh) | 8.2    | -   | -   | 2.3   | -   |

**Notes**

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

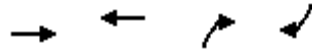
# **\*\* Grading Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

11/08/2019



| Lane Group           | EBT   | WBT   | NBR   | SBR   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑    | ↑↑    | ↗     | ↖     |
| Traffic Volume (vph) | 1177  | 1009  | 646   | 572   |
| Future Volume (vph)  | 1177  | 1009  | 646   | 572   |
| Turn Type            | NA    | NA    | Prot  | Prot  |
| Protected Phases     | 2     | 6     | 3     | 7     |
| Permitted Phases     |       |       |       |       |
| Detector Phase       | 2     | 6     | 3     | 7     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 5.0   | 5.0   |
| Minimum Split (s)    | 22.8  | 22.8  | 9.5   | 9.5   |
| Total Split (s)      | 50.0  | 50.0  | 70.0  | 70.0  |
| Total Split (%)      | 41.7% | 41.7% | 58.3% | 58.3% |
| Yellow Time (s)      | 4.8   | 4.8   | 3.5   | 3.5   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | -1.8  | -1.8  | -0.5  | -0.5  |
| Total Lost Time (s)  | 4.0   | 4.0   | 4.0   | 4.0   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | None  | None  | None  | None  |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 95.7

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Splits and Phases: 23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

|      |      |
|------|------|
| → Ø2 | ↗ Ø3 |
| 50 s | 70 s |
| ← Ø6 | ↖ Ø7 |
| 50 s | 70 s |

**\*\* Grading Improvements \*\***

**HCM 6th Signalized Intersection Summary**

**The Park @ Live Oak TIA (JN 11110)**

**23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.**

11/08/2019

|                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                    |                                                                                     | ↑                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |
| Traffic Volume (veh/h)                                                                                        | 0                                                                                 | 1177                                                                              | 0                                                                                 | 0                                                                                 | 1009                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 646                                                                                 | 0                                                                                   | 0                                                                                   | 572                                                                                 |
| Future Volume (veh/h)                                                                                         | 0                                                                                 | 1177                                                                              | 0                                                                                 | 0                                                                                 | 1009                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 646                                                                                 | 0                                                                                   | 0                                                                                   | 572                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 0                                                                                 | 1213                                                                              | 0                                                                                 | 0                                                                                 | 1040                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor                                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                               | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %                                                                                          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                                    | 0                                                                                 | 3133                                                                              | 0                                                                                 | 0                                                                                 | 3133                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Arrive On Green                                                                                               | 0.00                                                                              | 0.87                                                                              | 0.00                                                                              | 0.00                                                                              | 0.87                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h                                                                                               | 0                                                                                 | 3800                                                                              | 0                                                                                 | 0                                                                                 | 3800                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h                                                                                          | 0                                                                                 | 1213                                                                              | 0                                                                                 | 0                                                                                 | 1040                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 0                                                                                 | 1805                                                                              | 0                                                                                 | 0                                                                                 | 1805                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s                                                                                               | 0.0                                                                               | 2.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.6                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s                                                                                         | 0.0                                                                               | 2.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.6                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                                                                                                  | 0.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h                                                                                        | 0                                                                                 | 3133                                                                              | 0                                                                                 | 0                                                                                 | 3133                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                                                                                                  | 0.00                                                                              | 0.39                                                                              | 0.00                                                                              | 0.00                                                                              | 0.33                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h                                                                                         | 0                                                                                 | 5482                                                                              | 0                                                                                 | 0                                                                                 | 5482                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)                                                                                            | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh                                                                                      | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh                                                                                        | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln                                                                                      | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 0.0                                                                               | 0.6                                                                               | 0.0                                                                               | 0.0                                                                               | 0.5                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h                                                                                           |                                                                                   | 1213                                                                              |                                                                                   |                                                                                   | 1040                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                         |                                                                                   | 0.6                                                                               |                                                                                   |                                                                                   | 0.5                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                                                                  |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                          |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      |                                                                                   | 30.3                                                                              |                                                                                   |                                                                                   | 30.3                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   |                                                                                   | 44.2                                                                              |                                                                                   |                                                                                   | 44.2                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       |                                                                                   | 20.5                                                                              |                                                                                   |                                                                                   | 16.8                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                   | 0.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**\*\* Construction Improvements \*\***

E+P AM

Fri Nov 8, 2019 13:24:37

Page 2-1

The Park @ Live Oak (JN 11110)  
E+P WITH IMPROVEMENTS  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Live Oak / Arrow (West)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.836

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 76 Level Of Service: D

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 976  | 0    | 247  | 0    | 0    | 0    | 0    | 493  | 0    | 145  | 1774 | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 976  | 0    | 247  | 0    | 0    | 0    | 0    | 493  | 0    | 145  | 1774 | 0    |
| Added Vol:   | 0    | 0    | 301  | 0    | 0    | 0    | 0    | 9    | 0    | 0    | 0    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 976  | 0    | 548  | 0    | 0    | 0    | 0    | 502  | 0    | 145  | 1774 | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| PHF Volume:  | 1009 | 0    | 567  | 0    | 0    | 0    | 0    | 519  | 0    | 150  | 1835 | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 1009 | 0    | 567  | 0    | 0    | 0    | 0    | 519  | 0    | 150  | 1835 | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 1009 | 0    | 567  | 0    | 0    | 0    | 0    | 519  | 0    | 150  | 1835 | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 3.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 0    | 3200 | 4800 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.32 | 0.00 | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 | 0.00 | 0.05 | 0.38 | 0.00 |
| Crit Moves: | **** |      |      | **** |      |      | **** |      |      | **** |      |      |

\*\*\*\*\*

**\*\* Construction Improvements \*\***

HCM 6th TWSC

The Park @ Live Oak TIA (JN 11110)

7: Speedway Dwy. & Live Oak Av.

11/08/2019

**Intersection**

Int Delay, s/veh 0.4

| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↑↑↑  |      | ↑    | ↑↑↑  | ↑    |      |
| Traffic Vol, veh/h       | 813  | 29   | 27   | 1512 | 12   | 30   |
| Future Vol, veh/h        | 813  | 29   | 27   | 1512 | 12   | 30   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | 150  | -    | 0    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 97   | 97   | 97   | 97   | 97   | 97   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 838  | 30   | 28   | 1559 | 12   | 31   |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 868    |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 5.3    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 3.1    |
| Pot Cap-1 Maneuver   | -      | -      | 459    |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 459    |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB   |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0  | 0.2 | 18.6 |
| HCM LOS              |    |     | C    |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 308   | -   | -   | 459   | -   |
| HCM Lane V/C Ratio    | 0.141 | -   | -   | 0.061 | -   |
| HCM Control Delay (s) | 18.6  | -   | -   | 13.3  | -   |
| HCM Lane LOS          | C     | -   | -   | B     | -   |
| HCM 95th %tile Q(veh) | 0.5   | -   | -   | 0.2   | -   |



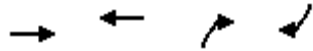
**\*\* Construction Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

11/08/2019



| Lane Group           | EBT   | WBT   | NBR   | SBR   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑    | ↑↑    | ↑     | ↑     |
| Traffic Volume (vph) | 322   | 1571  | 580   | 642   |
| Future Volume (vph)  | 322   | 1571  | 580   | 642   |
| Turn Type            | NA    | NA    | Prot  | Prot  |
| Protected Phases     | 2     | 6     | 3     | 7     |
| Permitted Phases     |       |       |       |       |
| Detector Phase       | 2     | 6     | 3     | 7     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 5.0   | 5.0   |
| Minimum Split (s)    | 22.8  | 22.8  | 9.5   | 9.5   |
| Total Split (s)      | 58.0  | 58.0  | 62.0  | 62.0  |
| Total Split (%)      | 48.3% | 48.3% | 51.7% | 51.7% |
| Yellow Time (s)      | 4.8   | 4.8   | 3.5   | 3.5   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.8   | 5.8   | 4.5   | 4.5   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | None  | None  | None  | None  |

**Intersection Summary**

Cycle Length: 120

Actuated Cycle Length: 112.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

|      |      |
|------|------|
| → Ø2 | ↗ Ø3 |
| 58 s | 62 s |
| ← Ø6 | ↘ Ø7 |
| 58 s | 62 s |

**\*\* Construction Improvements \*\***

**HCM 6th Signalized Intersection Summary**

**The Park @ Live Oak TIA (JN 11110)**

**23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.**

11/08/2019

|                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |
| Traffic Volume (veh/h)                                                                                        | 0                                                                                 | 322                                                                               | 0                                                                                 | 0                                                                                 | 1571                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 580                                                                                 | 0                                                                                   | 0                                                                                   | 642                                                                                 |
| Future Volume (veh/h)                                                                                         | 0                                                                                 | 322                                                                               | 0                                                                                 | 0                                                                                 | 1571                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 580                                                                                 | 0                                                                                   | 0                                                                                   | 642                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 0                                                                                 | 350                                                                               | 0                                                                                 | 0                                                                                 | 1708                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor                                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                                          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                                    | 0                                                                                 | 3156                                                                              | 0                                                                                 | 0                                                                                 | 3156                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Arrive On Green                                                                                               | 0.00                                                                              | 0.87                                                                              | 0.00                                                                              | 0.00                                                                              | 0.87                                                                              | 0.00                                                                              | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h                                                                                               | 0                                                                                 | 3800                                                                              | 0                                                                                 | 0                                                                                 | 3800                                                                              | 0                                                                                 |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h                                                                                          | 0                                                                                 | 350                                                                               | 0                                                                                 | 0                                                                                 | 1708                                                                              | 0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 0                                                                                 | 1805                                                                              | 0                                                                                 | 0                                                                                 | 1805                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s                                                                                               | 0.0                                                                               | 0.6                                                                               | 0.0                                                                               | 0.0                                                                               | 5.2                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s                                                                                         | 0.0                                                                               | 0.6                                                                               | 0.0                                                                               | 0.0                                                                               | 5.2                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                                                                                                  | 0.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h                                                                                        | 0                                                                                 | 3156                                                                              | 0                                                                                 | 0                                                                                 | 3156                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                                                                                                  | 0.00                                                                              | 0.11                                                                              | 0.00                                                                              | 0.00                                                                              | 0.54                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h                                                                                         | 0                                                                                 | 4087                                                                              | 0                                                                                 | 0                                                                                 | 4087                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)                                                                                            | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh                                                                                      | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh                                                                                        | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.3                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln                                                                                      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h                                                                                           |                                                                                   | 350                                                                               |                                                                                   |                                                                                   | 1708                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                         |                                                                                   | 0.4                                                                               |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                                                                  |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                          |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      |                                                                                   | 46.1                                                                              |                                                                                   |                                                                                   | 46.1                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   |                                                                                   | 52.2                                                                              |                                                                                   |                                                                                   | 52.2                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  |                                                                                   | 2.6                                                                               |                                                                                   |                                                                                   | 7.2                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   | 33.1                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                   | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**\*\* Construction Improvements \*\***

E+P PM

Fri Nov 8, 2019 13:24:51

Page 2-1

The Park @ Live Oak (JN 11110)  
E+P WITH IMPROVEMENTS  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Live Oak / Arrow (West)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.708  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 51 Level Of Service: C

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 2   | 0          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 798  | 0    | 152  | 0    | 0    | 0    | 0    | 721  | 0    | 342  | 620  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 798  | 0    | 152  | 0    | 0    | 0    | 0    | 721  | 0    | 342  | 620  | 0    |
| Added Vol:   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 50   | 9    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 798  | 0    | 152  | 0    | 0    | 0    | 0    | 721  | 0    | 392  | 629  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| PHF Volume:  | 812  | 0    | 155  | 0    | 0    | 0    | 0    | 733  | 0    | 399  | 640  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 812  | 0    | 155  | 0    | 0    | 0    | 0    | 733  | 0    | 399  | 640  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 812  | 0    | 155  | 0    | 0    | 0    | 0    | 733  | 0    | 399  | 640  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 3.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 3200 | 0    | 3200 | 4800 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.25 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.23 | 0.00 | 0.12 | 0.13 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      |      | **** |      | **** |      |      |

\*\*\*\*\*

**\*\* Construction Improvements \*\***

HCM 6th TWSC

The Park @ Live Oak TIA (JN 11110)

7: Speedway Dwy. & Live Oak Av.

11/08/2019

| Intersection               |          |                        |        |                            |          |                                |
|----------------------------|----------|------------------------|--------|----------------------------|----------|--------------------------------|
| Int Delay, s/veh           | 16.2     |                        |        |                            |          |                                |
| Movement                   | EBT      | EBR                    | WBL    | WBT                        | NBL      | NBR                            |
| Lane Configurations        | ↑↑↑      |                        | ↓      | ↑↑↑                        | ↑↓       |                                |
| Traffic Vol, veh/h         | 2355     | 12                     | 40     | 930                        | 20       | 56                             |
| Future Vol, veh/h          | 2355     | 12                     | 40     | 930                        | 20       | 56                             |
| Conflicting Peds, #/hr     | 0        | 0                      | 0      | 0                          | 0        | 0                              |
| Sign Control               | Free     | Free                   | Free   | Free                       | Stop     | Stop                           |
| RT Channelized             | -        | None                   | -      | None                       | -        | None                           |
| Storage Length             | -        | -                      | 150    | -                          | 0        | -                              |
| Veh in Median Storage, #   | 0        | -                      | -      | 0                          | 0        | -                              |
| Grade, %                   | 0        | -                      | -      | 0                          | 0        | -                              |
| Peak Hour Factor           | 96       | 96                     | 96     | 96                         | 96       | 96                             |
| Heavy Vehicles, %          | 0        | 0                      | 0      | 0                          | 0        | 0                              |
| Mvmt Flow                  | 2453     | 13                     | 42     | 969                        | 21       | 58                             |
|                            |          |                        |        |                            |          |                                |
| Major/Minor                | Major1   |                        | Major2 |                            | Minor1   |                                |
| Conflicting Flow All       | 0        | 0                      | 2466   | 0                          | 2932     | 1233                           |
| Stage 1                    | -        | -                      | -      | -                          | 2460     | -                              |
| Stage 2                    | -        | -                      | -      | -                          | 472      | -                              |
| Critical Hdwy              | -        | -                      | 5.3    | -                          | 5.7      | 7.1                            |
| Critical Hdwy Stg 1        | -        | -                      | -      | -                          | 6.6      | -                              |
| Critical Hdwy Stg 2        | -        | -                      | -      | -                          | 6        | -                              |
| Follow-up Hdwy             | -        | -                      | 3.1    | -                          | 3.8      | 3.9                            |
| Pot Cap-1 Maneuver         | -        | -                      | 74     | -                          | 30       | 147                            |
| Stage 1                    | -        | -                      | -      | -                          | 29       | -                              |
| Stage 2                    | -        | -                      | -      | -                          | 548      | -                              |
| Platoon blocked, %         | -        | -                      | -      | -                          | -        | -                              |
| Mov Cap-1 Maneuver         | -        | -                      | 74     | -                          | ~ 13     | 147                            |
| Mov Cap-2 Maneuver         | -        | -                      | -      | -                          | ~ 13     | -                              |
| Stage 1                    | -        | -                      | -      | -                          | 29       | -                              |
| Stage 2                    | -        | -                      | -      | -                          | 237      | -                              |
|                            |          |                        |        |                            |          |                                |
|                            |          |                        |        |                            |          |                                |
| Approach                   | EB       |                        | WB     |                            | NB       |                                |
| HCM Control Delay, s       | 0        |                        | 4.3    |                            | \$ 674.1 |                                |
| HCM LOS                    |          |                        |        |                            | F        |                                |
|                            |          |                        |        |                            |          |                                |
|                            |          |                        |        |                            |          |                                |
| Minor Lane/Major Mvmt      | NBLn1    | EBT                    | EBR    | WBL                        | WBT      |                                |
| Capacity (veh/h)           | 40       | -                      | -      | 74                         | -        |                                |
| HCM Lane V/C Ratio         | 1.979    | -                      | -      | 0.563                      | -        |                                |
| HCM Control Delay (s)      | \$ 674.1 | -                      | -      | 103.6                      | -        |                                |
| HCM Lane LOS               | F        | -                      | -      | F                          | -        |                                |
| HCM 95th %tile Q(veh)      | 8.4      | -                      | -      | 2.4                        | -        |                                |
| Notes                      |          |                        |        |                            |          |                                |
| ~: Volume exceeds capacity |          | \$: Delay exceeds 300s |        | +: Computation Not Defined |          | *: All major volume in platoon |

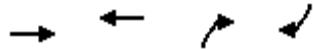
# **\*\* Construction Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

11/08/2019



| Lane Group           | EBT   | WBT   | NBR   | SBR   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑    | ↑↑    | ↰     | ↱     |
| Traffic Volume (vph) | 1177  | 1101  | 646   | 572   |
| Future Volume (vph)  | 1177  | 1101  | 646   | 572   |
| Turn Type            | NA    | NA    | Prot  | Prot  |
| Protected Phases     | 2     | 6     | 3     | 7     |
| Permitted Phases     |       |       |       |       |
| Detector Phase       | 2     | 6     | 3     | 7     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 5.0   | 5.0   |
| Minimum Split (s)    | 22.8  | 22.8  | 9.5   | 9.5   |
| Total Split (s)      | 50.0  | 50.0  | 70.0  | 70.0  |
| Total Split (%)      | 41.7% | 41.7% | 58.3% | 58.3% |
| Yellow Time (s)      | 4.8   | 4.8   | 3.5   | 3.5   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.8   | 5.8   | 4.5   | 4.5   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | None  | None  | None  | None  |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 96

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

|      |      |
|------|------|
| → Ø2 | ↰ Ø3 |
| 50 s | 70 s |
| ← Ø6 | ↱ Ø7 |
| 50 s | 70 s |

**\*\* Construction Improvements \*\***

**HCM 6th Signalized Intersection Summary**

**The Park @ Live Oak TIA (JN 11110)**

**23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.**

11/08/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                    |                                                                                     | ↑                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |
| Traffic Volume (veh/h)       | 0                                                                                 | 1177                                                                              | 0                                                                                 | 0                                                                                 | 1101                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 646                                                                                 | 0                                                                                   | 0                                                                                   | 572                                                                                 |
| Future Volume (veh/h)        | 0                                                                                 | 1177                                                                              | 0                                                                                 | 0                                                                                 | 1101                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 646                                                                                 | 0                                                                                   | 0                                                                                   | 572                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h         | 0                                                                                 | 1213                                                                              | 0                                                                                 | 0                                                                                 | 1135                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                               | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 0                                                                                 | 2934                                                                              | 0                                                                                 | 0                                                                                 | 2934                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Arrive On Green              | 0.00                                                                              | 0.81                                                                              | 0.00                                                                              | 0.00                                                                              | 0.81                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 0                                                                                 | 3800                                                                              | 0                                                                                 | 0                                                                                 | 3800                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h         | 0                                                                                 | 1213                                                                              | 0                                                                                 | 0                                                                                 | 1135                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 0                                                                                 | 1805                                                                              | 0                                                                                 | 0                                                                                 | 1805                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 0.0                                                                               | 2.9                                                                               | 0.0                                                                               | 0.0                                                                               | 2.7                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 2.9                                                                               | 0.0                                                                               | 0.0                                                                               | 2.7                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 0.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 0                                                                                 | 2934                                                                              | 0                                                                                 | 0                                                                                 | 2934                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.00                                                                              | 0.41                                                                              | 0.00                                                                              | 0.00                                                                              | 0.39                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 0                                                                                 | 5154                                                                              | 0                                                                                 | 0                                                                                 | 5154                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 0.8                                                                               | 0.0                                                                               | 0.0                                                                               | 0.8                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 1213                                                                              |                                                                                   |                                                                                   |                                                                                   | 1135                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 31.0                                                                              |                                                                                   |                                                                                   |                                                                                   | 31.0                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 44.2                                                                              |                                                                                   |                                                                                   |                                                                                   | 44.2                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 4.9                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.7                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 20.2                                                                              |                                                                                   |                                                                                   |                                                                                   | 18.6                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## **OPENING YEAR CUMULATIVE (2020) WITH PROJECT**

**\*\* Grading Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

7: Speedway Dwy. & Live Oak Av.

11/08/2019

|                      |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group           | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                               |
| Lane Configurations  | ↑↑↑                                                                               | ↰                                                                                 | ↑↑↑                                                                               | ↰                                                                                 | ↱                                                                                 |
| Traffic Volume (vph) | 1013                                                                              | 70                                                                                | 1402                                                                              | 30                                                                                | 46                                                                                |
| Future Volume (vph)  | 1013                                                                              | 70                                                                                | 1402                                                                              | 30                                                                                | 46                                                                                |
| Turn Type            | NA                                                                                | Prot                                                                              | NA                                                                                | Prot                                                                              | Perm                                                                              |
| Protected Phases     | 4                                                                                 | 3                                                                                 | 8                                                                                 | 2                                                                                 |                                                                                   |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |
| Detector Phase       | 4                                                                                 | 3                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)    | 22.5                                                                              | 9.5                                                                               | 22.5                                                                              | 22.5                                                                              | 22.5                                                                              |
| Total Split (s)      | 64.0                                                                              | 25.0                                                                              | 89.0                                                                              | 31.0                                                                              | 31.0                                                                              |
| Total Split (%)      | 53.3%                                                                             | 20.8%                                                                             | 74.2%                                                                             | 25.8%                                                                             | 25.8%                                                                             |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Lost Time (s)  | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               |
| Lead/Lag             | Lag                                                                               | Lead                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | Min                                                                               | Min                                                                               |

**Intersection Summary**

Cycle Length: 120

Actuated Cycle Length: 45.6

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Speedway Dwy. & Live Oak Av.

|                                                                                        |                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  Ø2 |  Ø3 |  Ø4 |
| 31 s                                                                                   | 25 s                                                                                   | 64 s                                                                                   |
|                                                                                        |  Ø8 |                                                                                        |
|                                                                                        | 89 s                                                                                   |                                                                                        |



**\*\* Grading Improvements \*\***

**HCM 6th Signalized Intersection Summary**

**The Park @ Live Oak TIA (JN 11110)**

**7: Speedway Dwy. & Live Oak Av.**

11/08/2019

|                              |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                     | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                               |
| Lane Configurations          | ↑↑↑                                                                               |                                                                                   | ↵                                                                                 | ↑↑↑                                                                               | ↵                                                                                 | ↶                                                                                 |
| Traffic Volume (veh/h)       | 1013                                                                              | 74                                                                                | 70                                                                                | 1402                                                                              | 30                                                                                | 46                                                                                |
| Future Volume (veh/h)        | 1013                                                                              | 74                                                                                | 70                                                                                | 1402                                                                              | 30                                                                                | 46                                                                                |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Ped-Bike Adj(A_pbT)          |                                                                                   | 0.98                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                | No                                                                                |                                                                                   |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Adj Flow Rate, veh/h         | 1044                                                                              | 76                                                                                | 72                                                                                | 1445                                                                              | 31                                                                                | 47                                                                                |
| Peak Hour Factor             | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Cap, veh/h                   | 2139                                                                              | 155                                                                               | 127                                                                               | 3243                                                                              | 242                                                                               | 216                                                                               |
| Arrive On Green              | 0.43                                                                              | 0.43                                                                              | 0.07                                                                              | 0.63                                                                              | 0.13                                                                              | 0.13                                                                              |
| Sat Flow, veh/h              | 5096                                                                              | 358                                                                               | 1810                                                                              | 5358                                                                              | 1810                                                                              | 1610                                                                              |
| Grp Volume(v), veh/h         | 733                                                                               | 387                                                                               | 72                                                                                | 1445                                                                              | 31                                                                                | 47                                                                                |
| Grp Sat Flow(s),veh/h/ln     | 1729                                                                              | 1825                                                                              | 1810                                                                              | 1729                                                                              | 1810                                                                              | 1610                                                                              |
| Q Serve(g_s), s              | 5.7                                                                               | 5.7                                                                               | 1.4                                                                               | 5.4                                                                               | 0.6                                                                               | 1.0                                                                               |
| Cycle Q Clear(g_c), s        | 5.7                                                                               | 5.7                                                                               | 1.4                                                                               | 5.4                                                                               | 0.6                                                                               | 1.0                                                                               |
| Prop In Lane                 |                                                                                   | 0.20                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Lane Grp Cap(c), veh/h       | 1502                                                                              | 793                                                                               | 127                                                                               | 3243                                                                              | 242                                                                               | 216                                                                               |
| V/C Ratio(X)                 | 0.49                                                                              | 0.49                                                                              | 0.56                                                                              | 0.45                                                                              | 0.13                                                                              | 0.22                                                                              |
| Avail Cap(c_a), veh/h        | 5508                                                                              | 2907                                                                              | 993                                                                               | 11733                                                                             | 1284                                                                              | 1142                                                                              |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Uniform Delay (d), s/veh     | 7.6                                                                               | 7.6                                                                               | 16.8                                                                              | 3.6                                                                               | 14.3                                                                              | 14.4                                                                              |
| Incr Delay (d2), s/veh       | 0.2                                                                               | 0.5                                                                               | 3.9                                                                               | 0.1                                                                               | 0.2                                                                               | 0.5                                                                               |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| %ile BackOfQ(50%),veh/ln     | 1.1                                                                               | 1.2                                                                               | 0.6                                                                               | 0.3                                                                               | 0.2                                                                               | 0.3                                                                               |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| LnGrp Delay(d),s/veh         | 7.8                                                                               | 8.1                                                                               | 20.7                                                                              | 3.7                                                                               | 14.5                                                                              | 14.9                                                                              |
| LnGrp LOS                    | A                                                                                 | A                                                                                 | C                                                                                 | A                                                                                 | B                                                                                 | B                                                                                 |
| Approach Vol, veh/h          | 1120                                                                              |                                                                                   |                                                                                   | 1517                                                                              | 78                                                                                |                                                                                   |
| Approach Delay, s/veh        | 7.9                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 14.8                                                                              |                                                                                   |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 | B                                                                                 |                                                                                   |
| Timer - Assigned Phs         | 2                                                                                 | 3                                                                                 | 4                                                                                 | 8                                                                                 |                                                                                   |                                                                                   |
| Phs Duration (G+Y+Rc), s     | 9.5                                                                               | 7.1                                                                               | 20.7                                                                              | 27.9                                                                              |                                                                                   |                                                                                   |
| Change Period (Y+Rc), s      | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               |                                                                                   |                                                                                   |
| Max Green Setting (Gmax), s  | 26.5                                                                              | 20.5                                                                              | 59.5                                                                              | 84.5                                                                              |                                                                                   |                                                                                   |
| Max Q Clear Time (g_c+I1), s | 3.0                                                                               | 3.4                                                                               | 7.7                                                                               | 7.4                                                                               |                                                                                   |                                                                                   |
| Green Ext Time (p_c), s      | 0.2                                                                               | 0.1                                                                               | 8.5                                                                               | 14.3                                                                              |                                                                                   |                                                                                   |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 6.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |

**\*\* Grading Improvements \*\***

OYC 2020 WP AM

Fri Nov 8, 2019 13:03:05

Page 2-1

The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions WITH IMPROVEMENTS  
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #15 Avenida Barbosa/Dwy A / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.966  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 150 Level Of Service: E

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 220  | 0    | 194  | 334  | 518  | 0    | 0    | 2038 | 698  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 220  | 0    | 194  | 334  | 518  | 0    | 0    | 2038 | 698  |
| Added Vol:   | 0    | 0    | 0    | 94   | 0    | 10   | 55   | 42   | 0    | 0    | 0    | 95   |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 314  | 0    | 204  | 389  | 560  | 0    | 0    | 2038 | 793  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 314  | 0    | 204  | 389  | 560  | 0    | 0    | 2038 | 793  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 314  | 0    | 204  | 389  | 560  | 0    | 0    | 2038 | 793  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 314  | 0    | 204  | 389  | 560  | 0    | 0    | 2038 | 793  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 3.00 | 1.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 4800 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.13 | 0.24 | 0.17 | 0.00 | 0.00 | 0.42 | 0.50 |
| Crit Moves: |      |      |      | **** |      | **** | **** |      |      |      | **** |      |

\*\*\*\*\*

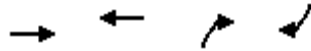
# **\*\* Grading Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

11/08/2019



| Lane Group           | EBT   | WBT   | NBR   | SBR   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑    | ↑↑    | ↵     | ↵     |
| Traffic Volume (vph) | 366   | 1578  | 666   | 709   |
| Future Volume (vph)  | 366   | 1578  | 666   | 709   |
| Turn Type            | NA    | NA    | Prot  | Prot  |
| Protected Phases     | 2     | 6     | 3     | 7     |
| Permitted Phases     |       |       |       |       |
| Detector Phase       | 2     | 6     | 3     | 7     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 5.0   | 5.0   |
| Minimum Split (s)    | 22.8  | 22.8  | 9.5   | 9.5   |
| Total Split (s)      | 58.0  | 58.0  | 62.0  | 62.0  |
| Total Split (%)      | 48.3% | 48.3% | 51.7% | 51.7% |
| Yellow Time (s)      | 4.8   | 4.8   | 3.5   | 3.5   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.8   | 5.8   | 4.5   | 4.5   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | None  | None  | None  | None  |

## **Intersection Summary**

Cycle Length: 120

Actuated Cycle Length: 118.4

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Splits and Phases: 23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

|      |      |
|------|------|
| → Ø2 | ↵ Ø3 |
| 58 s | 62 s |
| ← Ø6 | ↵ Ø7 |
| 58 s | 62 s |

**\*\* Grading Improvements \*\***

**HCM 6th Signalized Intersection Summary**

**The Park @ Live Oak TIA (JN 11110)**

**23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.**

11/08/2019

|                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |
| Traffic Volume (veh/h)                                                                                        | 0                                                                                 | 366                                                                               | 0                                                                                 | 0                                                                                 | 1578                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 666                                                                                 | 0                                                                                   | 0                                                                                   | 709                                                                                 |
| Future Volume (veh/h)                                                                                         | 0                                                                                 | 366                                                                               | 0                                                                                 | 0                                                                                 | 1578                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 666                                                                                 | 0                                                                                   | 0                                                                                   | 709                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 0                                                                                 | 398                                                                               | 0                                                                                 | 0                                                                                 | 1715                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor                                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                                          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                                    | 0                                                                                 | 3157                                                                              | 0                                                                                 | 0                                                                                 | 3157                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Arrive On Green                                                                                               | 0.00                                                                              | 0.87                                                                              | 0.00                                                                              | 0.00                                                                              | 0.87                                                                              | 0.00                                                                              | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h                                                                                               | 0                                                                                 | 3800                                                                              | 0                                                                                 | 0                                                                                 | 3800                                                                              | 0                                                                                 |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h                                                                                          | 0                                                                                 | 398                                                                               | 0                                                                                 | 0                                                                                 | 1715                                                                              | 0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 0                                                                                 | 1805                                                                              | 0                                                                                 | 0                                                                                 | 1805                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s                                                                                               | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               | 0.0                                                                               | 5.2                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s                                                                                         | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               | 0.0                                                                               | 5.2                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                                                                                                  | 0.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h                                                                                        | 0                                                                                 | 3157                                                                              | 0                                                                                 | 0                                                                                 | 3157                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                                                                                                  | 0.00                                                                              | 0.13                                                                              | 0.00                                                                              | 0.00                                                                              | 0.54                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h                                                                                         | 0                                                                                 | 4073                                                                              | 0                                                                                 | 0                                                                                 | 4073                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)                                                                                            | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh                                                                                      | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh                                                                                        | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.3                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln                                                                                      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h                                                                                           |                                                                                   | 398                                                                               |                                                                                   |                                                                                   | 1715                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                         |                                                                                   | 0.4                                                                               |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                                                                  |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                          |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      |                                                                                   | 46.3                                                                              |                                                                                   |                                                                                   | 46.3                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   |                                                                                   | 52.2                                                                              |                                                                                   |                                                                                   | 52.2                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  |                                                                                   | 2.7                                                                               |                                                                                   |                                                                                   | 7.2                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       |                                                                                   | 5.2                                                                               |                                                                                   |                                                                                   | 33.2                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                   | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# \*\* Grading Improvements \*\*

Timings

The Park @ Live Oak TIA (JN 11110)

7: Speedway Dwy. & Live Oak Av.

11/08/2019

|                      | →     | ↖     | ←     | ↗     | ↘     |
|----------------------|-------|-------|-------|-------|-------|
| Lane Group           | EBT   | WBL   | WBT   | NBL   | NBR   |
| Lane Configurations  | ↑↑↑   | ↑     | ↑↑↑   | ↑     | ↑     |
| Traffic Volume (vph) | 2647  | 116   | 1203  | 111   | 170   |
| Future Volume (vph)  | 2647  | 116   | 1203  | 111   | 170   |
| Turn Type            | NA    | Prot  | NA    | Prot  | Perm  |
| Protected Phases     | 4     | 3     | 8     | 2     |       |
| Permitted Phases     |       |       |       |       | 2     |
| Detector Phase       | 4     | 3     | 8     | 2     | 2     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 5.0   | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 27.8  | 9.6   | 15.8  | 31.6  | 31.6  |
| Total Split (s)      | 73.6  | 14.0  | 87.6  | 32.4  | 32.4  |
| Total Split (%)      | 61.3% | 11.7% | 73.0% | 27.0% | 27.0% |
| Yellow Time (s)      | 4.8   | 3.6   | 4.8   | 3.6   | 3.6   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.8   | 4.6   | 5.8   | 4.6   | 4.6   |
| Lead/Lag             | Lag   | Lead  |       |       |       |
| Lead-Lag Optimize?   | Yes   | Yes   |       |       |       |
| Recall Mode          | None  | None  | None  | Min   | Min   |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 106.6

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Speedway Dwy. & Live Oak Av.

|        |        |        |
|--------|--------|--------|
| ↖ Ø2   | ↖ Ø3   | → Ø4   |
| 32.4 s | 14 s   | 73.6 s |
|        | ← Ø8   |        |
|        | 87.6 s |        |

**\*\* Grading Improvements \*\***

**HCM 6th Signalized Intersection Summary**

**The Park @ Live Oak TIA (JN 11110)**

**7: Speedway Dwy. & Live Oak Av.**

11/08/2019

|                              |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                     | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                               |
| Lane Configurations          | ↑↑↑                                                                               |                                                                                   | ↵                                                                                 | ↑↑↑                                                                               | ↵                                                                                 | ↵                                                                                 |
| Traffic Volume (veh/h)       | 2647                                                                              | 114                                                                               | 116                                                                               | 1203                                                                              | 111                                                                               | 170                                                                               |
| Future Volume (veh/h)        | 2647                                                                              | 114                                                                               | 116                                                                               | 1203                                                                              | 111                                                                               | 170                                                                               |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Ped-Bike Adj(A_pbT)          |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                | No                                                                                |                                                                                   |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Adj Flow Rate, veh/h         | 2757                                                                              | 119                                                                               | 121                                                                               | 1253                                                                              | 116                                                                               | 177                                                                               |
| Peak Hour Factor             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Cap, veh/h                   | 3250                                                                              | 138                                                                               | 149                                                                               | 3966                                                                              | 243                                                                               | 216                                                                               |
| Arrive On Green              | 0.64                                                                              | 0.64                                                                              | 0.08                                                                              | 0.76                                                                              | 0.13                                                                              | 0.13                                                                              |
| Sat Flow, veh/h              | 5273                                                                              | 217                                                                               | 1810                                                                              | 5358                                                                              | 1810                                                                              | 1610                                                                              |
| Grp Volume(v), veh/h         | 1857                                                                              | 1019                                                                              | 121                                                                               | 1253                                                                              | 116                                                                               | 177                                                                               |
| Grp Sat Flow(s),veh/h/ln     | 1729                                                                              | 1861                                                                              | 1810                                                                              | 1729                                                                              | 1810                                                                              | 1610                                                                              |
| Q Serve(g_s), s              | 43.2                                                                              | 45.1                                                                              | 6.8                                                                               | 7.7                                                                               | 6.1                                                                               | 11.0                                                                              |
| Cycle Q Clear(g_c), s        | 43.2                                                                              | 45.1                                                                              | 6.8                                                                               | 7.7                                                                               | 6.1                                                                               | 11.0                                                                              |
| Prop In Lane                 |                                                                                   | 0.12                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Lane Grp Cap(c), veh/h       | 2203                                                                              | 1186                                                                              | 149                                                                               | 3966                                                                              | 243                                                                               | 216                                                                               |
| V/C Ratio(X)                 | 0.84                                                                              | 0.86                                                                              | 0.81                                                                              | 0.32                                                                              | 0.48                                                                              | 0.82                                                                              |
| Avail Cap(c_a), veh/h        | 2283                                                                              | 1228                                                                              | 166                                                                               | 4131                                                                              | 490                                                                               | 436                                                                               |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Uniform Delay (d), s/veh     | 14.6                                                                              | 14.9                                                                              | 46.3                                                                              | 3.8                                                                               | 41.1                                                                              | 43.2                                                                              |
| Incr Delay (d2), s/veh       | 3.0                                                                               | 6.2                                                                               | 20.8                                                                              | 0.0                                                                               | 1.5                                                                               | 7.5                                                                               |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| %ile BackOfQ(50%),veh/ln     | 14.5                                                                              | 17.3                                                                              | 3.8                                                                               | 1.7                                                                               | 2.8                                                                               | 4.7                                                                               |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| LnGrp Delay(d),s/veh         | 17.6                                                                              | 21.1                                                                              | 67.1                                                                              | 3.8                                                                               | 42.6                                                                              | 50.7                                                                              |
| LnGrp LOS                    | B                                                                                 | C                                                                                 | E                                                                                 | A                                                                                 | D                                                                                 | D                                                                                 |
| Approach Vol, veh/h          | 2876                                                                              |                                                                                   |                                                                                   | 1374                                                                              | 293                                                                               |                                                                                   |
| Approach Delay, s/veh        | 18.8                                                                              |                                                                                   |                                                                                   | 9.4                                                                               | 47.5                                                                              |                                                                                   |
| Approach LOS                 | B                                                                                 |                                                                                   |                                                                                   | A                                                                                 | D                                                                                 |                                                                                   |
| Timer - Assigned Phs         | 2                                                                                 | 3                                                                                 | 4                                                                                 | 8                                                                                 |                                                                                   |                                                                                   |
| Phs Duration (G+Y+Rc), s     | 18.4                                                                              | 13.1                                                                              | 71.2                                                                              | 84.3                                                                              |                                                                                   |                                                                                   |
| Change Period (Y+Rc), s      | 4.6                                                                               | 4.6                                                                               | 5.8                                                                               | 5.8                                                                               |                                                                                   |                                                                                   |
| Max Green Setting (Gmax), s  | 27.8                                                                              | 9.4                                                                               | 67.8                                                                              | 81.8                                                                              |                                                                                   |                                                                                   |
| Max Q Clear Time (g_c+I1), s | 13.0                                                                              | 8.8                                                                               | 47.1                                                                              | 9.7                                                                               |                                                                                   |                                                                                   |
| Green Ext Time (p_c), s      | 0.8                                                                               | 0.0                                                                               | 18.3                                                                              | 11.2                                                                              |                                                                                   |                                                                                   |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 6th Ctrl Delay           |                                                                                   | 17.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 6th LOS                  |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

**\*\* Grading Improvements \*\***

OYC 2020 WP PM

Fri Nov 8, 2019 13:03:22

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions WITH IMPROVEMENTS  
PM Peak Hour

-----  
Level Of Service Computation Report  
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)  
\*\*\*\*\*  
Intersection #15 Avenida Barbosa/Dwy A / Arrow  
\*\*\*\*\*  
Cycle (sec): 100 Critical Vol./Cap.(X): 0.769  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 60 Level Of Service: C  
\*\*\*\*\*  
Approach: North Bound South Bound East Bound West Bound  
Movement: L - T - R L - T - R L - T - R L - T - R  
-----  
Control: Split Phase Split Phase Protected Permitted  
Rights: Include Include Include Include  
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0  
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0  
Lanes: 0 0 0 0 0 2 0 0 0 1 1 0 2 0 0 0 0 3 0 1  
-----  
Volume Module:  
Base Vol: 0 0 0 698 0 448 251 891 0 0 1025 253  
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
Initial Bse: 0 0 0 698 0 448 251 891 0 0 1025 253  
Added Vol: 0 0 0 99 0 11 19 2 0 0 0 90  
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0  
Initial Fut: 0 0 0 797 0 459 270 893 0 0 1025 343  
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
PHF Volume: 0 0 0 797 0 459 270 893 0 0 1025 343  
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
Reduced Vol: 0 0 0 797 0 459 270 893 0 0 1025 343  
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
FinalVolume: 0 0 0 797 0 459 270 893 0 0 1025 343  
-----  
Saturation Flow Module:  
Sat/Lane: 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600  
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
Lanes: 0.00 0.00 0.00 2.00 0.00 1.00 1.00 2.00 0.00 0.00 3.00 1.00  
Final Sat.: 0 0 0 3200 0 1600 1600 3200 0 0 4800 1600  
-----  
Capacity Analysis Module:  
Vol/Sat: 0.00 0.00 0.00 0.25 0.00 0.29 0.17 0.28 0.00 0.00 0.21 0.21  
Crit Moves: \*\*\*\* \*  
\*\*\*\*\*

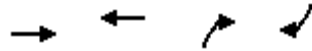
# **\*\* Grading Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

11/08/2019



| Lane Group           | EBT   | WBT   | NBR   | SBR   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑    | ↑↑    | ↗     | ↗     |
| Traffic Volume (vph) | 1310  | 1166  | 705   | 819   |
| Future Volume (vph)  | 1310  | 1166  | 705   | 819   |
| Turn Type            | NA    | NA    | Prot  | Prot  |
| Protected Phases     | 2     | 6     | 3     | 7     |
| Permitted Phases     |       |       |       |       |
| Detector Phase       | 2     | 6     | 3     | 7     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 5.0   | 5.0   |
| Minimum Split (s)    | 22.8  | 22.8  | 9.5   | 9.5   |
| Total Split (s)      | 50.0  | 50.0  | 70.0  | 70.0  |
| Total Split (%)      | 41.7% | 41.7% | 58.3% | 58.3% |
| Yellow Time (s)      | 4.8   | 4.8   | 3.5   | 3.5   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.8   | 5.8   | 4.5   | 4.5   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | None  | None  | None  | None  |

## **Intersection Summary**

Cycle Length: 120

Actuated Cycle Length: 115.4

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Splits and Phases: 23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

|      |      |
|------|------|
| → Ø2 | ↗ Ø3 |
| 50 s | 70 s |
| ← Ø6 | ↘ Ø7 |
| 50 s | 70 s |



**\*\* Grading Improvements \*\***

**HCM 6th Signalized Intersection Summary**

**The Park @ Live Oak TIA (JN 11110)**

**23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.**

11/08/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                    |                                                                                     | ↗                                                                                   |                                                                                     |                                                                                     | ↗                                                                                   |
| Traffic Volume (veh/h)       | 0                                                                                 | 1310                                                                              | 0                                                                                 | 0                                                                                 | 1166                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 705                                                                                 | 0                                                                                   | 0                                                                                   | 819                                                                                 |
| Future Volume (veh/h)        | 0                                                                                 | 1310                                                                              | 0                                                                                 | 0                                                                                 | 1166                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 705                                                                                 | 0                                                                                   | 0                                                                                   | 819                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h         | 0                                                                                 | 1351                                                                              | 0                                                                                 | 0                                                                                 | 1202                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                               | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 0                                                                                 | 2998                                                                              | 0                                                                                 | 0                                                                                 | 2998                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Arrive On Green              | 0.00                                                                              | 0.83                                                                              | 0.00                                                                              | 0.00                                                                              | 0.83                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 0                                                                                 | 3800                                                                              | 0                                                                                 | 0                                                                                 | 3800                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h         | 0                                                                                 | 1351                                                                              | 0                                                                                 | 0                                                                                 | 1202                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 0                                                                                 | 1805                                                                              | 0                                                                                 | 0                                                                                 | 1805                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 0.0                                                                               | 3.5                                                                               | 0.0                                                                               | 0.0                                                                               | 2.9                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 3.5                                                                               | 0.0                                                                               | 0.0                                                                               | 2.9                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 0.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 0                                                                                 | 2998                                                                              | 0                                                                                 | 0                                                                                 | 2998                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.00                                                                              | 0.45                                                                              | 0.00                                                                              | 0.00                                                                              | 0.40                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 0                                                                                 | 4665                                                                              | 0                                                                                 | 0                                                                                 | 4665                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 0.8                                                                               | 0.0                                                                               | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.9                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 1351                                                                              |                                                                                   |                                                                                   |                                                                                   | 1202                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.9                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 34.2                                                                              |                                                                                   |                                                                                   |                                                                                   | 34.2                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 44.2                                                                              |                                                                                   |                                                                                   |                                                                                   | 44.2                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.9                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 22.9                                                                              |                                                                                   |                                                                                   |                                                                                   | 20.0                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**Notes**

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

**\*\* Construction Improvements \*\***

OYC 2020 WP AM

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions WITH IMPROVEMENTS  
AM Peak Hour

```
-----
                        Level Of Service Computation Report
                        ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #4 Live Oak / Arrow (West)
*****
Cycle (sec):           100                Critical Vol./Cap.(X):           0.951
Loss Time (sec):       10                Average Delay (sec/veh):           xxxxxx
Optimal Cycle:         134                Level Of Service:           E
*****
Approach:              North Bound        South Bound        East Bound        West Bound
Movement:              L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:               Split Phase        Split Phase        Protected        Protected
Rights:                Include            Include            Include            Include
Min. Green:            0    0    0          0    0    0          0    0    0          0    0    0
Y+R:                   4.0  4.0  4.0        4.0  4.0  4.0        4.0  4.0  4.0        4.0  4.0  4.0
Lanes:                 2  0  0  0  1          0  0  0  0  0          0  0  2  0  0          2  0  3  0  0
-----|-----|-----|-----|
Volume Module:
Base Vol:              1090    0    313          0    0    0          0  539    0    291 1931    0
Growth Adj:            1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00
Initial Bse:           1090    0    313          0    0    0          0  539    0    291 1931    0
Added Vol:             0    0    403          0    0    0          0  15    0    45    6    0
PasserByVol:           0    0    0            0    0    0          0    0    0          0    0    0
Initial Fut:           1090    0    716          0    0    0          0  554    0    336 1937    0
User Adj:              1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00
PHF Adj:               1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00
PHF Volume:            1090    0    716          0    0    0          0  554    0    336 1937    0
Reduct Vol:            0    0    0            0    0    0          0    0    0          0    0    0
Reduced Vol:           1090    0    716          0    0    0          0  554    0    336 1937    0
PCE Adj:               1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00
MLF Adj:               1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00
FinalVolume:           1090    0    716          0    0    0          0  554    0    336 1937    0
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1600 1600  1600        1600 1600  1600        1600 1600  1600        1600 1600  1600
Adjustment:            1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00        1.00  1.00  1.00
Lanes:                 2.00  0.00  1.00        0.00  0.00  0.00        0.00  2.00  0.00        2.00  3.00  0.00
Final Sat.:            3200    0  1600          0    0    0          0  3200    0  3200 4800    0
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.34  0.00  0.45    0.00  0.00  0.00    0.00  0.17  0.00    0.11  0.40  0.00
Crit Moves:           ****                      ****                      ****
*****
```

# **\*\* Construction Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

7: Speedway Dwy. & Live Oak Av.

11/08/2019

|                      | →     | ↖     | ←     | ↙     | ↗     |
|----------------------|-------|-------|-------|-------|-------|
| Lane Group           | EBT   | WBL   | WBT   | NBL   | NBR   |
| Lane Configurations  | ↑↑↑   | ↖     | ↑↑↑   | ↖     | ↗     |
| Traffic Volume (vph) | 1013  | 70    | 1685  | 30    | 46    |
| Future Volume (vph)  | 1013  | 70    | 1685  | 30    | 46    |
| Turn Type            | NA    | Prot  | NA    | Prot  | Perm  |
| Protected Phases     | 4     | 3     | 8     | 2     |       |
| Permitted Phases     |       |       |       |       | 2     |
| Detector Phase       | 4     | 3     | 8     | 2     | 2     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 5.0   | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 27.8  | 9.6   | 15.8  | 31.6  | 31.6  |
| Total Split (s)      | 27.8  | 10.0  | 37.8  | 32.2  | 32.2  |
| Total Split (%)      | 39.7% | 14.3% | 54.0% | 46.0% | 46.0% |
| Yellow Time (s)      | 4.8   | 3.6   | 4.8   | 3.6   | 3.6   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.8   | 4.6   | 5.8   | 4.6   | 4.6   |
| Lead/Lag             | Lag   | Lead  |       |       |       |
| Lead-Lag Optimize?   | Yes   | Yes   |       |       |       |
| Recall Mode          | None  | None  | None  | Min   | Min   |

## Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 51.1

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Speedway Dwy. & Live Oak Av.

|        |        |        |
|--------|--------|--------|
| ↖ Ø2   | ↖ Ø3   | → Ø4   |
| 32.2 s | 10 s   | 27.8 s |
|        | ← Ø8   |        |
|        | 37.8 s |        |

**\*\* Construction Improvements \*\***

HCM 6th Signalized Intersection Summary

The Park @ Live Oak TIA (JN 11110)

7: Speedway Dwy. & Live Oak Av.

11/08/2019

|                              |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                     | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                               |
| Lane Configurations          |  |                                                                                   |  |  |  |  |
| Traffic Volume (veh/h)       | 1013                                                                              | 74                                                                                | 70                                                                                | 1685                                                                              | 30                                                                                | 46                                                                                |
| Future Volume (veh/h)        | 1013                                                                              | 74                                                                                | 70                                                                                | 1685                                                                              | 30                                                                                | 46                                                                                |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Ped-Bike Adj(A_pbT)          |                                                                                   | 0.98                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                | No                                                                                |                                                                                   |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Adj Flow Rate, veh/h         | 1044                                                                              | 76                                                                                | 72                                                                                | 1737                                                                              | 31                                                                                | 47                                                                                |
| Peak Hour Factor             | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Cap, veh/h                   | 1833                                                                              | 133                                                                               | 120                                                                               | 2810                                                                              | 406                                                                               | 362                                                                               |
| Arrive On Green              | 0.37                                                                              | 0.37                                                                              | 0.07                                                                              | 0.54                                                                              | 0.22                                                                              | 0.22                                                                              |
| Sat Flow, veh/h              | 5096                                                                              | 358                                                                               | 1810                                                                              | 5358                                                                              | 1810                                                                              | 1610                                                                              |
| Grp Volume(v), veh/h         | 733                                                                               | 387                                                                               | 72                                                                                | 1737                                                                              | 31                                                                                | 47                                                                                |
| Grp Sat Flow(s),veh/h/ln     | 1729                                                                              | 1825                                                                              | 1810                                                                              | 1729                                                                              | 1810                                                                              | 1610                                                                              |
| Q Serve(g_s), s              | 7.5                                                                               | 7.5                                                                               | 1.7                                                                               | 10.3                                                                              | 0.6                                                                               | 1.0                                                                               |
| Cycle Q Clear(g_c), s        | 7.5                                                                               | 7.5                                                                               | 1.7                                                                               | 10.3                                                                              | 0.6                                                                               | 1.0                                                                               |
| Prop In Lane                 |                                                                                   | 0.20                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Lane Grp Cap(c), veh/h       | 1287                                                                              | 679                                                                               | 120                                                                               | 2810                                                                              | 406                                                                               | 362                                                                               |
| V/C Ratio(X)                 | 0.57                                                                              | 0.57                                                                              | 0.60                                                                              | 0.62                                                                              | 0.08                                                                              | 0.13                                                                              |
| Avail Cap(c_a), veh/h        | 1709                                                                              | 902                                                                               | 219                                                                               | 3728                                                                              | 1122                                                                              | 998                                                                               |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Uniform Delay (d), s/veh     | 11.1                                                                              | 11.1                                                                              | 20.2                                                                              | 7.0                                                                               | 13.6                                                                              | 13.8                                                                              |
| Incr Delay (d2), s/veh       | 0.4                                                                               | 0.8                                                                               | 1.8                                                                               | 0.2                                                                               | 0.1                                                                               | 0.2                                                                               |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| %ile BackOfQ(50%),veh/ln     | 2.0                                                                               | 2.2                                                                               | 0.7                                                                               | 1.9                                                                               | 0.2                                                                               | 0.3                                                                               |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| LnGrp Delay(d),s/veh         | 11.5                                                                              | 11.9                                                                              | 22.0                                                                              | 7.3                                                                               | 13.7                                                                              | 13.9                                                                              |
| LnGrp LOS                    | B                                                                                 | B                                                                                 | C                                                                                 | A                                                                                 | B                                                                                 | B                                                                                 |
| Approach Vol, veh/h          | 1120                                                                              |                                                                                   |                                                                                   | 1809                                                                              | 78                                                                                |                                                                                   |
| Approach Delay, s/veh        | 11.7                                                                              |                                                                                   |                                                                                   | 7.8                                                                               | 13.8                                                                              |                                                                                   |
| Approach LOS                 | B                                                                                 |                                                                                   |                                                                                   | A                                                                                 | B                                                                                 |                                                                                   |
| Timer - Assigned Phs         | 2                                                                                 | 3                                                                                 | 4                                                                                 | 8                                                                                 |                                                                                   |                                                                                   |
| Phs Duration (G+Y+Rc), s     | 14.6                                                                              | 7.5                                                                               | 22.4                                                                              | 29.9                                                                              |                                                                                   |                                                                                   |
| Change Period (Y+Rc), s      | 4.6                                                                               | 4.6                                                                               | 5.8                                                                               | 5.8                                                                               |                                                                                   |                                                                                   |
| Max Green Setting (Gmax), s  | 27.6                                                                              | 5.4                                                                               | 22.0                                                                              | 32.0                                                                              |                                                                                   |                                                                                   |
| Max Q Clear Time (g_c+I1), s | 3.0                                                                               | 3.7                                                                               | 9.5                                                                               | 12.3                                                                              |                                                                                   |                                                                                   |
| Green Ext Time (p_c), s      | 0.2                                                                               | 0.0                                                                               | 5.4                                                                               | 11.8                                                                              |                                                                                   |                                                                                   |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 6th Ctrl Delay           |                                                                                   | 9.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 6th LOS                  |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

**\*\* Construction Improvements \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions WITH IMPROVEMENTS  
AM Peak Hour

-----  
Level Of Service Computation Report  
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)  
\*\*\*\*\*  
Intersection #15 Avenida Barbosa/Dwy A / Arrow  
\*\*\*\*\*  
Cycle (sec): 100 Critical Vol./Cap.(X): 0.966  
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 150 Level Of Service: E  
\*\*\*\*\*  
Approach: North Bound South Bound East Bound West Bound  
Movement: L - T - R L - T - R L - T - R L - T - R  
-----  
Control: Split Phase Split Phase Protected Permitted  
Rights: Include Include Include Include  
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0  
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0  
Lanes: 0 0 0 0 0 2 0 0 0 1 1 0 2 0 0 0 0 3 0 1  
-----  
Volume Module:  
Base Vol: 0 0 0 220 0 194 334 518 0 0 2038 698  
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
Initial Bse: 0 0 0 220 0 194 334 518 0 0 2038 698  
Added Vol: 0 0 0 97 0 10 55 161 0 0 0 95  
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0  
Initial Fut: 0 0 0 317 0 204 389 679 0 0 2038 793  
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
PHF Volume: 0 0 0 317 0 204 389 679 0 0 2038 793  
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
Reduced Vol: 0 0 0 317 0 204 389 679 0 0 2038 793  
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
FinalVolume: 0 0 0 317 0 204 389 679 0 0 2038 793  
-----  
Saturation Flow Module:  
Sat/Lane: 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600  
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
Lanes: 0.00 0.00 0.00 2.00 0.00 1.00 1.00 2.00 0.00 0.00 3.00 1.00  
Final Sat.: 0 0 0 3200 0 1600 1600 3200 0 0 4800 1600  
-----  
Capacity Analysis Module:  
Vol/Sat: 0.00 0.00 0.00 0.10 0.00 0.13 0.24 0.21 0.00 0.00 0.42 0.50  
Crit Moves: \*\*\*\* \*  
\*\*\*\*\*

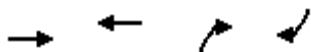
# **\*\* Construction Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

11/08/2019



| Lane Group           | EBT   | WBT   | NBR   | SBR   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑    | ↑↑    | ↗     | ↗     |
| Traffic Volume (vph) | 366   | 1726  | 666   | 844   |
| Future Volume (vph)  | 366   | 1726  | 666   | 844   |
| Turn Type            | NA    | NA    | Prot  | Prot  |
| Protected Phases     | 2     | 6     | 3     | 7     |
| Permitted Phases     |       |       |       |       |
| Detector Phase       | 2     | 6     | 3     | 7     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 5.0   | 5.0   |
| Minimum Split (s)    | 22.8  | 22.8  | 9.5   | 9.5   |
| Total Split (s)      | 58.0  | 58.0  | 62.0  | 62.0  |
| Total Split (%)      | 48.3% | 48.3% | 51.7% | 51.7% |
| Yellow Time (s)      | 4.8   | 4.8   | 3.5   | 3.5   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.8   | 5.8   | 4.5   | 4.5   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | None  | None  | None  | None  |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Splits and Phases: 23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

|      |      |
|------|------|
| → Ø2 | ↗ Ø3 |
| 58 s | 62 s |
| ← Ø6 | ↘ Ø7 |
| 58 s | 62 s |

**\*\* Construction Improvements \*\***

HCM 6th Signalized Intersection Summary

The Park @ Live Oak TIA (JN 11110)

23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

11/08/2019

|                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                    |                                                                                     | ↑                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |
| Traffic Volume (veh/h)                                                                                        | 0                                                                                 | 366                                                                               | 0                                                                                 | 0                                                                                 | 1726                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 666                                                                                 | 0                                                                                   | 0                                                                                   | 844                                                                                 |
| Future Volume (veh/h)                                                                                         | 0                                                                                 | 366                                                                               | 0                                                                                 | 0                                                                                 | 1726                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 666                                                                                 | 0                                                                                   | 0                                                                                   | 844                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 0                                                                                 | 398                                                                               | 0                                                                                 | 0                                                                                 | 1876                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor                                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                                          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                                    | 0                                                                                 | 3188                                                                              | 0                                                                                 | 0                                                                                 | 3188                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Arrive On Green                                                                                               | 0.00                                                                              | 0.88                                                                              | 0.00                                                                              | 0.00                                                                              | 0.88                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h                                                                                               | 0                                                                                 | 3800                                                                              | 0                                                                                 | 0                                                                                 | 3800                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h                                                                                          | 0                                                                                 | 398                                                                               | 0                                                                                 | 0                                                                                 | 1876                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 0                                                                                 | 1805                                                                              | 0                                                                                 | 0                                                                                 | 1805                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s                                                                                               | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               | 0.0                                                                               | 6.3                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s                                                                                         | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               | 0.0                                                                               | 6.3                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                                                                                                  | 0.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h                                                                                        | 0                                                                                 | 3188                                                                              | 0                                                                                 | 0                                                                                 | 3188                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                                                                                                  | 0.00                                                                              | 0.12                                                                              | 0.00                                                                              | 0.00                                                                              | 0.59                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h                                                                                         | 0                                                                                 | 3801                                                                              | 0                                                                                 | 0                                                                                 | 3801                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)                                                                                            | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh                                                                                      | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh                                                                                        | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln                                                                                      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 0.0                                                                               | 1.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h                                                                                           |                                                                                   | 398                                                                               |                                                                                   |                                                                                   | 1876                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                         |                                                                                   | 0.4                                                                               |                                                                                   |                                                                                   | 1.1                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                                                                  |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                          |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      |                                                                                   | 49.6                                                                              |                                                                                   |                                                                                   | 49.6                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   |                                                                                   | 52.2                                                                              |                                                                                   |                                                                                   | 52.2                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  |                                                                                   | 2.7                                                                               |                                                                                   |                                                                                   | 8.3                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       |                                                                                   | 5.2                                                                               |                                                                                   |                                                                                   | 35.5                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**\*\* Construction Improvements \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions WITH IMPROVEMENTS  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Live Oak / Arrow (West)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 1.835

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Protected  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 2           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 1   | 1          | 0   | 0   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 905  | 0    | 336  | 0    | 0    | 0    | 0    | 807  | 1990 | 606  | 866  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 905  | 0    | 336  | 0    | 0    | 0    | 0    | 807  | 1990 | 606  | 866  | 0    |
| Added Vol:   | 0    | 0    | 10   | 0    | 0    | 0    | 0    | 0    | 0    | 61   | 9    | 0    |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 905  | 0    | 346  | 0    | 0    | 0    | 0    | 807  | 1990 | 667  | 875  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 905  | 0    | 346  | 0    | 0    | 0    | 0    | 807  | 1990 | 667  | 875  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 905  | 0    | 346  | 0    | 0    | 0    | 0    | 807  | 1990 | 667  | 875  | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 905  | 0    | 346  | 0    | 0    | 0    | 0    | 807  | 1990 | 667  | 875  | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 2.00 | 3.00 | 0.00 |
| Final Sat.: | 3200 | 0    | 1600 | 0    | 0    | 0    | 0    | 1600 | 1600 | 3200 | 4800 | 0    |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.28 | 0.00 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 1.24 | 0.21 | 0.18 | 0.00 |
| Crit Moves: | **** |      |      |      |      |      |      |      | **** | **** |      |      |

\*\*\*\*\*



# **\*\* Construction Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

7: Speedway Dwy. & Live Oak Av.

11/08/2019

|                      | →     | ↖     | ←     | ↗     | ↘     |
|----------------------|-------|-------|-------|-------|-------|
| Lane Group           | EBT   | WBL   | WBT   | NBL   | NBR   |
| Lane Configurations  | ↑↑↑   | ↖     | ↑↑↑   | ↖     | ↖     |
| Traffic Volume (vph) | 2690  | 116   | 1203  | 111   | 170   |
| Future Volume (vph)  | 2690  | 116   | 1203  | 111   | 170   |
| Turn Type            | NA    | Prot  | NA    | Prot  | Perm  |
| Protected Phases     | 4     | 3     | 8     | 2     |       |
| Permitted Phases     |       |       |       |       | 2     |
| Detector Phase       | 4     | 3     | 8     | 2     | 2     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 5.0   | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 27.8  | 9.6   | 15.8  | 31.6  | 31.6  |
| Total Split (s)      | 73.6  | 14.0  | 87.6  | 32.4  | 32.4  |
| Total Split (%)      | 61.3% | 11.7% | 73.0% | 27.0% | 27.0% |
| Yellow Time (s)      | 4.8   | 3.6   | 4.8   | 3.6   | 3.6   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.8   | 4.6   | 5.8   | 4.6   | 4.6   |
| Lead/Lag             | Lag   | Lead  |       |       |       |
| Lead-Lag Optimize?   | Yes   | Yes   |       |       |       |
| Recall Mode          | None  | None  | None  | Min   | Min   |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 106.6

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Speedway Dwy. & Live Oak Av.

|        |        |        |
|--------|--------|--------|
| ↖ Ø2   | ↖ Ø3   | → Ø4   |
| 32.4 s | 14 s   | 73.6 s |
|        | ← Ø8   |        |
|        | 87.6 s |        |

**\*\* Construction Improvements \*\***

**HCM 6th Signalized Intersection Summary**

**The Park @ Live Oak TIA (JN 11110)**

**7: Speedway Dwy. & Live Oak Av.**

11/08/2019

|                              |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                     | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                               |
| Lane Configurations          | ↑↑↑                                                                               |                                                                                   | ↵                                                                                 | ↑↑↑                                                                               | ↵                                                                                 | ↵                                                                                 |
| Traffic Volume (veh/h)       | 2690                                                                              | 114                                                                               | 116                                                                               | 1203                                                                              | 111                                                                               | 170                                                                               |
| Future Volume (veh/h)        | 2690                                                                              | 114                                                                               | 116                                                                               | 1203                                                                              | 111                                                                               | 170                                                                               |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Ped-Bike Adj(A_pbT)          |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                | No                                                                                |                                                                                   |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Adj Flow Rate, veh/h         | 2802                                                                              | 119                                                                               | 121                                                                               | 1253                                                                              | 116                                                                               | 177                                                                               |
| Peak Hour Factor             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Cap, veh/h                   | 3258                                                                              | 136                                                                               | 149                                                                               | 3969                                                                              | 243                                                                               | 216                                                                               |
| Arrive On Green              | 0.64                                                                              | 0.64                                                                              | 0.08                                                                              | 0.77                                                                              | 0.13                                                                              | 0.13                                                                              |
| Sat Flow, veh/h              | 5277                                                                              | 214                                                                               | 1810                                                                              | 5358                                                                              | 1810                                                                              | 1610                                                                              |
| Grp Volume(v), veh/h         | 1885                                                                              | 1036                                                                              | 121                                                                               | 1253                                                                              | 116                                                                               | 177                                                                               |
| Grp Sat Flow(s),veh/h/ln     | 1729                                                                              | 1862                                                                              | 1810                                                                              | 1729                                                                              | 1810                                                                              | 1610                                                                              |
| Q Serve(g_s), s              | 44.8                                                                              | 46.9                                                                              | 6.8                                                                               | 7.7                                                                               | 6.1                                                                               | 11.0                                                                              |
| Cycle Q Clear(g_c), s        | 44.8                                                                              | 46.9                                                                              | 6.8                                                                               | 7.7                                                                               | 6.1                                                                               | 11.0                                                                              |
| Prop In Lane                 |                                                                                   | 0.11                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Lane Grp Cap(c), veh/h       | 2207                                                                              | 1188                                                                              | 149                                                                               | 3969                                                                              | 243                                                                               | 216                                                                               |
| V/C Ratio(X)                 | 0.85                                                                              | 0.87                                                                              | 0.81                                                                              | 0.32                                                                              | 0.48                                                                              | 0.82                                                                              |
| Avail Cap(c_a), veh/h        | 2270                                                                              | 1222                                                                              | 165                                                                               | 4108                                                                              | 487                                                                               | 433                                                                               |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Uniform Delay (d), s/veh     | 14.9                                                                              | 15.2                                                                              | 46.6                                                                              | 3.8                                                                               | 41.4                                                                              | 43.5                                                                              |
| Incr Delay (d2), s/veh       | 3.3                                                                               | 7.0                                                                               | 21.1                                                                              | 0.0                                                                               | 1.5                                                                               | 7.5                                                                               |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| %ile BackOfQ(50%),veh/ln     | 15.2                                                                              | 18.2                                                                              | 3.8                                                                               | 1.8                                                                               | 2.8                                                                               | 4.7                                                                               |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| LnGrp Delay(d),s/veh         | 18.2                                                                              | 22.2                                                                              | 67.7                                                                              | 3.8                                                                               | 42.8                                                                              | 51.0                                                                              |
| LnGrp LOS                    | B                                                                                 | C                                                                                 | E                                                                                 | A                                                                                 | D                                                                                 | D                                                                                 |
| Approach Vol, veh/h          | 2921                                                                              |                                                                                   |                                                                                   | 1374                                                                              | 293                                                                               |                                                                                   |
| Approach Delay, s/veh        | 19.6                                                                              |                                                                                   |                                                                                   | 9.4                                                                               | 47.8                                                                              |                                                                                   |
| Approach LOS                 | B                                                                                 |                                                                                   |                                                                                   | A                                                                                 | D                                                                                 |                                                                                   |
| Timer - Assigned Phs         | 2                                                                                 | 3                                                                                 | 4                                                                                 | 8                                                                                 |                                                                                   |                                                                                   |
| Phs Duration (G+Y+Rc), s     | 18.4                                                                              | 13.1                                                                              | 71.7                                                                              | 84.8                                                                              |                                                                                   |                                                                                   |
| Change Period (Y+Rc), s      | 4.6                                                                               | 4.6                                                                               | 5.8                                                                               | 5.8                                                                               |                                                                                   |                                                                                   |
| Max Green Setting (Gmax), s  | 27.8                                                                              | 9.4                                                                               | 67.8                                                                              | 81.8                                                                              |                                                                                   |                                                                                   |
| Max Q Clear Time (g_c+I1), s | 13.0                                                                              | 8.8                                                                               | 48.9                                                                              | 9.7                                                                               |                                                                                   |                                                                                   |
| Green Ext Time (p_c), s      | 0.8                                                                               | 0.0                                                                               | 17.0                                                                              | 11.2                                                                              |                                                                                   |                                                                                   |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 6th Ctrl Delay           |                                                                                   | 18.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 6th LOS                  |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

**\*\* Construction Improvements \*\***

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The Park @ Live Oak (JN 11110)  
Opening Year Cumulative (2020) With Project Conditions WITH IMPROVEMENTS  
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #15 Avenida Barbosa/Dwy A / Arrow

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.803

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 67 Level Of Service: D

\*\*\*\*\*

| Approach:   | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-------------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement:   | L           | T   | R   | L           | T   | R   | L          | T   | R   | L          | T   | R   |
| Control:    | Split Phase |     |     | Split Phase |     |     | Protected  |     |     | Permitted  |     |     |
| Rights:     | Include     |     |     | Include     |     |     | Include    |     |     | Include    |     |     |
| Min. Green: | 0           | 0   | 0   | 0           | 0   | 0   | 0          | 0   | 0   | 0          | 0   | 0   |
| Y+R:        | 4.0         | 4.0 | 4.0 | 4.0         | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 | 4.0        | 4.0 | 4.0 |
| Lanes:      | 0           | 0   | 0   | 0           | 0   | 0   | 1          | 0   | 2   | 0          | 0   | 1   |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 0    | 0    | 698  | 0    | 448  | 251  | 891  | 0    | 0    | 1025 | 253  |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 0    | 0    | 698  | 0    | 448  | 251  | 891  | 0    | 0    | 1025 | 253  |
| Added Vol:   | 0    | 0    | 0    | 99   | 0    | 11   | 73   | 100  | 0    | 0    | 0    | 90   |
| PasserByVol: | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Fut: | 0    | 0    | 0    | 797  | 0    | 459  | 324  | 991  | 0    | 0    | 1025 | 343  |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 0    | 0    | 797  | 0    | 459  | 324  | 991  | 0    | 0    | 1025 | 343  |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 0    | 0    | 797  | 0    | 459  | 324  | 991  | 0    | 0    | 1025 | 343  |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0    | 0    | 0    | 797  | 0    | 459  | 324  | 991  | 0    | 0    | 1025 | 343  |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Sat/Lane:   | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 3.00 | 1.00 |
| Final Sat.: | 0    | 0    | 0    | 3200 | 0    | 1600 | 1600 | 3200 | 0    | 0    | 4800 | 1600 |

Capacity Analysis Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:    | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.29 | 0.20 | 0.31 | 0.00 | 0.00 | 0.21 | 0.21 |
| Crit Moves: |      |      |      | **** |      | **** |      |      |      |      | **** |      |

\*\*\*\*\*

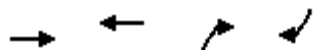
# **\*\* Construction Improvements \*\***

Timings

The Park @ Live Oak TIA (JN 11110)

23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

11/08/2019



| Lane Group           | EBT   | WBT   | NBR   | SBR   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑    | ↑↑    | ↗     | ↗     |
| Traffic Volume (vph) | 1310  | 1258  | 705   | 819   |
| Future Volume (vph)  | 1310  | 1258  | 705   | 819   |
| Turn Type            | NA    | NA    | Prot  | Prot  |
| Protected Phases     | 2     | 6     | 3     | 7     |
| Permitted Phases     |       |       |       |       |
| Detector Phase       | 2     | 6     | 3     | 7     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 5.0   | 5.0   |
| Minimum Split (s)    | 22.8  | 22.8  | 9.5   | 9.5   |
| Total Split (s)      | 50.0  | 50.0  | 70.0  | 70.0  |
| Total Split (%)      | 41.7% | 41.7% | 58.3% | 58.3% |
| Yellow Time (s)      | 4.8   | 4.8   | 3.5   | 3.5   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.8   | 5.8   | 4.5   | 4.5   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | None  | None  | None  | None  |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 115.4

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Splits and Phases: 23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.

|      |      |
|------|------|
| → Ø2 | ↗ Ø3 |
| 50 s | 70 s |
| ← Ø6 | ↘ Ø7 |
| 50 s | 70 s |

**\*\* Construction Improvements \*\***

**HCM 6th Signalized Intersection Summary**

**The Park @ Live Oak TIA (JN 11110)**

**23: I-605 NB Off-Ramp/I-605 NB Loop Off-Ramp & Live Oak Av.**

11/08/2019

|                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                    |                                                                                     | ↑                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |
| Traffic Volume (veh/h)                                                                                        | 0                                                                                 | 1310                                                                              | 0                                                                                 | 0                                                                                 | 1258                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 705                                                                                 | 0                                                                                   | 0                                                                                   | 819                                                                                 |
| Future Volume (veh/h)                                                                                         | 0                                                                                 | 1310                                                                              | 0                                                                                 | 0                                                                                 | 1258                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 705                                                                                 | 0                                                                                   | 0                                                                                   | 819                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                 | 1900                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 0                                                                                 | 1351                                                                              | 0                                                                                 | 0                                                                                 | 1297                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor                                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                               | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %                                                                                          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                                    | 0                                                                                 | 2998                                                                              | 0                                                                                 | 0                                                                                 | 2998                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Arrive On Green                                                                                               | 0.00                                                                              | 0.83                                                                              | 0.00                                                                              | 0.00                                                                              | 0.83                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h                                                                                               | 0                                                                                 | 3800                                                                              | 0                                                                                 | 0                                                                                 | 3800                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h                                                                                          | 0                                                                                 | 1351                                                                              | 0                                                                                 | 0                                                                                 | 1297                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 0                                                                                 | 1805                                                                              | 0                                                                                 | 0                                                                                 | 1805                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s                                                                                               | 0.0                                                                               | 3.5                                                                               | 0.0                                                                               | 0.0                                                                               | 3.3                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s                                                                                         | 0.0                                                                               | 3.5                                                                               | 0.0                                                                               | 0.0                                                                               | 3.3                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                                                                                                  | 0.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h                                                                                        | 0                                                                                 | 2998                                                                              | 0                                                                                 | 0                                                                                 | 2998                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                                                                                                  | 0.00                                                                              | 0.45                                                                              | 0.00                                                                              | 0.00                                                                              | 0.43                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h                                                                                         | 0                                                                                 | 4665                                                                              | 0                                                                                 | 0                                                                                 | 4665                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(l)                                                                                            | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh                                                                                      | 0.0                                                                               | 0.8                                                                               | 0.0                                                                               | 0.0                                                                               | 0.8                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh                                                                                        | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln                                                                                      | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h                                                                                           |                                                                                   | 1351                                                                              |                                                                                   |                                                                                   | 1297                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                         |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                                                                  |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                          |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      |                                                                                   | 34.2                                                                              |                                                                                   |                                                                                   | 34.2                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   |                                                                                   | 44.2                                                                              |                                                                                   |                                                                                   | 44.2                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  |                                                                                   | 5.5                                                                               |                                                                                   |                                                                                   | 5.3                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       |                                                                                   | 22.9                                                                              |                                                                                   |                                                                                   | 21.9                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**Attachment D (Refer to Response I-6)**  
**Urban Crossroads, Inc. Revised CalEEMod Outputs**

The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**The Park @ Live Oak (Parking)**  
**South Coast AQMD Air District, Winter**

## 1.0 Project Characteristics

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### 1.1 Land Usage

| Land Uses              | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|------------------------|------|--------|-------------|--------------------|------------|
| Other Asphalt Surfaces | 3.79 | Acre   | 3.79        | 165,092.40         | 0          |

### 1.2 Other Project Characteristics

|                                 |                            |                                 |       |                                  |       |
|---------------------------------|----------------------------|---------------------------------|-------|----------------------------------|-------|
| <b>Urbanization</b>             | Urban                      | <b>Wind Speed (m/s)</b>         | 2.2   | <b>Precipitation Freq (Days)</b> | 31    |
| <b>Climate Zone</b>             | 9                          |                                 |       | <b>Operational Year</b>          | 2020  |
| <b>Utility Company</b>          | Southern California Edison |                                 |       |                                  |       |
| <b>CO2 Intensity (lb/MW hr)</b> | 702.44                     | <b>CH4 Intensity (lb/MW hr)</b> | 0.029 | <b>N2O Intensity (lb/MW hr)</b>  | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction Schedule adjusted to meet OY.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment - Equipment confirmed by Client

Off-road Equipment - Hours based on an 8-hour workday.

Grading -

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

| Table Name           | Column Name                | Default Value | New Value        |
|----------------------|----------------------------|---------------|------------------|
| tblConstructionPhase | NumDays                    | 18.00         | 180.00           |
| tblConstructionPhase | NumDays                    | 8.00          | 110.00           |
| tblConstructionPhase | NumDays                    | 18.00         | 75.00            |
| tblConstructionPhase | NumDays                    | 5.00          | 40.00            |
| tblConstructionPhase | PhaseEndDate               | 7/23/2020     | 12/18/2020       |
| tblConstructionPhase | PhaseEndDate               | 6/3/2020      | 12/11/2020       |
| tblConstructionPhase | PhaseEndDate               | 7/17/2019     | 1/24/2020        |
| tblConstructionPhase | PhaseEndDate               | 6/29/2020     | 12/18/2020       |
| tblConstructionPhase | PhaseEndDate               | 7/5/2019      | 8/23/2019        |
| tblConstructionPhase | PhaseStartDate             | 6/30/2020     | 4/11/2020        |
| tblConstructionPhase | PhaseStartDate             | 7/18/2019     | 1/25/2020        |
| tblConstructionPhase | PhaseStartDate             | 7/6/2019      | 8/24/2019        |
| tblConstructionPhase | PhaseStartDate             | 6/4/2020      | 9/5/2020         |
| tblOffRoadEquipment  | LoadFactor                 | 0.43          | 0.43             |
| tblOffRoadEquipment  | LoadFactor                 | 0.43          | 0.43             |
| tblOffRoadEquipment  | LoadFactor                 | 0.48          | 0.48             |
| tblOffRoadEquipment  | LoadFactor                 | 0.43          | 0.43             |
| tblOffRoadEquipment  | OffRoadEquipmentType       |               | Crawler Tractors |
| tblOffRoadEquipment  | OffRoadEquipmentType       |               | Crawler Tractors |
| tblOffRoadEquipment  | OffRoadEquipmentType       |               | Scrapers         |
| tblOffRoadEquipment  | OffRoadEquipmentType       |               | Crawler Tractors |
| tblOffRoadEquipment  | OffRoadEquipmentUnitAmount | 2.00          | 0.00             |
| tblOffRoadEquipment  | OffRoadEquipmentUnitAmount | 1.00          | 0.00             |
| tblOffRoadEquipment  | OffRoadEquipmentUnitAmount | 1.00          | 2.00             |
| tblOffRoadEquipment  | OffRoadEquipmentUnitAmount | 1.00          | 2.00             |
| tblOffRoadEquipment  | OffRoadEquipmentUnitAmount | 3.00          | 0.00             |



## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

|                     |                            |      |      |
|---------------------|----------------------------|------|------|
| tbloffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tbloffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 0.00 |
| tbloffRoadEquipment | UsageHours                 | 6.00 | 8.00 |
| tbloffRoadEquipment | UsageHours                 | 7.00 | 8.00 |
| tbloffRoadEquipment | UsageHours                 | 7.00 | 8.00 |

## 2.0 Emissions Summary

---

The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

## 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   |            |            |        |        |            |
| 2019    | 5.9342 | 68.1775 | 34.8076 | 0.0738 | 20.3885       | 2.9702       | 23.3587    | 10.2131        | 2.7326        | 12.9457     | 0.0000   | 7,311.0927 | 7,311.0927 | 2.2502 | 0.0000 | 7,367.3465 |
| 2020    | 5.7939 | 61.0251 | 37.8472 | 0.0837 | 9.9574        | 2.4737       | 12.4311    | 3.7703         | 2.2783        | 6.0461      | 0.0000   | 8,135.4360 | 8,135.4360 | 2.2492 | 0.0000 | 8,181.5376 |
| Maximum | 5.9342 | 68.1775 | 37.8472 | 0.0837 | 20.3885       | 2.9702       | 23.3587    | 10.2131        | 2.7326        | 12.9457     | 0.0000   | 8,135.4360 | 8,135.4360 | 2.2502 | 0.0000 | 8,181.5376 |

### 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   |            |            |        |        |            |
| 2019    | 5.9342 | 68.1775 | 34.8076 | 0.0738 | 20.3885       | 2.9702       | 23.3587    | 10.2131        | 2.7326        | 12.9457     | 0.0000   | 7,311.0926 | 7,311.0926 | 2.2502 | 0.0000 | 7,367.3465 |
| 2020    | 5.7939 | 61.0251 | 37.8472 | 0.0837 | 9.9574        | 2.4737       | 12.4311    | 3.7703         | 2.2783        | 6.0461      | 0.0000   | 8,135.4360 | 8,135.4360 | 2.2492 | 0.0000 | 8,181.5376 |
| Maximum | 5.9342 | 68.1775 | 37.8472 | 0.0837 | 20.3885       | 2.9702       | 23.3587    | 10.2131        | 2.7326        | 12.9457     | 0.0000   | 8,135.4360 | 8,135.4360 | 2.2502 | 0.0000 | 8,181.5376 |

[illegible]

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**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         | 0.0711        | 0.0000        | 3.9000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 8.3000e-004        | 8.3000e-004        | 0.0000        |               | 8.9000e-004        |
| Energy       | 0.0000        | 0.0000        | 0.0000             | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000             |
| Mobile       | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |          | 0.0000             | 0.0000             | 0.0000        |               | 0.0000             |
| <b>Total</b> | <b>0.0711</b> | <b>0.0000</b> | <b>3.9000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>8.3000e-004</b> | <b>8.3000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>8.9000e-004</b> |

**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         | 0.0711        | 0.0000        | 3.9000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 8.3000e-004        | 8.3000e-004        | 0.0000        |               | 8.9000e-004        |
| Energy       | 0.0000        | 0.0000        | 0.0000             | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000             |
| Mobile       | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |          | 0.0000             | 0.0000             | 0.0000        |               | 0.0000             |
| <b>Total</b> | <b>0.0711</b> | <b>0.0000</b> | <b>3.9000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>8.3000e-004</b> | <b>8.3000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>8.9000e-004</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

|                   | 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 |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| 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            | Site Preparation      | Site Preparation      | 7/1/2019   | 8/23/2019  | 5             | 40       |                   |
| 2            | Grading               | Grading               | 8/24/2019  | 1/24/2020  | 5             | 110      |                   |
| 3            | Building Construction | Building Construction | 1/25/2020  | 12/11/2020 | 5             | 230      |                   |
| 4            | Paving                | Paving                | 9/5/2020   | 12/18/2020 | 5             | 75       |                   |
| 5            | Architectural Coating | Architectural Coating | 4/11/2020  | 12/18/2020 | 5             | 180      |                   |

**Acres of Grading (Site Preparation Phase): 80****Acres of Grading (Grading Phase): 385****Acres of Paving: 3.79****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 9,906 (Architectural Coating – sqft)****OffRoad Equipment**

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

| Phase Name            | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors           | 1      | 8.00        | 78          | 0.48        |
| Paving                | Cement and Mortar Mixers  | 0      | 6.00        | 9           | 0.56        |
| Paving                | Tractors/Loaders/Backhoes | 0      | 8.00        | 97          | 0.37        |
| Grading               | Excavators                | 2      | 8.00        | 158         | 0.38        |
| Building Construction | Cranes                    | 1      | 8.00        | 231         | 0.29        |
| Building Construction | Forklifts                 | 3      | 8.00        | 89          | 0.20        |
| Building Construction | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Paving                | Pavers                    | 2      | 8.00        | 130         | 0.42        |
| Paving                | Rollers                   | 2      | 6.00        | 80          | 0.38        |
| Site Preparation      | Crawler Tractors          | 4      | 8.00        | 212         | 0.43        |
| Grading               | Rubber Tired Dozers       | 1      | 8.00        | 247         | 0.40        |
| Building Construction | Tractors/Loaders/Backhoes | 0      | 8.00        | 97          | 0.37        |
| Grading               | Graders                   | 1      | 8.00        | 187         | 0.41        |
| Grading               | Tractors/Loaders/Backhoes | 0      | 8.00        | 97          | 0.37        |
| Paving                | Paving Equipment          | 2      | 6.00        | 132         | 0.36        |
| Site Preparation      | Tractors/Loaders/Backhoes | 0      | 8.00        | 97          | 0.37        |
| Site Preparation      | Rubber Tired Dozers       | 3      | 8.00        | 247         | 0.40        |
| Building Construction | Welders                   | 1      | 8.00        | 46          | 0.45        |
| Grading               | Crawler Tractors          | 2      | 8.00        | 212         | 0.43        |
| Grading               | Scrapers                  | 2      | 8.00        | 367         | 0.48        |
| Building Construction | Crawler Tractors          | 3      | 8.00        | 212         | 0.43        |

Trips and VMT

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

| 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 |
|-----------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Site Preparation      | 7                       | 18.00              | 0.00               | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Grading               | 8                       | 20.00              | 0.00               | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Building Construction | 9                       | 69.00              | 27.00              | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Paving                | 6                       | 15.00              | 0.00               | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Architectural Coating | 1                       | 14.00              | 0.00               | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |

## 3.1 Mitigation Measures Construction

## 3.2 Site Preparation - 2019

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 |               |                |                |               | 20.1873        | 0.0000        | 20.1873        | 10.1597        | 0.0000        | 10.1597        |          |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.8382        | 68.1103        | 23.1420        | 0.0569        |                | 2.9687        | 2.9687         |                | 2.7312        | 2.7312         |          | 5,636.7406        | 5,636.7406        | 1.7834        |     | 5,681.3258        |
| <b>Total</b>  | <b>5.8382</b> | <b>68.1103</b> | <b>23.1420</b> | <b>0.0569</b> | <b>20.1873</b> | <b>2.9687</b> | <b>23.1559</b> | <b>10.1597</b> | <b>2.7312</b> | <b>12.8909</b> |          | <b>5,636.7406</b> | <b>5,636.7406</b> | <b>1.7834</b> |     | <b>5,681.3258</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.2 Site Preparation - 2019****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          |
| 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          |
| Worker       | 0.0960        | 0.0672        | 0.7297        | 2.0000e-003        | 0.2012        | 1.5700e-003        | 0.2028        | 0.0534         | 1.4400e-003        | 0.0548        |          | 198.8380        | 198.8380        | 6.2100e-003        |     | 198.9933        |
| <b>Total</b> | <b>0.0960</b> | <b>0.0672</b> | <b>0.7297</b> | <b>2.0000e-003</b> | <b>0.2012</b> | <b>1.5700e-003</b> | <b>0.2028</b> | <b>0.0534</b>  | <b>1.4400e-003</b> | <b>0.0548</b> |          | <b>198.8380</b> | <b>198.8380</b> | <b>6.2100e-003</b> |     | <b>198.9933</b> |

**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 |               |                |                |               | 20.1873        | 0.0000        | 20.1873        | 10.1597        | 0.0000        | 10.1597        |               |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.8382        | 68.1103        | 23.1420        | 0.0569        |                | 2.9687        | 2.9687         |                | 2.7312        | 2.7312         | 0.0000        | 5,636.7406        | 5,636.7406        | 1.7834        |     | 5,681.3258        |
| <b>Total</b>  | <b>5.8382</b> | <b>68.1103</b> | <b>23.1420</b> | <b>0.0569</b> | <b>20.1873</b> | <b>2.9687</b> | <b>23.1559</b> | <b>10.1597</b> | <b>2.7312</b> | <b>12.8909</b> | <b>0.0000</b> | <b>5,636.7406</b> | <b>5,636.7406</b> | <b>1.7834</b> |     | <b>5,681.3258</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.2 Site Preparation - 2019****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          |
| 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          |
| Worker       | 0.0960        | 0.0672        | 0.7297        | 2.0000e-003        | 0.2012        | 1.5700e-003        | 0.2028        | 0.0534         | 1.4400e-003        | 0.0548        |          | 198.8380        | 198.8380        | 6.2100e-003        |     | 198.9933        |
| <b>Total</b> | <b>0.0960</b> | <b>0.0672</b> | <b>0.7297</b> | <b>2.0000e-003</b> | <b>0.2012</b> | <b>1.5700e-003</b> | <b>0.2028</b> | <b>0.0534</b>  | <b>1.4400e-003</b> | <b>0.0548</b> |          | <b>198.8380</b> | <b>198.8380</b> | <b>6.2100e-003</b> |     | <b>198.9933</b> |

**3.3 Grading - 2019****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 |               |                |                |               | 9.7338        | 0.0000        | 9.7338         | 3.7110         | 0.0000        | 3.7110        |          |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.5012        | 65.9181        | 33.9969        | 0.0716        |               | 2.6769        | 2.6769         |                | 2.4627        | 2.4627        |          | 7,090.1615        | 7,090.1615        | 2.2433        |     | 7,146.2428        |
| <b>Total</b>  | <b>5.5012</b> | <b>65.9181</b> | <b>33.9969</b> | <b>0.0716</b> | <b>9.7338</b> | <b>2.6769</b> | <b>12.4107</b> | <b>3.7110</b>  | <b>2.4627</b> | <b>6.1737</b> |          | <b>7,090.1615</b> | <b>7,090.1615</b> | <b>2.2433</b> |     | <b>7,146.2428</b> |



## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.3 Grading - 2019****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          |
| 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          |
| Worker       | 0.1067        | 0.0747        | 0.8108        | 2.2200e-003        | 0.2236        | 1.7400e-003        | 0.2253        | 0.0593         | 1.6000e-003        | 0.0609        |          | 220.9312        | 220.9312        | 6.9000e-003        |     | 221.1037        |
| <b>Total</b> | <b>0.1067</b> | <b>0.0747</b> | <b>0.8108</b> | <b>2.2200e-003</b> | <b>0.2236</b> | <b>1.7400e-003</b> | <b>0.2253</b> | <b>0.0593</b>  | <b>1.6000e-003</b> | <b>0.0609</b> |          | <b>220.9312</b> | <b>220.9312</b> | <b>6.9000e-003</b> |     | <b>221.1037</b> |

**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 |               |                |                |               | 9.7338        | 0.0000        | 9.7338         | 3.7110         | 0.0000        | 3.7110        |               |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.5012        | 65.9181        | 33.9969        | 0.0716        |               | 2.6769        | 2.6769         |                | 2.4627        | 2.4627        | 0.0000        | 7,090.1615        | 7,090.1615        | 2.2433        |     | 7,146.2428        |
| <b>Total</b>  | <b>5.5012</b> | <b>65.9181</b> | <b>33.9969</b> | <b>0.0716</b> | <b>9.7338</b> | <b>2.6769</b> | <b>12.4107</b> | <b>3.7110</b>  | <b>2.4627</b> | <b>6.1737</b> | <b>0.0000</b> | <b>7,090.1615</b> | <b>7,090.1615</b> | <b>2.2433</b> |     | <b>7,146.2428</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.3 Grading - 2019****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          |
| 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          |
| Worker       | 0.1067        | 0.0747        | 0.8108        | 2.2200e-003        | 0.2236        | 1.7400e-003        | 0.2253        | 0.0593         | 1.6000e-003        | 0.0609        |          | 220.9312        | 220.9312        | 6.9000e-003        |     | 221.1037        |
| <b>Total</b> | <b>0.1067</b> | <b>0.0747</b> | <b>0.8108</b> | <b>2.2200e-003</b> | <b>0.2236</b> | <b>1.7400e-003</b> | <b>0.2253</b> | <b>0.0593</b>  | <b>1.6000e-003</b> | <b>0.0609</b> |          | <b>220.9312</b> | <b>220.9312</b> | <b>6.9000e-003</b> |     | <b>221.1037</b> |

**3.3 Grading - 2020****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 |               |                |                |               | 9.7338        | 0.0000        | 9.7338         | 3.7110         | 0.0000        | 3.7110        |          |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.1955        | 60.9585        | 32.4595        | 0.0716        |               | 2.4720        | 2.4720         |                | 2.2742        | 2.2742        |          | 6,935.5312        | 6,935.5312        | 2.2431        |     | 6,991.6085        |
| <b>Total</b>  | <b>5.1955</b> | <b>60.9585</b> | <b>32.4595</b> | <b>0.0716</b> | <b>9.7338</b> | <b>2.4720</b> | <b>12.2058</b> | <b>3.7110</b>  | <b>2.2742</b> | <b>5.9852</b> |          | <b>6,935.5312</b> | <b>6,935.5312</b> | <b>2.2431</b> |     | <b>6,991.6085</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.3 Grading - 2020****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          |
| 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          |
| Worker       | 0.0987        | 0.0666        | 0.7362        | 2.1500e-003        | 0.2236        | 1.7000e-003        | 0.2253        | 0.0593         | 1.5600e-003        | 0.0609        |          | 214.0730        | 214.0730        | 6.1400e-003        |     | 214.2265        |
| <b>Total</b> | <b>0.0987</b> | <b>0.0666</b> | <b>0.7362</b> | <b>2.1500e-003</b> | <b>0.2236</b> | <b>1.7000e-003</b> | <b>0.2253</b> | <b>0.0593</b>  | <b>1.5600e-003</b> | <b>0.0609</b> |          | <b>214.0730</b> | <b>214.0730</b> | <b>6.1400e-003</b> |     | <b>214.2265</b> |

**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 |               |                |                |               | 9.7338        | 0.0000        | 9.7338         | 3.7110         | 0.0000        | 3.7110        |               |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.1955        | 60.9585        | 32.4595        | 0.0716        |               | 2.4720        | 2.4720         |                | 2.2742        | 2.2742        | 0.0000        | 6,935.5312        | 6,935.5312        | 2.2431        |     | 6,991.6085        |
| <b>Total</b>  | <b>5.1955</b> | <b>60.9585</b> | <b>32.4595</b> | <b>0.0716</b> | <b>9.7338</b> | <b>2.4720</b> | <b>12.2058</b> | <b>3.7110</b>  | <b>2.2742</b> | <b>5.9852</b> | <b>0.0000</b> | <b>6,935.5312</b> | <b>6,935.5312</b> | <b>2.2431</b> |     | <b>6,991.6085</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.3 Grading - 2020****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          |
| 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          |
| Worker       | 0.0987        | 0.0666        | 0.7362        | 2.1500e-003        | 0.2236        | 1.7000e-003        | 0.2253        | 0.0593         | 1.5600e-003        | 0.0609        |          | 214.0730        | 214.0730        | 6.1400e-003        |     | 214.2265        |
| <b>Total</b> | <b>0.0987</b> | <b>0.0666</b> | <b>0.7362</b> | <b>2.1500e-003</b> | <b>0.2236</b> | <b>1.7000e-003</b> | <b>0.2253</b> | <b>0.0593</b>  | <b>1.5600e-003</b> | <b>0.0609</b> |          | <b>214.0730</b> | <b>214.0730</b> | <b>6.1400e-003</b> |     | <b>214.2265</b> |

**3.4 Building Construction - 2020****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     | 3.3583        | 36.6146        | 18.6077        | 0.0430        |               | 1.6350        | 1.6350        |                | 1.5268        | 1.5268        |          | 4,108.1936        | 4,108.1936        | 1.1258        |     | 4,136.3391        |
| <b>Total</b> | <b>3.3583</b> | <b>36.6146</b> | <b>18.6077</b> | <b>0.0430</b> |               | <b>1.6350</b> | <b>1.6350</b> |                | <b>1.5268</b> | <b>1.5268</b> |          | <b>4,108.1936</b> | <b>4,108.1936</b> | <b>1.1258</b> |     | <b>4,136.3391</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.4 Building Construction - 2020****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            |
| Vendor       | 0.0929        | 2.8303        | 0.7522        | 6.7500e-003   | 0.1728        | 0.0143        | 0.1871        | 0.0498         | 0.0136        | 0.0634        |          | 719.5846          | 719.5846          | 0.0500        |     | 720.8337          |
| Worker       | 0.3405        | 0.2298        | 2.5398        | 7.4100e-003   | 0.7713        | 5.8500e-003   | 0.7771        | 0.2045         | 5.3900e-003   | 0.2099        |          | 738.5518          | 738.5518          | 0.0212        |     | 739.0813          |
| <b>Total</b> | <b>0.4334</b> | <b>3.0601</b> | <b>3.2920</b> | <b>0.0142</b> | <b>0.9441</b> | <b>0.0201</b> | <b>0.9642</b> | <b>0.2543</b>  | <b>0.0190</b> | <b>0.2733</b> |          | <b>1,458.1364</b> | <b>1,458.1364</b> | <b>0.0712</b> |     | <b>1,459.9151</b> |

**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     | 3.3583        | 36.6146        | 18.6077        | 0.0430        |               | 1.6350        | 1.6350        |                | 1.5268        | 1.5268        | 0.0000        | 4,108.1936        | 4,108.1936        | 1.1258        |     | 4,136.3391        |
| <b>Total</b> | <b>3.3583</b> | <b>36.6146</b> | <b>18.6077</b> | <b>0.0430</b> |               | <b>1.6350</b> | <b>1.6350</b> |                | <b>1.5268</b> | <b>1.5268</b> | <b>0.0000</b> | <b>4,108.1936</b> | <b>4,108.1936</b> | <b>1.1258</b> |     | <b>4,136.3391</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.4 Building Construction - 2020****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            |
| Vendor       | 0.0929        | 2.8303        | 0.7522        | 6.7500e-003   | 0.1728        | 0.0143        | 0.1871        | 0.0498         | 0.0136        | 0.0634        |          | 719.5846          | 719.5846          | 0.0500        |     | 720.8337          |
| Worker       | 0.3405        | 0.2298        | 2.5398        | 7.4100e-003   | 0.7713        | 5.8500e-003   | 0.7771        | 0.2045         | 5.3900e-003   | 0.2099        |          | 738.5518          | 738.5518          | 0.0212        |     | 739.0813          |
| <b>Total</b> | <b>0.4334</b> | <b>3.0601</b> | <b>3.2920</b> | <b>0.0142</b> | <b>0.9441</b> | <b>0.0201</b> | <b>0.9642</b> | <b>0.2543</b>  | <b>0.0190</b> | <b>0.2733</b> |          | <b>1,458.1364</b> | <b>1,458.1364</b> | <b>0.0712</b> |     | <b>1,459.9151</b> |

**3.5 Paving - 2020****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     | 1.1488        | 11.9543        | 12.4382        | 0.0195        |               | 0.6329        | 0.6329        |                | 0.5823        | 0.5823        |          | 1,883.4361        | 1,883.4361        | 0.6091        |     | 1,898.6647        |
| Paving       | 0.1324        |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                   | 0.0000            |               |     | 0.0000            |
| <b>Total</b> | <b>1.2812</b> | <b>11.9543</b> | <b>12.4382</b> | <b>0.0195</b> |               | <b>0.6329</b> | <b>0.6329</b> |                | <b>0.5823</b> | <b>0.5823</b> |          | <b>1,883.4361</b> | <b>1,883.4361</b> | <b>0.6091</b> |     | <b>1,898.6647</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.5 Paving - 2020****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          |
| 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          |
| Worker       | 0.0740        | 0.0500        | 0.5521        | 1.6100e-003        | 0.1677        | 1.2700e-003        | 0.1689        | 0.0445         | 1.1700e-003        | 0.0456        |          | 160.5547        | 160.5547        | 4.6000e-003        |     | 160.6699        |
| <b>Total</b> | <b>0.0740</b> | <b>0.0500</b> | <b>0.5521</b> | <b>1.6100e-003</b> | <b>0.1677</b> | <b>1.2700e-003</b> | <b>0.1689</b> | <b>0.0445</b>  | <b>1.1700e-003</b> | <b>0.0456</b> |          | <b>160.5547</b> | <b>160.5547</b> | <b>4.6000e-003</b> |     | <b>160.6699</b> |

**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     | 1.1488        | 11.9543        | 12.4382        | 0.0195        |               | 0.6329        | 0.6329        |                | 0.5823        | 0.5823        | 0.0000        | 1,883.4361        | 1,883.4361        | 0.6091        |     | 1,898.6647        |
| Paving       | 0.1324        |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |               |                   | 0.0000            |               |     | 0.0000            |
| <b>Total</b> | <b>1.2812</b> | <b>11.9543</b> | <b>12.4382</b> | <b>0.0195</b> |               | <b>0.6329</b> | <b>0.6329</b> |                | <b>0.5823</b> | <b>0.5823</b> | <b>0.0000</b> | <b>1,883.4361</b> | <b>1,883.4361</b> | <b>0.6091</b> |     | <b>1,898.6647</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.5 Paving - 2020****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          |
| 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          |
| Worker       | 0.0740        | 0.0500        | 0.5521        | 1.6100e-003        | 0.1677        | 1.2700e-003        | 0.1689        | 0.0445         | 1.1700e-003        | 0.0456        |          | 160.5547        | 160.5547        | 4.6000e-003        |     | 160.6699        |
| <b>Total</b> | <b>0.0740</b> | <b>0.0500</b> | <b>0.5521</b> | <b>1.6100e-003</b> | <b>0.1677</b> | <b>1.2700e-003</b> | <b>0.1689</b> | <b>0.0445</b>  | <b>1.1700e-003</b> | <b>0.0456</b> |          | <b>160.5547</b> | <b>160.5547</b> | <b>4.6000e-003</b> |     | <b>160.6699</b> |

**3.6 Architectural Coating - 2020****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 | 0.2551        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                 | 0.0000          |               |     | 0.0000          |
| Off-Road        | 0.3229        | 2.2451        | 2.4419        | 3.9600e-003        |               | 0.1479        | 0.1479        |                | 0.1479        | 0.1479        |          | 375.2641        | 375.2641        | 0.0291        |     | 375.9904        |
| <b>Total</b>    | <b>0.5780</b> | <b>2.2451</b> | <b>2.4419</b> | <b>3.9600e-003</b> |               | <b>0.1479</b> | <b>0.1479</b> |                | <b>0.1479</b> | <b>0.1479</b> |          | <b>375.2641</b> | <b>375.2641</b> | <b>0.0291</b> |     | <b>375.9904</b> |



## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.6 Architectural Coating - 2020****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          |
| 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          |
| Worker       | 0.0691        | 0.0466        | 0.5153        | 1.5000e-003        | 0.1565        | 1.1900e-003        | 0.1577        | 0.0415         | 1.0900e-003        | 0.0426        |          | 149.8511        | 149.8511        | 4.3000e-003        |     | 149.9585        |
| <b>Total</b> | <b>0.0691</b> | <b>0.0466</b> | <b>0.5153</b> | <b>1.5000e-003</b> | <b>0.1565</b> | <b>1.1900e-003</b> | <b>0.1577</b> | <b>0.0415</b>  | <b>1.0900e-003</b> | <b>0.0426</b> |          | <b>149.8511</b> | <b>149.8511</b> | <b>4.3000e-003</b> |     | <b>149.9585</b> |

**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 | 0.2551        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |               |                 | 0.0000          |               |     | 0.0000          |
| Off-Road        | 0.3229        | 2.2451        | 2.4419        | 3.9600e-003        |               | 0.1479        | 0.1479        |                | 0.1479        | 0.1479        | 0.0000        | 375.2641        | 375.2641        | 0.0291        |     | 375.9904        |
| <b>Total</b>    | <b>0.5780</b> | <b>2.2451</b> | <b>2.4419</b> | <b>3.9600e-003</b> |               | <b>0.1479</b> | <b>0.1479</b> |                | <b>0.1479</b> | <b>0.1479</b> | <b>0.0000</b> | <b>375.2641</b> | <b>375.2641</b> | <b>0.0291</b> |     | <b>375.9904</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.6 Architectural Coating - 2020****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          |
| 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          |
| Worker       | 0.0691        | 0.0466        | 0.5153        | 1.5000e-003        | 0.1565        | 1.1900e-003        | 0.1577        | 0.0415         | 1.0900e-003        | 0.0426        |          | 149.8511        | 149.8511        | 4.3000e-003        |     | 149.9585        |
| <b>Total</b> | <b>0.0691</b> | <b>0.0466</b> | <b>0.5153</b> | <b>1.5000e-003</b> | <b>0.1565</b> | <b>1.1900e-003</b> | <b>0.1577</b> | <b>0.0415</b>  | <b>1.0900e-003</b> | <b>0.0426</b> |          | <b>149.8511</b> | <b>149.8511</b> | <b>4.3000e-003</b> |     | <b>149.9585</b> |

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

|             | 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   | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000        | 0.0000       | 0.0000     | 0.0000         | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 |     | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000        | 0.0000       | 0.0000     | 0.0000         | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 |     | 0.0000 |

## 4.2 Trip Summary Information

| Land Use               | Average Daily Trip Rate |          |        | Unmitigated | Mitigated  |
|------------------------|-------------------------|----------|--------|-------------|------------|
|                        | Weekday                 | Saturday | Sunday | Annual VMT  | Annual VMT |
| Other Asphalt Surfaces | 0.00                    | 0.00     | 0.00   |             |            |
| Total                  | 0.00                    | 0.00     | 0.00   |             |            |

## 4.3 Trip Type Information

| Land Use               | Miles      |            |             | Trip %     |            |             | Trip Purpose % |          |         |
|------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
|                        | 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 Asphalt Surfaces | 16.60      | 8.40       | 6.90        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |

## 4.4 Fleet Mix

| Land Use               | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Other Asphalt Surfaces | 0.547828 | 0.043645 | 0.199892 | 0.122290 | 0.016774 | 0.005862 | 0.020637 | 0.032653 | 0.002037 | 0.001944 | 0.004777 | 0.000705 | 0.000956 |

## 5.0 Energy Detail

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Historical Energy Use: N

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

## 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   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |

## 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 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        |
| <b>Total</b>           |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**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 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        |
| <b>Total</b>           |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

**6.0 Area Detail****6.1 Mitigation Measures Area**

|             | 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   | 0.0711 | 0.0000 | 3.9000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 8.3000e-004 | 8.3000e-004 | 0.0000 |     | 8.9000e-004 |
| Unmitigated | 0.0711 | 0.0000 | 3.9000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 8.3000e-004 | 8.3000e-004 | 0.0000 |     | 8.9000e-004 |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**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 | 0.0126        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0585        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 4.0000e-005   | 0.0000        | 3.9000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 8.3000e-004        | 8.3000e-004        | 0.0000        |     | 8.9000e-004        |
| <b>Total</b>          | <b>0.0711</b> | <b>0.0000</b> | <b>3.9000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>8.3000e-004</b> | <b>8.3000e-004</b> | <b>0.0000</b> |     | <b>8.9000e-004</b> |

**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 | 0.0126        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0585        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 4.0000e-005   | 0.0000        | 3.9000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 8.3000e-004        | 8.3000e-004        | 0.0000        |     | 8.9000e-004        |
| <b>Total</b>          | <b>0.0711</b> | <b>0.0000</b> | <b>3.9000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>8.3000e-004</b> | <b>8.3000e-004</b> | <b>0.0000</b> |     | <b>8.9000e-004</b> |

**7.0 Water Detail**

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

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**7.1 Mitigation Measures Water**

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**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

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**9.0 Operational Offroad**

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| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

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**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 |
|----------------|--------|
|----------------|--------|

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**11.0 Vegetation**

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The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

## The Park @ Live Oak (Parking)

### South Coast AQMD Air District, Winter

## 1.0 Project Characteristics

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### 1.1 Land Usage

| Land Uses   | Size     | Metric | Lot Acreage | Floor Surface Area | Population |
|-------------|----------|--------|-------------|--------------------|------------|
| Parking Lot | 1,062.00 | Space  | 3.79        | 165,048.84         | 0          |

### 1.2 Other Project Characteristics

|                                |                            |                                |       |                                  |       |
|--------------------------------|----------------------------|--------------------------------|-------|----------------------------------|-------|
| <b>Urbanization</b>            | Urban                      | <b>Wind Speed (m/s)</b>        | 2.2   | <b>Precipitation Freq (Days)</b> | 31    |
| <b>Climate Zone</b>            | 9                          |                                |       | <b>Operational Year</b>          | 2020  |
| <b>Utility Company</b>         | Southern California Edison |                                |       |                                  |       |
| <b>CO2 Intensity (lb/MWhr)</b> | 702.44                     | <b>CH4 Intensity (lb/MWhr)</b> | 0.029 | <b>N2O Intensity (lb/MWhr)</b>   | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total Area is 3.79 acres.

Construction Phase - Construction Schedule adjusted to meet OY.

Off-road Equipment - Hours based on an 8-hour workday.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment -

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Grading -



## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

| Table Name              | Column Name                | Default Value | New Value  |
|-------------------------|----------------------------|---------------|------------|
| tblArchitecturalCoating | ConstArea_Parking          | 9,903.00      | 25,488.00  |
| tblAreaCoating          | Area_Parking               | 9903          | 25488      |
| tblConstructionPhase    | NumDays                    | 5.00          | 40.00      |
| tblConstructionPhase    | NumDays                    | 8.00          | 110.00     |
| tblConstructionPhase    | NumDays                    | 18.00         | 180.00     |
| tblConstructionPhase    | NumDays                    | 18.00         | 75.00      |
| tblLandUse              | LandUseSquareFeet          | 424,800.00    | 165,048.84 |
| tblLandUse              | LotAcreage                 | 9.56          | 3.79       |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount | 1.00          | 2.00       |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount | 1.00          | 2.00       |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount | 3.00          | 0.00       |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount | 3.00          | 0.00       |
| tblOffRoadEquipment     | OffRoadEquipmentUnitAmount | 4.00          | 0.00       |
| tblOffRoadEquipment     | UsageHours                 | 6.00          | 8.00       |
| tblOffRoadEquipment     | UsageHours                 | 7.00          | 8.00       |
| tblOffRoadEquipment     | UsageHours                 | 6.00          | 8.00       |
| tblOffRoadEquipment     | UsageHours                 | 6.00          | 8.00       |
| tblOffRoadEquipment     | UsageHours                 | 7.00          | 8.00       |
| tblTripsAndVMT          | VendorTripNumber           | 27.00         | 70.00      |
| tblTripsAndVMT          | WorkerTripNumber           | 69.00         | 178.00     |
| tblTripsAndVMT          | WorkerTripNumber           | 23.00         | 15.00      |
| tblTripsAndVMT          | WorkerTripNumber           | 14.00         | 36.00      |

## 2.0 Emissions Summary

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The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

## 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   |             |             |        |        |             |
| 2019    | 5.9410 | 68.2667 | 34.7414 | 0.0737 | 20.3885       | 2.9736       | 23.3621    | 10.2131        | 2.7357        | 12.9488     | 0.0000   | 7,300.4328  | 7,300.4328  | 2.2468 | 0.0000 | 7,356.6024  |
| 2020    | 7.4998 | 63.7455 | 48.8443 | 0.1161 | 9.9574        | 2.7490       | 12.4281    | 3.7703         | 2.5666        | 6.0433      | 0.0000   | 11,390.8255 | 11,390.8255 | 2.2459 | 0.0000 | 11,445.2240 |
| Maximum | 7.4998 | 68.2667 | 48.8443 | 0.1161 | 20.3885       | 2.9736       | 23.3621    | 10.2131        | 2.7357        | 12.9488     | 0.0000   | 11,390.8255 | 11,390.8255 | 2.2468 | 0.0000 | 11,445.2240 |

### 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   |             |             |        |        |             |
| 2019    | 5.9410 | 68.2667 | 34.7414 | 0.0737 | 20.3885       | 2.9736       | 23.3621    | 10.2131        | 2.7357        | 12.9488     | 0.0000   | 7,300.4328  | 7,300.4328  | 2.2468 | 0.0000 | 7,356.6024  |
| 2020    | 7.4998 | 63.7455 | 48.8443 | 0.1161 | 9.9574        | 2.7490       | 12.4281    | 3.7703         | 2.5666        | 6.0433      | 0.0000   | 11,390.8255 | 11,390.8255 | 2.2459 | 0.0000 | 11,445.2240 |
| Maximum | 7.4998 | 68.2667 | 48.8443 | 0.1161 | 20.3885       | 2.9736       | 23.3621    | 10.2131        | 2.7357        | 12.9488     | 0.0000   | 11,390.8255 | 11,390.8255 | 2.2468 | 0.0000 | 11,445.2240 |

[illegible]

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**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         | 0.1011        | 1.0100e-003        | 0.1091        | 1.0000e-005        |               | 3.9000e-004        | 3.9000e-004        |                | 3.9000e-004        | 3.9000e-004        |          | 0.2324        | 0.2324        | 6.2000e-004        |               | 0.2480        |
| Energy       | 0.0000        | 0.0000             | 0.0000        | 0.0000             |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             |          | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Mobile       | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000         | 0.0000             | 0.0000             |          | 0.0000        | 0.0000        | 0.0000             |               | 0.0000        |
| <b>Total</b> | <b>0.1011</b> | <b>1.0100e-003</b> | <b>0.1091</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>3.9000e-004</b> | <b>3.9000e-004</b> | <b>0.0000</b>  | <b>3.9000e-004</b> | <b>3.9000e-004</b> |          | <b>0.2324</b> | <b>0.2324</b> | <b>6.2000e-004</b> | <b>0.0000</b> | <b>0.2480</b> |

**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         | 0.1011        | 1.0100e-003        | 0.1091        | 1.0000e-005        |               | 3.9000e-004        | 3.9000e-004        |                | 3.9000e-004        | 3.9000e-004        |          | 0.2324        | 0.2324        | 6.2000e-004        |               | 0.2480        |
| Energy       | 0.0000        | 0.0000             | 0.0000        | 0.0000             |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             |          | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Mobile       | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000         | 0.0000             | 0.0000             |          | 0.0000        | 0.0000        | 0.0000             |               | 0.0000        |
| <b>Total</b> | <b>0.1011</b> | <b>1.0100e-003</b> | <b>0.1091</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>3.9000e-004</b> | <b>3.9000e-004</b> | <b>0.0000</b>  | <b>3.9000e-004</b> | <b>3.9000e-004</b> |          | <b>0.2324</b> | <b>0.2324</b> | <b>6.2000e-004</b> | <b>0.0000</b> | <b>0.2480</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

|                   | 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 |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| 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            | Site Preparation      | Site Preparation      | 7/1/2019   | 8/23/2019  | 5             | 40       |                   |
| 2            | Grading               | Grading               | 8/24/2019  | 1/24/2020  | 5             | 110      |                   |
| 3            | Building Construction | Building Construction | 1/25/2020  | 12/11/2020 | 5             | 230      |                   |
| 4            | Architectural Coating | Architectural Coating | 4/11/2020  | 12/18/2020 | 5             | 180      |                   |
| 5            | Paving                | Paving                | 9/5/2020   | 12/18/2020 | 5             | 75       |                   |

**Acres of Grading (Site Preparation Phase): 80****Acres of Grading (Grading Phase): 385****Acres of Paving: 3.79****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 25,488 (Architectural Coating – sqft)****OffRoad Equipment**

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

| Phase Name            | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Site Preparation      | Crawler Tractors          | 4      | 8.00        | 212         | 0.43        |
| Site Preparation      | Rubber Tired Dozers       | 3      | 8.00        | 247         | 0.40        |
| Site Preparation      | Tractors/Loaders/Backhoes | 0      | 8.00        | 97          | 0.37        |
| Grading               | Crawler Tractors          | 2      | 8.00        | 212         | 0.43        |
| Grading               | Excavators                | 2      | 8.00        | 158         | 0.38        |
| Grading               | Graders                   | 1      | 8.00        | 187         | 0.41        |
| Grading               | Rubber Tired Dozers       | 1      | 8.00        | 247         | 0.40        |
| Grading               | Scrapers                  | 2      | 8.00        | 367         | 0.48        |
| Grading               | Tractors/Loaders/Backhoes | 0      | 8.00        | 97          | 0.37        |
| Building Construction | Cranes                    | 1      | 8.00        | 231         | 0.29        |
| Building Construction | Crawler Tractors          | 3      | 8.00        | 212         | 0.43        |
| Building Construction | Forklifts                 | 3      | 8.00        | 89          | 0.20        |
| Building Construction | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Building Construction | Tractors/Loaders/Backhoes | 0      | 8.00        | 97          | 0.37        |
| Building Construction | Welders                   | 1      | 8.00        | 46          | 0.45        |
| Paving                | Pavers                    | 2      | 8.00        | 130         | 0.42        |
| Paving                | Paving Equipment          | 2      | 8.00        | 132         | 0.36        |
| Paving                | Rollers                   | 2      | 8.00        | 80          | 0.38        |
| Architectural Coating | Air Compressors           | 1      | 8.00        | 78          | 0.48        |
| Paving                | Cement and Mortar Mixers  | 2      | 6.00        | 9           | 0.56        |
| Paving                | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |

Trips and VMT

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

| 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 |
|-----------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Site Preparation      | 7                       | 18.00              | 0.00               | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Grading               | 8                       | 20.00              | 0.00               | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Building Construction | 9                       | 178.00             | 70.00              | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Paving                | 9                       | 15.00              | 0.00               | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Architectural Coating | 1                       | 36.00              | 0.00               | 0.00                | 14.70              | 6.90               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |

## 3.1 Mitigation Measures Construction

## 3.2 Site Preparation - 2019

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 |               |                |                |               | 20.1873        | 0.0000        | 20.1873        | 10.1597        | 0.0000        | 10.1597        |          |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.8450        | 68.1996        | 23.1708        | 0.0570        |                | 2.9720        | 2.9720         |                | 2.7343        | 2.7343         |          | 5,645.4173        | 5,645.4173        | 1.7862        |     | 5,690.0710        |
| <b>Total</b>  | <b>5.8450</b> | <b>68.1996</b> | <b>23.1708</b> | <b>0.0570</b> | <b>20.1873</b> | <b>2.9720</b> | <b>23.1593</b> | <b>10.1597</b> | <b>2.7343</b> | <b>12.8940</b> |          | <b>5,645.4173</b> | <b>5,645.4173</b> | <b>1.7862</b> |     | <b>5,690.0710</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.2 Site Preparation - 2019****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          |
| 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          |
| Worker       | 0.0960        | 0.0672        | 0.7297        | 2.0000e-003        | 0.2012        | 1.5700e-003        | 0.2028        | 0.0534         | 1.4400e-003        | 0.0548        |          | 198.8380        | 198.8380        | 6.2100e-003        |     | 198.9933        |
| <b>Total</b> | <b>0.0960</b> | <b>0.0672</b> | <b>0.7297</b> | <b>2.0000e-003</b> | <b>0.2012</b> | <b>1.5700e-003</b> | <b>0.2028</b> | <b>0.0534</b>  | <b>1.4400e-003</b> | <b>0.0548</b> |          | <b>198.8380</b> | <b>198.8380</b> | <b>6.2100e-003</b> |     | <b>198.9933</b> |

**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 |               |                |                |               | 20.1873        | 0.0000        | 20.1873        | 10.1597        | 0.0000        | 10.1597        |               |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.8450        | 68.1996        | 23.1708        | 0.0570        |                | 2.9720        | 2.9720         |                | 2.7343        | 2.7343         | 0.0000        | 5,645.4173        | 5,645.4173        | 1.7862        |     | 5,690.0710        |
| <b>Total</b>  | <b>5.8450</b> | <b>68.1996</b> | <b>23.1708</b> | <b>0.0570</b> | <b>20.1873</b> | <b>2.9720</b> | <b>23.1593</b> | <b>10.1597</b> | <b>2.7343</b> | <b>12.8940</b> | <b>0.0000</b> | <b>5,645.4173</b> | <b>5,645.4173</b> | <b>1.7862</b> |     | <b>5,690.0710</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.2 Site Preparation - 2019****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          |
| 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          |
| Worker       | 0.0960        | 0.0672        | 0.7297        | 2.0000e-003        | 0.2012        | 1.5700e-003        | 0.2028        | 0.0534         | 1.4400e-003        | 0.0548        |          | 198.8380        | 198.8380        | 6.2100e-003        |     | 198.9933        |
| <b>Total</b> | <b>0.0960</b> | <b>0.0672</b> | <b>0.7297</b> | <b>2.0000e-003</b> | <b>0.2012</b> | <b>1.5700e-003</b> | <b>0.2028</b> | <b>0.0534</b>  | <b>1.4400e-003</b> | <b>0.0548</b> |          | <b>198.8380</b> | <b>198.8380</b> | <b>6.2100e-003</b> |     | <b>198.9933</b> |

**3.3 Grading - 2019****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 |               |                |                |               | 9.7338        | 0.0000        | 9.7338         | 3.7110         | 0.0000        | 3.7110        |          |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.4939        | 65.8336        | 33.9306        | 0.0715        |               | 2.6735        | 2.6735         |                | 2.4596        | 2.4596        |          | 7,079.5017        | 7,079.5017        | 2.2399        |     | 7,135,4987        |
| <b>Total</b>  | <b>5.4939</b> | <b>65.8336</b> | <b>33.9306</b> | <b>0.0715</b> | <b>9.7338</b> | <b>2.6735</b> | <b>12.4073</b> | <b>3.7110</b>  | <b>2.4596</b> | <b>6.1706</b> |          | <b>7,079.5017</b> | <b>7,079.5017</b> | <b>2.2399</b> |     | <b>7,135,4987</b> |



## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.3 Grading - 2019****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          |
| 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          |
| Worker       | 0.1067        | 0.0747        | 0.8108        | 2.2200e-003        | 0.2236        | 1.7400e-003        | 0.2253        | 0.0593         | 1.6000e-003        | 0.0609        |          | 220.9312        | 220.9312        | 6.9000e-003        |     | 221.1037        |
| <b>Total</b> | <b>0.1067</b> | <b>0.0747</b> | <b>0.8108</b> | <b>2.2200e-003</b> | <b>0.2236</b> | <b>1.7400e-003</b> | <b>0.2253</b> | <b>0.0593</b>  | <b>1.6000e-003</b> | <b>0.0609</b> |          | <b>220.9312</b> | <b>220.9312</b> | <b>6.9000e-003</b> |     | <b>221.1037</b> |

**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 |               |                |                |               | 9.7338        | 0.0000        | 9.7338         | 3.7110         | 0.0000        | 3.7110        |               |                   | 0.0000            |               |     | 0.0000            |
| Off-Road      | 5.4939        | 65.8336        | 33.9306        | 0.0715        |               | 2.6735        | 2.6735         |                | 2.4596        | 2.4596        | 0.0000        | 7,079.5017        | 7,079.5017        | 2.2399        |     | 7,135.4987        |
| <b>Total</b>  | <b>5.4939</b> | <b>65.8336</b> | <b>33.9306</b> | <b>0.0715</b> | <b>9.7338</b> | <b>2.6735</b> | <b>12.4073</b> | <b>3.7110</b>  | <b>2.4596</b> | <b>6.1706</b> | <b>0.0000</b> | <b>7,079.5017</b> | <b>7,079.5017</b> | <b>2.2399</b> |     | <b>7,135.4987</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.3 Grading - 2019****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          |
| 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          |
| Worker       | 0.1067        | 0.0747        | 0.8108        | 2.2200e-003        | 0.2236        | 1.7400e-003        | 0.2253        | 0.0593         | 1.6000e-003        | 0.0609        |          | 220.9312        | 220.9312        | 6.9000e-003        |     | 221.1037        |
| <b>Total</b> | <b>0.1067</b> | <b>0.0747</b> | <b>0.8108</b> | <b>2.2200e-003</b> | <b>0.2236</b> | <b>1.7400e-003</b> | <b>0.2253</b> | <b>0.0593</b>  | <b>1.6000e-003</b> | <b>0.0609</b> |          | <b>220.9312</b> | <b>220.9312</b> | <b>6.9000e-003</b> |     | <b>221.1037</b> |

**3.3 Grading - 2020****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 |               |                |                |               | 9.7338        | 0.0000        | 9.7338         | 3.7110         | 0.0000        | 3.7110        |          |                        | 0.0000                 |               |     | 0.0000                 |
| Off-Road      | 5.1888        | 60.8826        | 32.3988        | 0.0715        |               | 2.4690        | 2.4690         |                | 2.2714        | 2.2714        |          | 6,925.105<br>1         | 6,925.105<br>1         | 2.2397        |     | 6,981.098<br>1         |
| <b>Total</b>  | <b>5.1888</b> | <b>60.8826</b> | <b>32.3988</b> | <b>0.0715</b> | <b>9.7338</b> | <b>2.4690</b> | <b>12.2028</b> | <b>3.7110</b>  | <b>2.2714</b> | <b>5.9825</b> |          | <b>6,925.105<br/>1</b> | <b>6,925.105<br/>1</b> | <b>2.2397</b> |     | <b>6,981.098<br/>1</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.3 Grading - 2020****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          |
| 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          |
| Worker       | 0.0987        | 0.0666        | 0.7362        | 2.1500e-003        | 0.2236        | 1.7000e-003        | 0.2253        | 0.0593         | 1.5600e-003        | 0.0609        |          | 214.0730        | 214.0730        | 6.1400e-003        |     | 214.2265        |
| <b>Total</b> | <b>0.0987</b> | <b>0.0666</b> | <b>0.7362</b> | <b>2.1500e-003</b> | <b>0.2236</b> | <b>1.7000e-003</b> | <b>0.2253</b> | <b>0.0593</b>  | <b>1.5600e-003</b> | <b>0.0609</b> |          | <b>214.0730</b> | <b>214.0730</b> | <b>6.1400e-003</b> |     | <b>214.2265</b> |

**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 |               |                |                |               | 9.7338        | 0.0000        | 9.7338         | 3.7110         | 0.0000        | 3.7110        |               |                        | 0.0000                 |               |     | 0.0000                 |
| Off-Road      | 5.1888        | 60.8826        | 32.3988        | 0.0715        |               | 2.4690        | 2.4690         |                | 2.2714        | 2.2714        | 0.0000        | 6,925.105<br>1         | 6,925.105<br>1         | 2.2397        |     | 6,981.098<br>1         |
| <b>Total</b>  | <b>5.1888</b> | <b>60.8826</b> | <b>32.3988</b> | <b>0.0715</b> | <b>9.7338</b> | <b>2.4690</b> | <b>12.2028</b> | <b>3.7110</b>  | <b>2.2714</b> | <b>5.9825</b> | <b>0.0000</b> | <b>6,925.105<br/>1</b> | <b>6,925.105<br/>1</b> | <b>2.2397</b> |     | <b>6,981.098<br/>1</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.3 Grading - 2020****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          |
| 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          |
| Worker       | 0.0987        | 0.0666        | 0.7362        | 2.1500e-003        | 0.2236        | 1.7000e-003        | 0.2253        | 0.0593         | 1.5600e-003        | 0.0609        |          | 214.0730        | 214.0730        | 6.1400e-003        |     | 214.2265        |
| <b>Total</b> | <b>0.0987</b> | <b>0.0666</b> | <b>0.7362</b> | <b>2.1500e-003</b> | <b>0.2236</b> | <b>1.7000e-003</b> | <b>0.2253</b> | <b>0.0593</b>  | <b>1.5600e-003</b> | <b>0.0609</b> |          | <b>214.0730</b> | <b>214.0730</b> | <b>6.1400e-003</b> |     | <b>214.2265</b> |

**3.4 Building Construction - 2020****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     | 3.3632        | 36.6770        | 18.6286        | 0.0430        |               | 1.6373        | 1.6373        |                | 1.5290        | 1.5290        |          | 4,114.5597        | 4,114.5597        | 1.1279        |     | 4,142.7566        |
| <b>Total</b> | <b>3.3632</b> | <b>36.6770</b> | <b>18.6286</b> | <b>0.0430</b> |               | <b>1.6373</b> | <b>1.6373</b> |                | <b>1.5290</b> | <b>1.5290</b> |          | <b>4,114.5597</b> | <b>4,114.5597</b> | <b>1.1279</b> |     | <b>4,142.7566</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.4 Building Construction - 2020****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                 |
| Vendor       | 0.2408        | 7.3379        | 1.9501        | 0.0175        | 0.4480        | 0.0369        | 0.4850        | 0.1290         | 0.0353        | 0.1643        |          | 1,865.589<br>7         | 1,865.589<br>7         | 0.1295        |     | 1,868.828<br>2         |
| Worker       | 0.8784        | 0.5928        | 6.5520        | 0.0191        | 1.9896        | 0.0151        | 2.0047        | 0.5277         | 0.0139        | 0.5416        |          | 1,905.249<br>6         | 1,905.249<br>6         | 0.0546        |     | 1,906.615<br>6         |
| <b>Total</b> | <b>1.1192</b> | <b>7.9306</b> | <b>8.5021</b> | <b>0.0366</b> | <b>2.4376</b> | <b>0.0520</b> | <b>2.4897</b> | <b>0.6566</b>  | <b>0.0492</b> | <b>0.7059</b> |          | <b>3,770.839<br/>3</b> | <b>3,770.839<br/>3</b> | <b>0.1842</b> |     | <b>3,775.443<br/>8</b> |

**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     | 3.3632        | 36.6770        | 18.6286        | 0.0430        |               | 1.6373        | 1.6373        |                | 1.5290        | 1.5290        | 0.0000        | 4,114.559<br>7         | 4,114.559<br>7         | 1.1279        |     | 4,142.756<br>6         |
| <b>Total</b> | <b>3.3632</b> | <b>36.6770</b> | <b>18.6286</b> | <b>0.0430</b> |               | <b>1.6373</b> | <b>1.6373</b> |                | <b>1.5290</b> | <b>1.5290</b> | <b>0.0000</b> | <b>4,114.559<br/>7</b> | <b>4,114.559<br/>7</b> | <b>1.1279</b> |     | <b>4,142.756<br/>6</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.4 Building Construction - 2020****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                 |
| Vendor       | 0.2408        | 7.3379        | 1.9501        | 0.0175        | 0.4480        | 0.0369        | 0.4850        | 0.1290         | 0.0353        | 0.1643        |          | 1,865.589<br>7         | 1,865.589<br>7         | 0.1295        |     | 1,868.828<br>2         |
| Worker       | 0.8784        | 0.5928        | 6.5520        | 0.0191        | 1.9896        | 0.0151        | 2.0047        | 0.5277         | 0.0139        | 0.5416        |          | 1,905.249<br>6         | 1,905.249<br>6         | 0.0546        |     | 1,906.615<br>6         |
| <b>Total</b> | <b>1.1192</b> | <b>7.9306</b> | <b>8.5021</b> | <b>0.0366</b> | <b>2.4376</b> | <b>0.0520</b> | <b>2.4897</b> | <b>0.6566</b>  | <b>0.0492</b> | <b>0.7059</b> |          | <b>3,770.839<br/>3</b> | <b>3,770.839<br/>3</b> | <b>0.1842</b> |     | <b>3,775.443<br/>8</b> |

**3.5 Architectural Coating - 2020****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 | 0.6563        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                 | 0.0000          |               |     | 0.0000          |
| Off-Road        | 0.3229        | 2.2451        | 2.4419        | 3.9600e-003        |               | 0.1479        | 0.1479        |                | 0.1479        | 0.1479        |          | 375.2641        | 375.2641        | 0.0291        |     | 375.9904        |
| <b>Total</b>    | <b>0.9792</b> | <b>2.2451</b> | <b>2.4419</b> | <b>3.9600e-003</b> |               | <b>0.1479</b> | <b>0.1479</b> |                | <b>0.1479</b> | <b>0.1479</b> |          | <b>375.2641</b> | <b>375.2641</b> | <b>0.0291</b> |     | <b>375.9904</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.5 Architectural Coating - 2020****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          |
| 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          |
| Worker       | 0.1777        | 0.1199        | 1.3251        | 3.8700e-003        | 0.4024        | 3.0500e-003        | 0.4055        | 0.1067         | 2.8100e-003        | 0.1095        |          | 385.3314        | 385.3314        | 0.0111        |     | 385.6077        |
| <b>Total</b> | <b>0.1777</b> | <b>0.1199</b> | <b>1.3251</b> | <b>3.8700e-003</b> | <b>0.4024</b> | <b>3.0500e-003</b> | <b>0.4055</b> | <b>0.1067</b>  | <b>2.8100e-003</b> | <b>0.1095</b> |          | <b>385.3314</b> | <b>385.3314</b> | <b>0.0111</b> |     | <b>385.6077</b> |

**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 | 0.6563        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |               |                 | 0.0000          |               |     | 0.0000          |
| Off-Road        | 0.3229        | 2.2451        | 2.4419        | 3.9600e-003        |               | 0.1479        | 0.1479        |                | 0.1479        | 0.1479        | 0.0000        | 375.2641        | 375.2641        | 0.0291        |     | 375.9904        |
| <b>Total</b>    | <b>0.9792</b> | <b>2.2451</b> | <b>2.4419</b> | <b>3.9600e-003</b> |               | <b>0.1479</b> | <b>0.1479</b> |                | <b>0.1479</b> | <b>0.1479</b> | <b>0.0000</b> | <b>375.2641</b> | <b>375.2641</b> | <b>0.0291</b> |     | <b>375.9904</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.5 Architectural Coating - 2020****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          |
| 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          |
| Worker       | 0.1777        | 0.1199        | 1.3251        | 3.8700e-003        | 0.4024        | 3.0500e-003        | 0.4055        | 0.1067         | 2.8100e-003        | 0.1095        |          | 385.3314        | 385.3314        | 0.0111        |     | 385.6077        |
| <b>Total</b> | <b>0.1777</b> | <b>0.1199</b> | <b>1.3251</b> | <b>3.8700e-003</b> | <b>0.4024</b> | <b>3.0500e-003</b> | <b>0.4055</b> | <b>0.1067</b>  | <b>2.8100e-003</b> | <b>0.1095</b> |          | <b>385.3314</b> | <b>385.3314</b> | <b>0.0111</b> |     | <b>385.6077</b> |

**3.6 Paving - 2020****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     | 1.6542        | 16.7230        | 17.3945        | 0.0270        |               | 0.9074        | 0.9074        |                | 0.8365        | 0.8365        |          | 2,584.2764        | 2,584.2764        | 0.8192        |     | 2,604.7556        |
| Paving       | 0.1324        |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                   | 0.0000            |               |     | 0.0000            |
| <b>Total</b> | <b>1.7866</b> | <b>16.7230</b> | <b>17.3945</b> | <b>0.0270</b> |               | <b>0.9074</b> | <b>0.9074</b> |                | <b>0.8365</b> | <b>0.8365</b> |          | <b>2,584.2764</b> | <b>2,584.2764</b> | <b>0.8192</b> |     | <b>2,604.7556</b> |



## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.6 Paving - 2020****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          |
| 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          |
| Worker       | 0.0740        | 0.0500        | 0.5521        | 1.6100e-003        | 0.1677        | 1.2700e-003        | 0.1689        | 0.0445         | 1.1700e-003        | 0.0456        |          | 160.5547        | 160.5547        | 4.6000e-003        |     | 160.6699        |
| <b>Total</b> | <b>0.0740</b> | <b>0.0500</b> | <b>0.5521</b> | <b>1.6100e-003</b> | <b>0.1677</b> | <b>1.2700e-003</b> | <b>0.1689</b> | <b>0.0445</b>  | <b>1.1700e-003</b> | <b>0.0456</b> |          | <b>160.5547</b> | <b>160.5547</b> | <b>4.6000e-003</b> |     | <b>160.6699</b> |

**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     | 1.6542        | 16.7230        | 17.3945        | 0.0270        |               | 0.9074        | 0.9074        |                | 0.8365        | 0.8365        | 0.0000        | 2,584.2764        | 2,584.2764        | 0.8192        |     | 2,604.7556        |
| Paving       | 0.1324        |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |               |                   | 0.0000            |               |     | 0.0000            |
| <b>Total</b> | <b>1.7866</b> | <b>16.7230</b> | <b>17.3945</b> | <b>0.0270</b> |               | <b>0.9074</b> | <b>0.9074</b> |                | <b>0.8365</b> | <b>0.8365</b> | <b>0.0000</b> | <b>2,584.2764</b> | <b>2,584.2764</b> | <b>0.8192</b> |     | <b>2,604.7556</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**3.6 Paving - 2020****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          |
| 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          |
| Worker       | 0.0740        | 0.0500        | 0.5521        | 1.6100e-003        | 0.1677        | 1.2700e-003        | 0.1689        | 0.0445         | 1.1700e-003        | 0.0456        |          | 160.5547        | 160.5547        | 4.6000e-003        |     | 160.6699        |
| <b>Total</b> | <b>0.0740</b> | <b>0.0500</b> | <b>0.5521</b> | <b>1.6100e-003</b> | <b>0.1677</b> | <b>1.2700e-003</b> | <b>0.1689</b> | <b>0.0445</b>  | <b>1.1700e-003</b> | <b>0.0456</b> |          | <b>160.5547</b> | <b>160.5547</b> | <b>4.6000e-003</b> |     | <b>160.6699</b> |

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

|             | 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   | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000        | 0.0000       | 0.0000     | 0.0000         | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 |     | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000        | 0.0000       | 0.0000     | 0.0000         | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 |     | 0.0000 |

## 4.2 Trip Summary Information

| Land Use    | Average Daily Trip Rate |          |        | Unmitigated | Mitigated  |
|-------------|-------------------------|----------|--------|-------------|------------|
|             | Weekday                 | Saturday | Sunday | Annual VMT  | Annual VMT |
| Parking Lot | 0.00                    | 0.00     | 0.00   |             |            |
| Total       | 0.00                    | 0.00     | 0.00   |             |            |

## 4.3 Trip Type Information

| Land Use    | Miles      |            |             | Trip %     |            |             | Trip Purpose % |          |         |
|-------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
|             | 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 |
| Parking Lot | 16.60      | 8.40       | 6.90        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |

## 4.4 Fleet Mix

| Land Use    | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Parking Lot | 0.547828 | 0.043645 | 0.199892 | 0.122290 | 0.016774 | 0.005862 | 0.020637 | 0.032653 | 0.002037 | 0.001944 | 0.004777 | 0.000705 | 0.000956 |

## 5.0 Energy Detail

Historical Energy Use: N

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

## 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   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |

## 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   |               |               |               |               |               |
| 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        |
| <b>Total</b> |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**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   |               |               |               |               |               |
| 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        |
| <b>Total</b> |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

**6.0 Area Detail****6.1 Mitigation Measures Area**

|             | 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   | 0.1011 | 1.0100e-003 | 0.1091 | 1.0000e-005 |               | 3.9000e-004  | 3.9000e-004 |                | 3.9000e-004   | 3.9000e-004 |          | 0.2324    | 0.2324    | 6.2000e-004 |     | 0.2480 |
| Unmitigated | 0.1011 | 1.0100e-003 | 0.1091 | 1.0000e-005 |               | 3.9000e-004  | 3.9000e-004 |                | 3.9000e-004   | 3.9000e-004 |          | 0.2324    | 0.2324    | 6.2000e-004 |     | 0.2480 |

## The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

**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 | 0.0324        |                    |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             |          |               | 0.0000        |                    |     | 0.0000        |
| Consumer Products     | 0.0585        |                    |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             |          |               | 0.0000        |                    |     | 0.0000        |
| Landscaping           | 0.0103        | 1.0100e-003        | 0.1091        | 1.0000e-005        |               | 3.9000e-004        | 3.9000e-004        |                | 3.9000e-004        | 3.9000e-004        |          | 0.2324        | 0.2324        | 6.2000e-004        |     | 0.2480        |
| <b>Total</b>          | <b>0.1011</b> | <b>1.0100e-003</b> | <b>0.1091</b> | <b>1.0000e-005</b> |               | <b>3.9000e-004</b> | <b>3.9000e-004</b> |                | <b>3.9000e-004</b> | <b>3.9000e-004</b> |          | <b>0.2324</b> | <b>0.2324</b> | <b>6.2000e-004</b> |     | <b>0.2480</b> |

**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 | 0.0324        |                    |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             |          |               | 0.0000        |                    |     | 0.0000        |
| Consumer Products     | 0.0585        |                    |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             |          |               | 0.0000        |                    |     | 0.0000        |
| Landscaping           | 0.0103        | 1.0100e-003        | 0.1091        | 1.0000e-005        |               | 3.9000e-004        | 3.9000e-004        |                | 3.9000e-004        | 3.9000e-004        |          | 0.2324        | 0.2324        | 6.2000e-004        |     | 0.2480        |
| <b>Total</b>          | <b>0.1011</b> | <b>1.0100e-003</b> | <b>0.1091</b> | <b>1.0000e-005</b> |               | <b>3.9000e-004</b> | <b>3.9000e-004</b> |                | <b>3.9000e-004</b> | <b>3.9000e-004</b> |          | <b>0.2324</b> | <b>0.2324</b> | <b>6.2000e-004</b> |     | <b>0.2480</b> |

**7.0 Water Detail**

The Park @ Live Oak (Parking) - South Coast AQMD Air District, Winter

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**7.1 Mitigation Measures Water****8.0 Waste Detail**

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**8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

**10.0 Stationary Equipment**

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**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**

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**Attachment E**  
**Changes to the Draft EIR**





**EIR Technical Appendices (bound separately)**

|            |                                                                       |
|------------|-----------------------------------------------------------------------|
| A:         | Initial Study, Notice of Preparation, and Written Comments on the NOP |
| B1:        | Air Quality Impact Analysis                                           |
| B2:        | Mobile Source Health Risk Assessment                                  |
| B3:        | Supplemental Air Quality Assessment                                   |
| C:         | Energy Analysis                                                       |
| D:         | Geotechnical Report                                                   |
| E:         | Greenhouse Gas Emissions Analysis                                     |
| F:         | Phase I Environmental Site Assessment                                 |
| G1:        | Preliminary Hydrology Report                                          |
| G2:        | Low Impact Development                                                |
| H:         | Noise Impact Analysis                                                 |
| I1:        | Traffic Impact Analysis                                               |
| I2:        | Traffic Access Evaluation Memorandum                                  |
| <u>I3:</u> | <u>Supplemental Traffic Assessment</u>                                |
| J1:        | Water Supply Assessment                                               |
| J2:        | Water Supply Well Technical Memorandum                                |
| J3:        | Sewer Area Study                                                      |
| K:         | Biological Resources Letter Report                                    |
| L:         | Cultural Resources Record Search                                      |
| M:         | Fiscal & Economic Impacts Summary Memorandum                          |
| N:         | Written Correspondence                                                |



| THRESHOLD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | MITIGATION MEASURES (MM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | RESPONSIBLE PARTY                             | MONITORING PARTY                                       | IMPLEMENTATION STAGE                                         | LEVEL OF SIGNIFICANCE AFTER MITIGATION                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------|
| <b>4.2 Air Quality</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |                                                        |                                                              |                                                                               |
| <b>Summary of Impacts</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |                                                        |                                                              |                                                                               |
| <p><u>Threshold a:</u> Even with the incorporation of the required mitigation measures and regulatory requirements specified in EIR Subsection 4.2, the Project's operational emissions of NO<sub>x</sub> and VOCs would exceed SCAQMD Daily Regional Thresholds for these pollutants, meaning the Project would conflict with Consistency Criterion No. 1 of the 2016 AQMP. No other mitigation measures are available that are feasible for the Project Applicant to implement and for the City of Irwindale to enforce that have a proportional nexus to the Project's level of impact, as the source of a large majority of these emissions is tailpipe emissions from cars and trucks traveling to and from the Project site. The City of Irwindale does not have the jurisdictional authority or enforcement capacity to regulate motor vehicle engines, fuel type use, or the types of vehicles that access the Project site. As such, it is concluded that the Project's inconsistency with the SCAQMD 2016 AQMP would result in a significant and unavoidable impact on both a direct and cumulatively considerable basis.</p> | <p><b>MM 4.2-1</b> Prior to building permit issuance, the City of Irwindale shall verify that a note is provided on all building plans specifying that compliance with SCAQMD Rule 1113 is mandatory during application of all architectural coatings. Project contractors shall be required to comply with the note and maintain written records of such compliance that can be inspected by the City of Irwindale upon request. This note also shall indicate that only "low-volatile organic compound" paint products (no more than 50 gram/liter of VOC) and/or High Pressure Low Volume (HPLV) applications shall be used. All other architectural coatings shall comply with the VOC limits prescribed by SCAQMD Rule 1113.</p>                                                                                                                                                                                                                                                                          | Project Applicant;<br>Construction Contractor | City of Irwindale<br>Building and Safety<br>Department | Prior to issuance of a<br>Project-related building<br>permit | Significant and Unavoidable<br>Direct and Cumulatively<br>Considerable Impact |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p><b>MM 4.2-2</b> Project construction activities shall comply with the provisions of South Coast Air Quality Management District Rule 403, "Fugitive Dust," and <u>Rule 403(e) "Additional Requirements for Large Operations."</u> Rule 403 requires implementation of best available dust control measures during construction activities that generate fugitive dust, such as earth moving, grading, and equipment travel on unpaved roads. Prior to grading permit issuance, the City of Irwindale shall verify that the following notes are specified on the grading plan. Project construction contractors shall be required to ensure compliance with the notes and permit periodic inspection of the construction site by City of Irwindale staff or its designee to confirm compliance. These notes shall also be specified in bid documents issued to prospective construction contractors.</p> <p>a) During grading and ground-disturbing construction activities, the construction contractor</p> | Project Applicant;<br>Grading Contractor      | City of Irwindale<br>Building and Safety<br>Department | Prior to issuance of a<br>Project-related grading<br>permit  |                                                                               |



| THRESHOLD | MITIGATION MEASURES (MM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RESPONSIBLE PARTY                                                                                                | MONITORING PARTY                                                                                                                                                        | IMPLEMENTATION STAGE                                                                                                                                                         | LEVEL OF SIGNIFICANCE AFTER MITIGATION |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|           | <p><b>MM 4.2-6</b> As a condition of building permit issuance, the City of Irwindale shall require installation of passenger car EV charging stations and designated carpool parking stalls per the provisions of the California Green Building Standards Code <u>and require that each building be constructed with an adequately sized electrical panel(s) and conduit to accommodate future EV charging station at a minimum of 5% of the passenger car parking spaces.</u></p> <p><b>MM 4.2-7</b> Legible, durable, weather-proof signs shall be placed 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 (3) minutes once the vehicle is stopped, the transmission is set to “neutral” or “park,” and the parking brake is engaged; and 3) telephone numbers of the building facilities manager and the CARB to report violations. Prior to the issuance of a certificate of occupancy, the City of Irwindale shall conduct a site inspection to ensure that the signs are in place.</p> <p><b>MM 4.2-8</b> As a condition of certificates of occupancy, owner users and tenants of buildings with loading docks shall be required to ensure that all heavy-heavy duty (HHD) vehicles accessing the building comply with 13 California Code of Regulations Section 2025, as may be amended (the “Regulations”), and that all HHD vehicles accessing the Project site comply with the required registration and reporting provisions of the Regulations. Developer and all successors also shall include these obligations in all leases of buildings with loading</p> | <p>Project Applicant</p> <p>Project Applicant and all successors</p> <p>Project Applicant and all successors</p> | <p>City of Irwindale Building and Safety Department</p> <p>City of Irwindale Building and Safety Department</p> <p>City of Irwindale Building and Safety Department</p> | <p>Prior to issuance of Project-related building permit</p> <p>Prior to the issuance of a certificate of occupancy</p> <p>Prior to issuance of certificates of occupancy</p> |                                        |



| THRESHOLD | MITIGATION MEASURES (MM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | RESPONSIBLE PARTY                                                                                 | MONITORING PARTY                                                                                                                | IMPLEMENTATION STAGE                                                                                                                                                                        | LEVEL OF SIGNIFICANCE AFTER MITIGATION |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|           | <p>docks. The building owner and occupant shall allow periodic inspection of the site by the City of Irwindale or its designee to confirm compliance. <u>Building users/operators with truck check-in gates shall maintain truck access records which shall be made available for inspection by the City of Irwindale. This requirement shall expire on January 1, 2023.</u></p> <p><b>MM 4.2-9</b> As a condition of certificates of occupancy, all on-site outdoor cargo handling equipment (including yard trucks, hostlers, yard goats, pallet jacks, forklifts, and other on-site equipment) shall be required to be powered by electricity, compressed natural gas, propane, or diesel-fueled engines that comply with the CARB/USEPA Tier IV Engine standards for off-road vehicles or better (defined as emitting less than or equal to 0.015 grams per brake horsepower-hour [g/bhp-hr] for PM<sub>10</sub>) and all indoor cargo handling equipment shall be required to be powered by electricity, compressed natural gas, or propane. Use of indoor diesel-fueled equipment shall be prohibited. Developer and all successors also shall include these obligations in all building leases. The building owner and occupant shall allow periodic inspection of the site by the City of Irwindale or its designee to confirm compliance. <u>Electrical panels should be appropriately sized to allow for future expanded use.</u></p> <p><b>MM 4.2-10</b> Prior to the issuance of a building permit for any building having over 200,000 square feet of floor space, the City of Irwindale shall verify that the building's roof is designed to accommodate a photovoltaic (PV) solar array taking into consideration limitations imposed by other rooftop equipment, roof warranties, building and fire code requirements, and other physical or legal limitations. The building shall</p> | <p>Project Applicant and all successors</p> <p>Project Applicant;<br/>Construction Contractor</p> | <p>City of Irwindale<br/>Building and Safety<br/>Department</p> <p>City of Irwindale<br/>Building and Safety<br/>Department</p> | <p>Prior to issuance of<br/>certificates of occupancy</p> <p>Prior to the issuance of a<br/>building permit for any<br/>building having over<br/>200,000 square feet of floor<br/>space</p> |                                        |



| THRESHOLD | MITIGATION MEASURES (MM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | RESPONSIBLE PARTY | MONITORING PARTY | IMPLEMENTATION STAGE | LEVEL OF SIGNIFICANCE AFTER MITIGATION |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------|----------------------|----------------------------------------|
|           | <p>b) As a condition of any building permit that would involve ingress/egress at the intersection of Arrow Highway and Private Drive B, the Project Applicant shall install the following improvement at Private Drive B &amp; Arrow Highway (Intersection #11). The improvement shall be constructed and operable prior to the issuance of a certificate of occupancy.</p> <ul style="list-style-type: none"><li>• Install a traffic signal (E+P requirement with maximum commercial development in Planning Areas 2A and 3A)</li></ul> <p>c) As a condition of any building permit that would involve ingress/egress access at the intersection of Live Oak Avenue and Private Drive A, the Project Applicant shall install the following improvement at Private Drive A and Live Oak Avenue (Intersection #16). The improvement shall be constructed and operable prior to the issuance of a certificate of occupancy.</p> <ul style="list-style-type: none"><li>• Install a traffic signal (E+P requirement)</li></ul> <p>d) As a condition of any <u>grading or</u> building permit that would involve ingress/egress access at the existing intersection of Speedway Driveway &amp; Live Oak Avenue, the Project Applicant shall install the following roadway improvement at Speedway Driveway &amp; Live Oak Avenue (Intersection #7). The improvement shall be constructed and operable prior to the issuance of a certificate of occupancy.</p> <ul style="list-style-type: none"><li>• Install a traffic signal (E+P requirement)</li><li>• Add a 3rd westbound through lane. (E+P requirement)</li></ul> <p>e) As a condition of any building permit that would involve ingress/egress at the existing intersection of Live Oak Avenue and the entrance driveway to the</p> |                   |                  |                      |                                        |



| THRESHOLD | MITIGATION MEASURES (MM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RESPONSIBLE PARTY | MONITORING PARTY | IMPLEMENTATION STAGE | LEVEL OF SIGNIFICANCE AFTER MITIGATION |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------|----------------------|----------------------------------------|
|           | <ul style="list-style-type: none"><li>• Restripe a 2nd eastbound through lane and widen the bridge over Sawpit Wash.</li></ul> <p>b) Prior to issuance of building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #2 – Myrtle Avenue/Peck Road &amp; Live Oak Avenue:</p> <ul style="list-style-type: none"><li>• Add a 2nd southbound left turn lane and modify the existing traffic signal to accommodate the 1st southbound left turn lane.</li></ul> <p>c) Prior to issuance of <b>grading and</b> building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #4 – Live Oak Avenue &amp; Arrow Highway (West):</p> <ul style="list-style-type: none"><li>• Add a 3rd westbound through lane.</li><li>• Restripe a 3rd eastbound through lane.</li><li>• Modify the existing traffic signal to accommodate the above-listed lane configuration improvements.</li></ul> <p>d) Prior to issuance of <b>grading and</b> building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #15 – Avenida Barbosa/Private Drive A &amp; Arrow Highway:</p> <ul style="list-style-type: none"><li>• Add a 3rd westbound through lane.</li><li>• Add a 2nd eastbound left turn lane.</li><li>• Modify the traffic signal to implement overlap phasing on the westbound right turn lane and accommodate the changes to lane configuration.</li></ul> |                   |                  |                      |                                        |



| THRESHOLD | MITIGATION MEASURES (MM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | RESPONSIBLE PARTY | MONITORING PARTY | IMPLEMENTATION STAGE | LEVEL OF SIGNIFICANCE AFTER MITIGATION |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------|----------------------|----------------------------------------|
|           | <p>e) Prior to issuance of <b>grading and</b> building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #7 – Speedway Driveway &amp; Live Oak Avenue:</p> <ul style="list-style-type: none"><li>• Install a traffic signal.</li></ul> <p>f) Prior to issuance of building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #13 – Driveway 7/Driveway &amp; Live Oak Avenue:</p> <ul style="list-style-type: none"><li>• Add an eastbound right turn lane and modify the existing traffic signal to accommodate the new eastbound right turn lane.</li></ul> <p>g) Prior to issuance of <b>grading and</b> building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #23 – I-605 Northbound Off-Ramp &amp; Live Oak Avenue:</p> <ul style="list-style-type: none"><li>• Install a traffic signal.</li></ul> <p>h) Prior to the issuance of building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #26 – Rivergrade Road &amp; Live Oak Avenue:</p> <ul style="list-style-type: none"><li>• Modify the traffic signal to implement overlap phasing on the northbound right turn lane.</li></ul> <p>i) Prior to issuance of building permits, the Project Applicant shall make a fair share monetary</p> |                   |                  |                      |                                        |



law over natural resources affected by a project which are held in trust for the people of the State of California.”

For the proposed Project, known Responsible Agencies will include:

- Los Angeles Regional Water Quality Control Board (RWQCB), for the issuance of a General Construction Permit and approval of the Project’s Low Impact Development (LID) plan.
- California American Water for installation of an on-site water well and the approval of connections to existing water lines.
- Los Angeles County Sanitation Districts (LACSD) for the approval of connections to the municipal sewer system.
- Los Angeles County Public Health Department for a water well drilling permit.
- Main San Gabriel Watermaster for water well permit.
- South Coast Air Quality Management District (SCAQMD) for permits and approvals associated with the potential installation of stationary source equipment.

For the proposed Project, known Trustee Agencies will include:

- California Department of Transportation, for possible Outdoor Advertising Permit(s) related to new or altered billboards on the site adjacent to I-605.
- State Water Resources Control Board (SWRCB), Division of Drinking Water, for permits and approvals associated with the proposed on-site water well.

There are no other agencies known to the City of Irwindale that are identified as potential Responsible or Trustee Agencies for the proposed Project. Regardless, this EIR can be used by any Trustee Agency or Responsible Agency, whether listed above or not, as part of their decision-making processes in relation to the proposed Project.

## 1.6 EIR SCOPE, FORMAT AND CONTENT

### 1.6.1 EIR SCOPE

As a first step in complying with the procedural requirements of CEQA, an Initial Study (IS) was prepared by the City of Irwindale to preliminarily identify the environmental issue areas that may be adversely impacted by the Project. Following completion of the Initial Study, the City filed a Notice of Preparation (NOP) with the California Office of Planning and Research (State Clearinghouse) to indicate that an EIR would be prepared to evaluate the Project’s potential to impact the environment. The NOP was filed with the State Clearinghouse and distributed to interested parties on April 2, 2018, for a 30-day public review period. Public review of the NOP closed on May 2, 2018.

The City of Irwindale also advertised the NOP on their City website and provided a hard copy of the NOP and Initial Study for public review at the Irwindale Public Library, office of the Irwindale City Clerk, and office of the Irwindale Planning Department. The objective of distributing the NOP for





| COMMENTS                                   | DATE           | COMMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | LOCATION IN EIR WHERE COMMENT IS ADDRESSED                                                                 |
|--------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
|                                            |                | information for the above-mentioned trunk sewer.                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                            |
|                                            |                | - Wastewater generated by the Project will be treated at the San Jose Creek Water Reclamation Plant (WRP). LACSD provides current and maximum capacity information for the San Jose Creek WRP.                                                                                                                                                                                                                                                                            | - Subsection 4.13, <i>Utilities and Service Systems</i>                                                    |
|                                            |                | - LACSD estimates average wastewater flow from the Project would be 471,705 gallons per day. LACSD provided link to access online average wastewater generation factors. <u>(Note that this figure was corrected to 322,325 gallons per day in the FEIR pursuant to Comment D-1.)</u>                                                                                                                                                                                     | - Subsection 4.13, <i>Utilities and Service Systems</i>                                                    |
|                                            |                | - The Project will be required to pay sewer connection fee prior to LACSD issuing a permit for sewer connection.                                                                                                                                                                                                                                                                                                                                                          | - Subsection 4.13, <i>Utilities and Service Systems</i>                                                    |
|                                            |                | - The capacities of the LACSD's wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Expansions of LACSD's facilities must be sized and service phased in a manner that is consistent with the SCAG regional growth forecasts. The available capacity of the LACSD treatment facilities is therefore limited to levels associated with the approved growth identified by SCAG. | - Subsection 4.13, <i>Utilities and Service Systems</i>                                                    |
| Lozeau Drury LLP                           | April 17, 2018 | - Request to receive notices of CEQA actions and notices of any public hearings related to the Project.                                                                                                                                                                                                                                                                                                                                                                   | - Lozeau Drury LLP is included on the mailing list for notices related to this EIR. No analysis necessary. |
| Native American Heritage Commission (NAHC) | April 5, 2018  | - Draft EIR should address AB 52 and SB 18. Recommended conducting a cultural resources assessment that includes consultation with the regional California Historical Research Information System (CHRIS) Center, an archaeological inventory survey (if necessary), consultation with the NAHC regarding a Sacred Lands File search, and mitigation measures that address unknown archaeological resources                                                               | - Subsection 4.12, <i>Tribal Cultural Resources</i>                                                        |



## 5. Outdoor Lighting

Within Chapter 4, *Design Guidelines*, of The Park @ Live Oak Specific Plan, Outdoor Lighting Guidelines are established for “Public Lighting” (lighting located along the perimeter of the Project site and along internal public drive aisles) and “Parcel Lighting” (lighting used to illuminate internal areas for purposes of security, safety and nighttime aesthetics). All outdoor lighting is required to feature cutoff devices and to be focused, directed downward, and arranged so as to minimize glare and “spill over” to public streets or adjacent properties. Further, all lighting proposed within the public right-of-way shall adhere to applicable City of Irwindale requirements. Additionally, The Park @ Live Oak Specific Plan requires all outdoor lighting at the Project site to be low intensity and energy-conserving. (T&B Planning, Inc., 2019, pp. 49-50)

### I. Development Standards

The development standards applicable to the Project are presented in Chapter 3, *Development Standards*, of The Park @ Live Oak Specific Plan. Chapter 3 of The Park @ Live Oak Specific Plan establishes the land use permissions, general development standards, and specific development standards for each of the proposed Planning Areas. Refer to Chapter 3 of The Park @ Live Oak Specific Plan for further details regarding the development standards applicable to the Project.

#### 3.3.2 GENERAL PLAN AMENDMENT (GPA) No. 01-2017

As shown on Figure 3-8, *Existing and Proposed General Plan Land Use Designations*, under existing conditions, the City of Irwindale General Plan designates the entirety of the Project site “Regional Commercial.” According to the City of Irwindale General Plan, the Regional Commercial land use designation is intended to encourage a balanced mix of commercial, office professional, and light manufacturing uses along high-visibility traffic corridors. The maximum allowable Floor Area Ratio (FAR; the ratio of the building floor area to the site area) for the Regional Commercial land use designation is 2.0. (City of Irwindale, 2008, p. 40)

The proposed GPA No. 01-2017 would amend the City of Irwindale’s General Plan Land Use Map by changing the land use designation for the 78.3-acre Project site from Regional Commercial to Commercial/Industrial, as shown on Figure 3-8, *Existing and Proposed General Plan Land Use Designations*. The “Commercial/Industrial” designation would allow for the Project site to be developed in accordance with the previously discussed land uses and development standards set forth in The Park @ Live Oak Specific Plan.

#### 3.3.3 ZONE CHANGE (ZC) No. 01-2017 AND ZONE ORDINANCE AMENDMENT (ZOA) No. 01-2019

The City of Irwindale Zoning Ordinance, which is Title 17 of the City’s Municipal Code, assigns a zoning designation to all properties inside the City’s boundaries. Development is required by law to comply with the provisions of the Zoning Ordinance. A zone change is proposed as part of the Project, as shown on Figure 3-9, *Existing and Proposed Zoning Designations*. The proposed Zone Change No. 01-2017 would amend the City of Irwindale’s Zoning Map to change the existing zoning designations of the Project site from “Heavy Manufacturing” (M-2) and “Quarry Overlay Zone (Q)” to “The Park



@ Live Oak Specific Plan,” as shown on Figure 3-9. The Park @ Live Oak Specific Plan zoning designation would allow for a variety of uses including general light industrial, manufacturing, warehouse/distribution, and e-commerce fulfillment center operations, commercial uses, retail services, professional offices, and other uses permitted by The Park @ Live Oak Specific Plan. In addition, Zone Ordinance No. 01-2019 is required to adopt the Park @ Live Oak Specific Plan. A complete list of the Project’s proposed permitted uses is provided within Table 3-1, *Permitted Uses*, of The Park @ Live Oak Specific Plan.

### 3.3.4 TENTATIVE PARCEL MAP (TPM) NO. 82551

Proposed Tentative Parcel Map (TPM) No. 82551 proposes to subdivide the approximately 78.3-acre Project site into legal lots to facilitate future development within The Park @ Live Oak. The TPM would establish a subdivision of 13 numbered lots to accommodate development and five lettered lots to accommodate common areas such as landscaping, surface water quality basins, and roads. TPM No. 82551 is depicted on Figure 3-10, *Tentative Parcel Map No. 82551*.

### 3.3.5 DEVELOPMENT AGREEMENT (DA) NO. 01-2017

A Development Agreement (DA) No. 01-2017 would be executed between the Project Applicant and the City of Irwindale strictly in relation to the proposed Project. California Government Code §§ 65864-65869.5 authorize the use of development agreements between any city, county, or city and county, with any person having a legal or equitable interest in real property for the development of the property. The DA would provide the Project Applicant with assurance that development of the Project may proceed subject to the rules and regulations in effect at the time of Project approval.

### 3.3.6 PROJECT CONSTRUCTION AND OPERATIONAL CHARACTERISTICS

#### A. Construction Details

Upon completion of the existing reclamation activities (which are not a part of the proposed Project evaluated in this EIR), the Project site will be “at grade” and suitable for construction, with no need for additional over-excavation or mass grading work. Grading for the Project would be limited to precise grading required to create building pads, roads, parking and truck court areas, detention basins, and other landscaped areas.

#### 1. *Conceptual Phasing Plan*

The Park @ Live Oak Specific Plan anticipates that development of the Project would occur in two (2) phases. The Project’s conceptual phasing plan is described in The Park @ Live Oak Specific Plan. Phase 1 generally covers the easterly portions of the Project site and would include: Industrial/Business Park Planning Area 1 and Commercial/Industrial Planning Area 1A. Private Drive A would also be constructed as part of Phase 1. Phase 2 generally covers the westerly portions of the Project site and would include: Industrial/Business Park Planning Areas 2 and 3; Commercial/Industrial Planning Areas 2A, 3A, and 4. Private Drive B would also be constructed as part of Phase 2 of the Project.



Table 3-4 Matrix of Project Approvals/Permits

| PUBLIC AGENCY                                                               | APPROVALS AND DECISIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>City of Irwindale</b>                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Proposed Project – City of Irwindale Discretionary Approvals</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| City Council                                                                | <ul style="list-style-type: none"> <li>• Approve, conditionally approve, or deny The Park @ Live Oak Specific Plan, General Plan Amendment (GPA) No. 01-2017, Zone Change (ZC) No. 01-2017, <a href="#">Zone Ordinance Amendment (ZOA) No. 01-2019</a>, Tentative Parcel Map (TPM) No. 82551, and Development Agreement (DA) No. 01-2017.</li> <li>• Reject or certify this EIR along with appropriate CEQA Findings.</li> </ul>                                                                                                                                                                                                                  |
| <b>Subsequent City of Irwindale Discretionary and Ministerial Approvals</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| City of Irwindale<br>Subsequent Implementing Approvals                      | <ul style="list-style-type: none"> <li>• Approve Final Map, parcel mergers, lot line adjustments, or parcel consolidations, as may be appropriate.</li> <li>• Approve precise site plan(s) and landscaping/irrigation plan (s), as may be appropriate.</li> <li>• Approve Conditional or Temporary Use Permits, if required.</li> <li>• Issue Grading Permits.</li> <li>• Issue Building Permits.</li> <li>• Approve Road Improvement Plans.</li> <li>• Approve Sewer Infrastructure Plans.</li> <li>• Issue Encroachment Permits.</li> <li>• Accept public right-of-way dedications.</li> <li>• Approve Low Impact Development (LID).</li> </ul> |
| <b>Other Agencies – Subsequent Approvals and Permits</b>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Los Angeles County Flood Control District                                   | <ul style="list-style-type: none"> <li>• Approvals for construction of storm water infrastructure and connection to municipal storm water system.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| California American Water Company                                           | <ul style="list-style-type: none"> <li>• Approvals for construction of water infrastructure, inclusive of a new water well, and connection to water distribution system.</li> <li>• Approvals for annexation of portions of the Project site into CAW's service area.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                  |
| Los Angeles Regional Water Quality Control Board                            | <ul style="list-style-type: none"> <li>• Issuance of a Construction Activity General Construction Permit.</li> <li>• Approval of LID.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Los Angeles County Sanitation Districts (LACSD)                             | <ul style="list-style-type: none"> <li>• Approval of connections to the municipal sewer system.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Los Angeles County Public Health Department                                 | <ul style="list-style-type: none"> <li>• Water well drinking permit.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Main San Gabriel Watermaster                                                | <ul style="list-style-type: none"> <li>• Water well permit.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| California Department of Transportation                                     | <ul style="list-style-type: none"> <li>• Outdoor Advertising Permit(s) related to new or altered billboards on the site adjacent to I-605.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| State Water Resources Control Board (SWRCB), Division of Drinking Water     | <ul style="list-style-type: none"> <li>• Permits and approvals associated with the proposed on-site water well.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <a href="#">South Coast Air Quality Management District (SCAQMD)</a>        | <ul style="list-style-type: none"> <li>• <a href="#">Permits and approvals associated with acquisition of new stationary equipment.</a></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



- SCAQMD Rule 403(e): Additional Requirements for Large Operations; which requires the implementation of applicable actions specified in Table 3, Contingency Control Measures for Large Operations, of SCAQMD Rule 403.
- SCAQMD Rule 431.2, Low Sulfur Fuel, which applies low sulfur fuel standards.
- SCAQMD Rule 1113: Table of Standards, which apply to architectural coatings.
- SCAQMD Rule 1186: PM10 Emissions from Paved and Unpaved Roads, and Livestock Operations, which requires the use of street sweepers.

#### 4.2.2 METHODOLOGY FOR ESTIMATING PROJECT-RELATED AIR QUALITY IMPACTS

##### A. Project-Related Construction Emissions

On October 17, 2017, the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts, released the latest version of the California Emissions Estimator Model™ (CalEEMod™) v2016.3.2. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (NO<sub>x</sub>, VOCs, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub>, and CO) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures. Accordingly, the latest version of CalEEMod™ has been used for this Project to determine construction and operational air quality emissions. (Urban Crossroads, 2018a, p. 39)

Construction activities associated with the Project would result in emissions of NO<sub>x</sub>, VOC, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub>, and CO. Construction related emissions are expected from the following construction activities:

- Grading
- Building Construction
- Architectural Coating
- Paving
- Construction Workers Commuting

For the purposes of evaluating the Project's construction-related air quality impacts, construction of the Project is anticipated to commence in July 2019 and last through December 2020. Construction duration by phase is shown on Table 4.2-4, *Construction Duration*. The construction schedule utilized in this analysis represents a "worst-case" analysis scenario because emission factors for construction decrease as the analysis year increases due to the replacement of older, less efficient construction vehicles with more modern vehicles. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per the CEQA Guidelines. The site-specific construction fleet may vary due to specific Project needs at the time of construction. The duration of construction activity was estimated based on consultation with the Project Applicant and an assumed 2020 Project opening year. Associated equipment was estimated based on consultation with the Project Applicant. Detailed modeling inputs/outputs are contained in



compared to that which would be allowed to occur under the existing General Plan which designates the entirety of the Project site for Regional Commercial land uses. Given that the majority of the Project's operational emissions would be generated by mobile sources, the Project would emit less airborne pollutants than if the Project site was developed with the maximum building intensity allowable under the existing General Plan land use designation (Regional Commercial). Since the Project site's existing General Plan land use designation (Regional Commercial) was relied upon to form the regional air emission assumptions in the 2016 SCAQMD AQMP, the air quality impacts of the Project would be lower compared to those assumed under the 2016 SCAQMD AQMP. As such, based on Consistency Criterion No. 2, the proposed Project would not exceed the assumptions in the 2016 AQMP and would be consistent with the 2016 AQMP. (Urban Crossroads, 2018a, p. 56)

On the basis of the preceding discussion, the Project does not meet the first criterion but does meet the second criterion for determining consistency with the 2016 SCAQMD AQMP. Accordingly, the Project is considered to be inconsistent with the 2016 AQMP and would result in a significant impact due to this inconsistency.

***Threshold b:*** *Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

**A. Construction Emissions Impact Analysis**

For purposes of analysis, it is assumed that construction of the Project would commence in July 2019 and last through December 2020 and would consist of two (2) construction phases. If construction activities occur at a later date than assumed in this EIR, emissions quantities associated with construction equipment exhaust would be less than disclosed in this Subsection due to the application of more restrictive regulatory requirements for construction equipment and on-going replacement of older construction fleet equipment with newer, less-polluting equipment by construction contractors. (Urban Crossroads, 2018a, pp. 39-40)

SCAQMD Rules that are applicable during construction activity for the proposed Project include but are not limited to: Rule 1113 (Architectural Coatings); Rule 431.2 (Low Sulfur Fuel); Rule 403 (Fugitive Dust); Rule 403(e) (Additional Requirements for Large Operations); and Rule 1186 / 1186.1 (Street Sweepers) (Urban Crossroads, 2018a, p. 42).

The estimated maximum daily construction-related air emissions for the Project are summarized in Table 4.2-6, *Maximum Daily Peak Construction Emissions* Summary. As shown, emissions resulting from Project construction would not exceed the regional thresholds established by the SCAQMD for emissions for any criteria pollutant (Urban Crossroads, 2018a, p. 42). Therefore, a less-than-significant impact would occur and no mitigation is required.





mitigation measures would ensure Rule 403, Rule 403(e), and Rule 1186 compliance and minimize the Project's construction-related particulate matter emissions.

MM 4.2-2 Project construction activities shall comply with the provisions of South Coast Air Quality Management District Rule 403, "Fugitive Dust," and Rule 403(e) "Additional Requirements for Large Operations." Rule 403 requires implementation of best available dust control measures during construction activities that generate fugitive dust, such as earth moving, grading, and equipment travel on unpaved roads. Prior to grading permit issuance, the City of Irwindale shall verify that the following notes are specified on the grading plan. Project construction contractors shall be required to ensure compliance with the notes and permit periodic inspection of the construction site by City of Irwindale staff or its designee to confirm compliance. These notes shall also be specified in bid documents issued to prospective construction contractors.

- a. During grading and ground-disturbing construction activities, the construction contractor shall ensure that all unpaved roads, active soil stockpiles, and areas undergoing active ground disturbance within the Project site are watered at least three (3) times daily during dry weather. Watering, with complete coverage of disturbed areas by water truck, sprinkler system, or other comparable means, shall occur in the mid-morning, afternoon, and after work is done for the day. The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite.
- b. Temporary signs shall be installed on the construction site along all unpaved roads indicating a maximum speed limit of 15 miles per hour (MPH). The signs shall be installed before construction activities commence and remain in place for the duration of construction activities that include vehicle activities on unpaved roads.
- c. Gravel pads must be installed at all access points to prevent tracking of mud onto public roads.
- d. Install and maintain trackout control devices in effective condition at all access points where paved and unpaved access or travel routes intersect (e.g., Install wheel shakers, wheel washers, and limit site access.)
- e. When materials are transported off-site, all material shall be covered or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- f. All street frontages adjacent to the construction site shall be swept at least once a day using SCAQMD Rule 1186 certified street sweepers utilizing reclaimed water trucks if visible soil materials are carried to adjacent streets.
- g. Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and initiate corrective action within 24 hours.



idling restriction and thereby limit the release of diesel particulate matter, oxides of nitrogen, and other criteria pollutants into the atmosphere from the burning of fuel, prior to grading permit and building permit issuance, the City of Irwindale shall verify that the following note is included on the grading and building plans. Project construction contractors shall be required to ensure compliance with the note and permit periodic inspection of the construction site by City of Irwindale staff or its designee to confirm compliance. This note also shall be specified in bid documents issued to prospective construction contractors.

- a. Temporary signs shall be placed on the construction site at all construction vehicle entry points and at all loading, unloading, and equipment staging areas indicating that heavy duty trucks and diesel-powered construction equipment are prohibited from idling for more than three (3) minutes. The signs shall be installed before construction activities commence and remain in place during the duration of construction activities at all loading, unloading, and equipment staging areas.

Although the Project's construction emissions of SO<sub>x</sub> would be less than significant with mandatory compliance with SCAQMD Rule 431.2, the following mitigation measure would ensure compliance with Rule 431.2 and minimize the Project's construction-related SO<sub>x</sub> emissions.

MM 4.2-5 The Project shall comply with the provisions of SCAQMD Rule 431.2, "Sulfur Content of Liquid Fuels" by complying with the following requirement. To ensure and enforce compliance with this requirement and thereby limit the release of SO<sub>x</sub> into the atmosphere from the burning of fuel, prior to grading and building permit issuance, the City of Irwindale shall verify that the following note is included on the grading and building plans. Project contractors shall be required to ensure compliance with this note and permit periodic inspection of the construction site by City of Irwindale staff or its designee to confirm compliance. This note also shall be specified in bid documents issued to prospective construction contractors.

- a. All liquid fuels shall have a sulfur content of not more than 0.05 percent by weight, except as provided for by South Coast Air Quality Management District Rule 431.2.

The following mitigation measures would ensure compliance with the California Building Standards Code and CARB and SCAQMD requirements related to vehicle use and idling and add additional requirements on the Project to reduce operational-related emissions of NO<sub>x</sub> and VOCs and the contributions of these pollutants to the SCAB's non-attainment status for ozone.

MM 4.2-6 As a condition of building permit issuance, the City of Irwindale shall require installation of passenger car EV charging stations and designated carpool parking stalls per the provisions of the California Green Building Standards Code and require that each building be constructed with an adequately sized electrical panel(s) and conduit





to accommodate future EV charging stations at a minimum of 5% of the passenger car parking spaces.

- MM 4.2-7 Legible, durable, weather-proof signs shall be placed 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 (3) minutes once the vehicle is stopped, the transmission is set to "neutral" or "park," and the parking brake is engaged; and 3) telephone numbers of the building facilities manager and the CARB to report violations. Prior to the issuance of a certificate of occupancy, the City of Irwindale shall conduct a site inspection to ensure that the signs are in place.
- MM 4.2-8 As a condition of certificates of occupancy, owner users and tenants of buildings with loading docks shall be required to ensure that all heavy-heavy duty (HHD) vehicles accessing the building comply with 13 California Code of Regulations Section 2025, as may be amended (the "Regulations"), and that all HHD vehicles accessing the Project site comply with the required registration and reporting provisions of the Regulations. Developer and all successors also shall include these obligations in all leases of buildings with loading docks. The building owner and occupant shall allow periodic inspection of the site by the City of Irwindale or its designee to confirm compliance. Building users/operators with truck check-in gates shall maintain truck access records which shall be made available for inspection by the City of Irwindale. This requirement shall expire on January 1, 2023.
- MM 4.2-9 As a condition of certificates of occupancy, all on-site outdoor cargo handling equipment (including yard trucks, hostlers, yard goats, pallet jacks, forklifts, and other on-site equipment) shall be required to be powered by electricity, compressed natural gas, propane, or diesel-fueled engines that comply with the CARB/USEPA Tier IV Engine standards for off-road vehicles or better (defined as emitting less than or equal to 0.015 grams per brake horsepower-hour [g/bhp-hr] for PM<sub>10</sub>) and all indoor cargo handling equipment shall be required to be powered by electricity, compressed natural gas, or propane. Use of indoor diesel-fueled equipment shall be prohibited. Developer and all successors also shall include these obligations in all building leases. The building owner and occupant shall allow periodic inspection of the site by the City of Irwindale or its designee to confirm compliance. Electrical panels should be appropriately sized to allow for future expanded use.
- MM 4.2-10 Prior to the issuance of a building permit for any building having over 200,000 square feet of floor space, the City of Irwindale shall verify that the building's roof is designed to accommodate a photovoltaic (PV) solar array taking into consideration limitations imposed by other rooftop equipment, roof warranties, building and fire code requirements, and other physical or legal limitations. The building shall be constructed



equipment (CHE) (including yard trucks, hostlers, yard goats, pallet jacks, forklifts, and other on-site equipment) would be powered by diesel-fueled engines that comply with the CARB/USEPA Tier IV Engine standards for off-road vehicles or better (defined as emitting less than or equal to 0.015 grams per brake horsepower-hour [g/bhp-hr] for PM<sub>10</sub>) and all on-site indoor forklifts would be powered by electricity, compressed natural gas, or propane (Urban Crossroads, 2018b, p. 6). Natural gas would be supplied to the Project by SoCalGas and electricity would be supplied to the Project by SCE. Annual natural gas and electricity demands of the Project are summarized in Table 4.3-2, *Project Annual Operational Energy Demand Summary*. As shown on Table 4.3-2, Project facility operational energy demands are estimated at 11,223,098 kilo-British thermal units (kBtu)/year of natural gas and 14,079,827 Kilowatt-hour (kWh)/year of electricity. (Urban Crossroads, 2018c, p. 27) In addition, the Project Applicant has estimated that the approximate energy demand to power a combination of 2% of the truck parking spaces and 5% of the auto spaces with electrical vehicle (EV) charging under maximum buildout of the Specific Plan is 3,054.125 amps.

The proposed The Park @ Live Oak Specific Plan species a range of permitted uses that include but are not limited to conventional warehouse, commercial, and industrial uses. All construction would be required to comply with the City of Irwindale Green Building Standards Code, which would result in buildings having contemporary energy efficient/energy conserving designs and operational programs. Uses permitted by The Park @ Live Oak Specific Plan are not inherently energy-intensive, and the Project energy demands in total would be comparable to, or less than, other projects of similar use and scale. Based on the preceding, Project facilities energy demands and energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

**Table 4.3-2 Project Annual Operational Energy Demand Summary**

| Natural Gas Demand                      | kBtu/year  | Electricity Demand                      | kWh/year   |
|-----------------------------------------|------------|-----------------------------------------|------------|
| Other Asphalt Surfaces                  | 0          | Other Asphalt Surfaces                  | 0          |
| General Light Industry                  | 988,260    | General Light Industry                  | 606,060    |
| Manufacturing                           | 1,850,000  | Manufacturing                           | 1,130,000  |
| Refrigerated Warehouse-No Rail          | 399,125    | Refrigerated Warehouse-No Rail          | 6,490,000  |
| Unrefrigerated Warehouse-No Rail        | 789,351    | Unrefrigerated Warehouse-No Rail        | 3,540,000  |
| Convenience Market with Gas Pumps       | 1,852      | Convenience Market with Gas Pumps       | 15,247     |
| Fast Food Restaurant without Drive Thru | 692,280    | Fast Food Restaurant without Drive Thru | 132,420    |
| Fast Food Restaurant with Drive Thru    | 6,390,000  | Fast Food Restaurant with Drive Thru    | 1,220,000  |
| Regional Shopping Center                | 113,980    | Regional Shopping Center                | 938,250    |
| Total Project Natural Gas Demand        | 11,223,098 | Total Project Natural Gas Demand        | 14,079,827 |

Source: (Urban Crossroads, 2018c, Table 4-12)

### **C. Energy Consumption Summary**

Project design features, mandatory compliance with CalGreen and the City of Irwindale Green Building Standards Code, and the implementation of the mitigation measures contained in EIR Subsection 4.2, *Air Quality*, and Subsection 4.5, *Greenhouse Gas Emissions*, demonstrate evidence of the Project's efficient use of energy. Energy consumed by the Project is calculated by Urban Crossroads to be comparable to, or less than, energy consumed by other industrial and commercial business park projects of similar scale and intensity that are currently constructed and operating in



Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. Accordingly, buildout of the Project would not impede or redirect flood flows. No impact would occur.

***Threshold d: In flood hazard, tsunami, or seiche zones, would the Project risk release of pollutants due to Project inundation?***

The Project site is not located within a 100-year floodplain, as mapped on Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map (FEMA, 2008). As such, the proposed Project has no potential to place structures within a 100-year floodplain, as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. A seiche is the formation of large waves in landlocked bodies of water due to seismic activity. The Project site is not located within or adjacent to a body of water; therefore, it would not be subject to potential seiche conditions. The Project site is approximately 26.9 miles northeast of the coastal areas and shoreline of the Pacific Ocean and due to this distance would not be exposed to the threat of tsunami. As shown on Exhibit 6-3 of the City of Irwindale General Plan, the Project site is located outside of the area subject to inundation hazards associated with the Santa Fe Dam (City of Irwindale, 2008, Exhibit 6-3). There are no other levees or dams within the vicinity of the Project site that could expose the Project to flooding as a result of inundation. Based on the foregoing, the Project has no potential to release pollutants due to Project inundation, and no impact would occur.

***Threshold e: Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?***

The Project site is located within the Los Angeles River Watershed, which is regulated by the Los Angeles Regional Water Quality Control Board (RWQCB). The RWQCB has developed a “Water Quality Control Plan” for the Los Angeles River Basin (herein, “Basin Plan”), which was most recently updated in September 2014. The Basin Plan establishes water quality standards for the ground and surface waters of the region. The Basin Plan describes the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards. The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region’s groundwater and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. The RWQCB ensures compliance with the Basin Plan through its issuance of National Pollutant Discharge Elimination System (NPDES) Permits, issuance of Waste Discharge Requirements (WDR), and Water Quality Certifications pursuant to Section 401 of the Clean Water Act (CWA). In conformance with these requirements, the Project Applicant has prepared a Low Impact Development (LID) and hydrology study, which are included as *Technical Appendices G2* and *G1*, respectively, which demonstrate that the Project’s proposed drainage plan would meet all applicable requirements of the Basin Plan, including requirements and conditions of approval associated with NPDES permits, issuance of WDRs, and Water Quality Certifications. As such, the Project would not conflict with the Basin Plan, and no impacts would ~~be less than significant~~ occur.



The 2014 Sustainable Groundwater Management Act (SGMA) requires local public agencies and Groundwater Sustainability Agencies (GSAs) in “high”- and “medium”-priority basins to develop and implement Groundwater Sustainability Plans (GSPs) or Alternatives to GSPs (DWR, 2019). GSPs are detailed road maps for how groundwater basins will reach long term sustainability. The California Department of Water Resources (DWR) currently categorizes the San Gabriel Valley Groundwater Basin (includes the MSGB) as a “low-priority” basin; therefore, the MSGB is not subject to the requirements of the SGMA (DWR, 2018). Furthermore, §10720.8(a) of the SGMA exempts adjudicated basins (including the MSGB specifically) from the SGMA’s requirement to prepare a GSP (DWR, 2016b). Accordingly, the Project has no potential to conflict with or obstruct implementation of a sustainable groundwater management plan.

Furthermore, with implementation of the Project’s LID and SWPPPs during construction activities, the Project would not contribute substantial amounts of polluted runoff that could adversely affect the underlying groundwater basin. Additionally, as previously discussed in the response to Threshold b, the Project would not interfere substantially with groundwater recharge. As such, the Project would not conflict with any water quality control plans or sustainable groundwater management plans, and no impacts would be less than significant occur.

#### 4.7.4 CUMULATIVE IMPACT ANALYSIS

The cumulative impact analysis considers construction and operation of the proposed Project in conjunction with other development projects in the vicinity of the Project site, as previously shown in EIR Table 4.0-1, *List of Cumulative Development Projects*. The following analysis of potential cumulative impacts to hydrology and water quality is divided into general topics as defined by the Thresholds of Significance.

##### A. Storm Water Management and Flooding

None of the other planned and pending development projects identified in EIR Table 4.0-1, *List of Cumulative Development Projects*, would drain onto the Project site and no other planned or reasonably foreseeable project would contribute runoff to the Project’s storm water drainage system. The proposed Project’s runoff would be accommodated by the Project’s storm water drainage system which would discharge storm water from the site to the existing storm drain system in Live Oak Avenue. The existing storm drain system in Live Oak Avenue conveys storm water runoff to the west where it ultimately discharges to the Saw Pit Channel which is tributary to the Los Angeles River. The existing storm drain system in Live Oak Avenue has been designed to convey storm water flows from other developments within the Project area, including the Project site. As previously discussed in Threshold e, the Project site would discharge storm water flows into the existing storm drain system in Live Oak Avenue at a rate that would be within the allowable capacity of the storm drain. Based on the foregoing, there would be no direct or cumulative effects on surface or groundwater hydrology or water quality due to interaction of runoff from the Project site and the other planned and pending cumulative development projects identified in EIR Table 4.0-1, *List of Cumulative Development Projects*.



significance of traffic impacts as standard practice in CEQA documents for decades. In 2013, SB 743 was passed, which is intended to balance the need for a LOS evaluation for traffic planning with the need to build infill housing and mixed-use commercial developments within walking distance of mass transit facilities, downtowns, and town centers and to provide greater flexibility to local governments to balance these sometimes-competing needs. As a component of OPR's revisions to the CEQA Guidelines in December 2018, lead agencies will be required to adopt VMT thresholds of significance by July 2020. At the time this EIR was prepared, a VMT metric was not published by OPR, and the City of Irwindale in its capacity as Lead Agency, as well as surrounding local agencies in which the Project's traffic would circulate, use LOS as the significance criteria for evaluating a Project's traffic impacts. For this reason, as detailed in the response to Threshold a, a LOS metric and not a VMT metric is appropriately used in this EIR to ~~evaluate~~evaluate the Project's transportation-related impacts. As such, there is no potential for the Project to conflict with CEQA Guidelines Section 15064.3, subdivision (b), since a LOS metric and not a VMT metric is used in this EIR to evaluate the Project's transportation impacts. No impact would occur.

***Threshold c: Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?***

As part of the proposed Project, there will be site access and driveway improvements, as described below. These proposed improvements have been incorporated as mitigation measures in Subsection 4.11.8 below to ensure that they will be completed in a timely manner.

#### **A. Site Frontage and Site Access Improvements**

Exhibit 1-5 of the TIA (EIR *Technical Appendix I1*) illustrates the on-site and site-adjacent roadway lane improvements to be constructed as part of the Project. Construction of these on-site and site-adjacent improvements are anticipated to occur in conjunction with development of the Project site. The site-adjacent roadways of Arrow Highway and Live Oak Avenue appear to be built to their ultimate curb-to-curb width as indicated in the City of Irwindale General Plan Circulation Element as a Major Highway (100-foot right-of-way). However, the Project would restripe these roadways to provide the ultimate number of lanes adjacent to the Project site. Exhibit 1-6 of the TIA (EIR *Technical Appendix I1*) shows a conceptual striping plan for Live Oak Avenue between Driveway 7 and Private Drive A. The recommendations include removing the existing raised median to accommodate a striped two-way-left-turn lane between these two intersections. As shown on Exhibit 1-5 of the TIA, the Project would also install a traffic signal at Intersection #16 – Private Drive A & Live Oak Avenue.

The recommended site access driveway improvements for the Project are depicted in Exhibit 1-5 of the Project's TIA (EIR *Technical Appendix I1*). These recommended improvements would ensure safe site access and will adhere to the City of Irwindale's design standards. Construction of on-site and site-adjacent improvements are required to occur in conjunction with adjacent Project development activity or as needed for Project access purposes.





- c. As a condition of any building permit that would involve ingress/egress access at the intersection of Live Oak Avenue and Private Drive A, the Project Applicant shall install the following improvement at Private Drive A and Live Oak Avenue (Intersection #16). The improvement shall be constructed and operable prior to the issuance of a certificate of occupancy.
- Install a traffic signal (E+P requirement)
- d. As a condition of any grading or building permit that would involve ingress/egress access at the existing intersection of Speedway Driveway & Live Oak Avenue, the Project Applicant shall install the following roadway improvement at Speedway Driveway & Live Oak Avenue (Intersection #7). The improvement shall be constructed and operable prior to the issuance of a certificate of occupancy.
- Install a traffic signal (E+P requirement)
  - Add a 3rd westbound through lane. (E+P requirement)
- e. As a condition of any building permit that would involve ingress/egress at the existing intersection of Live Oak Avenue and the entrance driveway to the Irwindale Events Center Intersection #13 (Project Driveway 7), the Project Applicant shall install the following improvement at Project Driveway 7/Driveway & Live Oak Avenue (Intersection #13). The improvement shall be constructed and operable prior to the issuance of a certificate of occupancy.
- Add a 3<sup>rd</sup> eastbound through lane and modify the traffic signal to accommodate the additional 3<sup>rd</sup> eastbound lane. (E+P requirement)

Mitigation to Address Cumulatively Considerable Impacts to the Local Roadway Network Under E+P Conditions and Opening Year Cumulative (2020) Conditions

MM 4.11-6 Prior to the issuance of each building permit for future implementing development projects proposed within The Park @ Live Oak Specific Plan, the Project Applicant shall submit a preliminary trip generation calculation and trip distribution exhibit to the City of Irwindale Public Works Department for the development project under consideration for City review and approval. The preliminary calculation and exhibit shall be prepared by a licensed traffic engineer and be accompanied by sufficient analytical data to enable the City to (1) Determine which of the mitigation measures identified below to address cumulatively considerable impacts in the E+P, Opening Year 2020, and Horizon Year 2040 scenarios are applicable to the implementing project and calculate the fair share percentage associated with each applicable respective mitigation measure, and (2) Enable the City to determine sufficient intersection and driveway geometrics and lane storage and turn lane capacity needs. The City Engineer shall have the authority to determine the extent of the traffic study and analyses required to determine the appropriate mitigation measures and fair share



calculations. Traffic analyses shall utilize traffic counts collected within 12 months of the analysis.

Proposed development projects and speculative buildings without an occupant or tenant shall be analyzed in accordance with the proposed uses, trip generations rates and planning areas listed in EIR Table 4.11-15. For the purposes of the traffic analysis, uses assigned to speculative developments within The Park @ Live Oak Specific Plan site shall be consistent with the distribution and proportion of uses and trip generation rates studied in The Park @ Live Oak Specific Plan's Traffic Impact Analysis prepared by Urban Crossroads, Inc. and dated December 12, 2018 and listed in EIR Table 4.11-15.

If the total trips generated by all developments within The Park @ Live Oak Specific Plan area exceeds the trips analyzed in The Park @ Live Oak Specific Plan's Traffic Impact Analysis prepared by Urban Crossroads, Inc. and dated December 12, 2018 (1,280 PCE AM peak hour trips and 1,644 PCE PM peak hour trips), an additional full Traffic Impact Analysis shall be required.

Based on the studied driveway locations (depicted on Exhibit 1-1 of The Park @ Live Oak Specific Plan's Traffic Impact Analysis prepared by Urban Crossroads, Inc. and dated December 12, 2018), mix of land uses, and projected traffic volumes studied in the Park @ Live Oak Specific Plan's Traffic Impact Analysis and listed in EIR Table 4.11-15, the following are anticipated to be to applicable to some or all implementing development projects:

- a. Prior to issuance of building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #1 – Myrtle Avenue & Longden Avenue:
  - Restripe a 2<sup>nd</sup> eastbound through lane and widen the bridge over the Sawpit Wash.
- b. Prior to issuance of building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #2 – Myrtle Avenue/Peck Road & Live Oak Avenue:
  - Add a 2<sup>nd</sup> southbound left turn lane and modify the existing traffic signal to accommodate the 2<sup>nd</sup> southbound left turn lane.
- c. Prior to issuance of **grading and** building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #4 – Live Oak Avenue & Arrow Highway (West):



- Add a 3rd westbound through lane.
  - Restripe a 3rd eastbound through lane.
  - Modify the existing traffic signal to accommodate the above-listed lane configuration improvements.
- d. Prior to issuance of grading and building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #15 – Avenida Barbosa/Private Drive A & Arrow Highway:
- Add a 3<sup>rd</sup> westbound through lane.
  - Add a 2<sup>nd</sup> eastbound left turn lane.
  - Modify the traffic signal to implement overlap phasing on the westbound right turn lane and accommodate the changes to lane configuration.
- e. Prior to issuance of grading and building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #7 – Speedway Driveway & Live Oak Avenue:
- Install a traffic signal.
- f. Prior to issuance of building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #13 – Driveway 7/Driveway & Live Oak Avenue:
- Add an eastbound right turn lane and modify the existing traffic signal to accommodate the new eastbound right turn lane.
- g. Prior to issuance of grading and building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #23 – I-605 Northbound Off-Ramp & Live Oak Avenue:
- Install a traffic signal.
- h. Prior to the issuance of building permits, the Project Applicant shall make a fair share monetary contribution to the City of Irwindale for the following improvements to Intersection #26 – Rivergrade Road & Live Oak Avenue:
- Modify the traffic signal to implement overlap phasing on the northbound right turn lane.





because total demand from the various producers, including CAW, exceeds the available OSY established by the Watermaster. The Watermaster uses the funds generated from the replacement fees to purchase replacement water from Responsible Agencies that have access to supplemental water. The authorized Responsible Agency for CAW is the Upper District, which purchases untreated water from MWD as Replacement Water that is delivered to spreading grounds to replenish the aquifer. The projected water supply for Upper District is shown in Table 4.13-6, *Upper District Projected Average Year Water Supply (AFY)*. (WSC, 2018a, p. 25)

**Table 4.13-6 Upper District Projected Average Year Water Supply (AFY)**

| Upper District Sources                                                                                       | 2015          | 2020          | 2025          | 2030          | 2035          |
|--------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|
| Surface Water-Treated <sup>1</sup>                                                                           | 9,069         | 11,436        | 10,351        | 9,441         | 9,288         |
| Surface Water-Untreated <sup>2</sup>                                                                         | 39,841        | 42,000        | 42,000        | 42,000        | 42,000        |
| Recycled Water                                                                                               | 0             | 18,984        | 19,896        | 20,332        | 20,731        |
| <b>Supply Totals</b>                                                                                         | <b>51,499</b> | <b>72,420</b> | <b>72,247</b> | <b>71,773</b> | <b>72,019</b> |
| <b>Demand Totals</b>                                                                                         | <b>51,499</b> | <b>56,821</b> | <b>56,086</b> | <b>55,261</b> | <b>55,228</b> |
| <b>Difference</b>                                                                                            | <b>0</b>      | <b>15,599</b> | <b>16,161</b> | <b>16,512</b> | <b>16,791</b> |
| Source: Table Adapted from Upper District Final 2015 UWMP, Table 6-8, 6-9 and 7-2 (14)                       |               |               |               |               |               |
| <sup>1</sup> Upper District Receives treated imported water from MWD                                         |               |               |               |               |               |
| <sup>2</sup> Upper District receives untreated imported surface water from MWD for groundwater replenishment |               |               |               |               |               |

Source: (WSC, 2018a, Table 6-5)

### **C. Wastewater Service and Treatment**

Under existing conditions, the Project site operates as an IDEFO, and is not developed with uses or structures that generate wastewater that discharges to the domestic sanitary sewer system. The nominal amounts of wastewater produced by the IDEFO operations are collected using portable systems and transported off-site. The Project site is located within the jurisdictional boundaries of District No. 22 of the Los Angeles County Sanitation Districts (LACSD). The LACSD is a partnership of 24 independent special districts that serve the wastewater and solid waste management needs of approximately 5.5 million people in Los Angeles County. The LACSD's service area covers approximately 824 square miles and encompasses 78 cities and unincorporated territory within the County. The LACSD operates ten (10) water reclamation plants (WRPs) and one ocean discharge facility (Joint Water Pollution Control Plant), which treat approximately 510 million gallons per day (mgd), 165 mgd of which are available for reuse. The capacities at these facilities range from 0.2 mgd (La Cañada WRP) to 400 mgd (Joint Water Pollution Control Plant); the San Jose Creek WRP is the largest of the water reclamation plants with a capacity of 100 mgd and an average flow of ~~64.158.5~~ 263.4 261.1 mgd. Wastewater generated at the Project site would be conveyed to the San Jose Creek WRP, with biosolids and wastewater flows that exceed the capacity of the San Jose Creek WRP diverted to and treated at the Joint Water Pollution Control Plan in the City of Carson. The Joint Water Pollution Control Plan in the City of Carson has a design capacity of 400 mgd and currently produces an average flow of ~~263.4 261.1~~ mgd. (LACSD, 2019, pp. 3-4; Raza, 2018) (FEIR Comment D-2)



1,500 gallons per minute (gpm). As concluded in the WSA (EIR *Technical Appendix G1*) and discussed in further detail below within the response to Threshold d, with installation of the proposed on-site groundwater supply well, CAW's total projected water supplies available during average, single dry, and multiple dry water years during a 20-year projection would meet the projected water demand for the Project. Accordingly, the Project would not require any additional water or water treatment facilities beyond those which are inherent to the proposed Project and described and analyzed throughout this EIR. Impacts unique to the installation of water infrastructure would be less than significant.

#### **B. Wastewater Treatment Facilities**

As was previously shown in Figure 3-4, *Conceptual Sanitary Sewer Plan*, wastewater generated by the Project would be conveyed to existing City of Irwindale sewer lines located in Live Oak Avenue and Arrow Highway adjacent to the Project site via proposed lateral sewer connections. As discussed in the Project's Sewer Area Study (EIR *Technical Appendix J3*), the Project's wastewater would be conveyed by these existing sewer lines in a westerly direction to the LACSD Joint Outfall B Unit 8G Trunk Sewer located at the intersection of Live Oak Avenue and Myrtle Avenue. The Project's Sewer Area Study (EIR *Technical Appendix J3*) included a sewer pipe capacity analysis which concluded the existing sewer pipes and the LACSD Joint Outfall B Unit 8G Trunk Sewer have adequate available capacity to accommodate wastewater generated by the Project. (D&D Engineering, 2018b, p. 4)

Installation of sewer lateral connections for the Project that would occur within a public street right of way must adhere to the construction control practices that reduce impacts that are specified in the State of California Department of Transportation Construction Manual, dated July 2017, published by Caltrans (Caltrans, 2017). The composition of wastewater generated by some of the Project's uses would be similar to composition of wastewater generated within homes, small businesses, offices, retail shops, etc., while others would generate industrial wastewater that would require the approval of an Industrial Wastewater Discharge Permit from the LACSD in accordance with LACSD's Wastewater Ordinance (LACSD, 1998). The issuance of an Industrial Wastewater Discharge Permit would ensure the protection of the environment and public health, which is the purpose of the Wastewater Ordinance (LACSD, 1998). and would not require any alterations to the LACSD wastewater treatment requirements or to their treatment facilities. Impacts associated with the construction of the proposed sewer lateral connections are an inherent part of the Project's construction process and environmental effects associated with the Project's construction phase have been evaluated throughout this EIR. Mitigation measures have been identified to reduce construction-related impacts to the maximum feasible extent, and there are no environmental impacts attributable solely to the Project's sewer connections. Impacts would be less than significant.

Wastewater generated at the Project site ultimately would be conveyed to the San Jose Creek Water Reclamation Plant, which has a design capacity of 100 mgd and currently processes an average flow of ~~64.1~~ 58.5 mgd. All biosolids and wastewater flows that would exceed the capacity of the San Jose Creek WRP would be diverted to and treated at the Joint Water Pollution Control Plant in the City of Carson. According to the Project's Sewer Area Study (EIR *Technical Appendix J3*), the Project would



capacity and identify required system upgrades. Specifically, the evaluation was conducted to determine whether the Project's fire flow requirements (4,000 gpm for 4 hours) could be met by the existing water distribution system. The distribution system capacity analysis model used in the WSA assumed the distribution system pipeline would be extended west along Buena Vista Street and south along Avenida Barbosa Street to reach the Project area. Additionally, the model assumed that a pipeline loop would surround the Project site; however, as was previously shown on Figure 3-3, *Conceptual Water Plan*, some of the pipeline segments forming the proposed loop around the Project site may not be required if fire service can be provided via lines to be installed in Private Drive A. The final pipeline alignments and sizes will be validated during the final design phase of the Project's water system once the future buildings are designed and located and associated fire protection requirements are further defined. The water distribution system capacity analysis indicated that friction losses within the existing water distribution system would be too great to provide the required 4,000 gpm fire flow to the Project site. To reduce friction losses within the existing distribution system, the WSA recommended that a segment of existing 8-inch pipeline in Buena Vista Street be replaced with a 12-inch pipeline to increase the available fire flow that could be conveyed through the existing system, which is proposed as part of the Project and depicted on Figure 3-3, *Conceptual Water Plan*. Additionally, the distribution system capacity analysis was used to determine the required size of the proposed pipelines connecting to and surrounding the Project site that are shown in Figure 3-3, *Conceptual Water Plan*. The results of the water distribution system capacity analysis concluded that with implementation of the Project's proposed improvements, the Project's fire flow requirements (4,000 gpm) would be met. (WSC, 2018a, pp. 40-41)

#### **D. Conclusion**

Based on the information provided above from the Project's WSA (EIR *Technical Appendix G1*), and in light of the Project's proposed improvements (including a new on-site groundwater supply well), the CAW would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. Thus, the proposed Project would have a less-than-significant impact on water supplies and no mitigation is warranted.

**Threshold c:** *Would the Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?*

As discussed above, the LACSD ten (10) water reclamation plants (WRPs) and one ocean discharge facility (Joint Water Pollution Control Plant) treat approximately 510 mgd, of which 165 mgd are available for reuse. The Project's wastewater flows would be conveyed to the San Jose Creek WRP, with biosolids and wastewater flows that exceed the capacity of the San Jose Creek WRP diverted to and treated at the Joint Water Pollution Control Plant in the City of Carson. The San Jose Creek WRP has a design capacity of 100 mgd and currently processes an average flow of ~~64.1~~58.5 mgd. (Raza, 2018, p. 1) [\(FEIR Comment D-2\)](#)

Wastewater generated by the proposed Project would be conveyed via local sewer lines into the LACSD's regional sewer system for conveyance to wastewater treatment facilities maintained by the



daily disposal volume; thus, waste generated by the Project's operation is not anticipated to cause the landfill to exceed its maximum permitted daily disposal volume (CalRecycle, 2018f). Because the Project would generate a relatively small amount of solid waste per day as compared to the permitted daily capacities at receiving landfills, impacts to regional landfill facilities during the Project's long-term operational activities would be less than significant.

Throughout operational activities, the Project would be required to comply with all applicable State and local solid waste regulations, goals, and policies which were previously summarized in EIR Subsection 4.13.2. Applicable solid waste regulations include the California Solid Waste Integrated Waste Management Act (AB 939) and the related Los Angeles County Integrated Waste Management Plan (CIWMP); the California Solid Waste Reuse and Recycling Act of 1991 (Cal Pub Res. Code § 42911); the California Mandatory Commercial Recycling Program (AB 341); and the solid waste provisions of CALGreen. The Project's required compliance with these solid waste regulations is evaluated in further detail in the response to Threshold e below. Accordingly, the Project would not generate solid waste in excess of State or local standards, and a less-than-significant impact would occur.

***Threshold e: Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?***

The California Integrated Waste Management Act (Assembly Bill [AB] 939), signed into law in 1989, established an integrated waste management system that focused on source reduction, recycling, composting, and land disposal of waste. In addition, the bill established a 50% waste reduction requirement for cities and counties by the year 2000, along with a process to ensure environmentally safe disposal of waste that could not be diverted. Per the requirements of the Integrated Waste Management Act, areas within Los Angeles County are subject to the County's Integrated Waste Management Plan (CIWMP), which outlines the goals, policies, and programs the County and its cities implement to create an integrated and cost-effective waste management system that complies with the provisions of AB 939 and its diversion mandates

In order to assist the City of ~~Arcadia-Irwindale~~ and the County of Los Angeles in achieving the mandated goals of the Integrated Waste Management Act, separate bins would be provided on-site to allow tenants to separate recyclable materials from refuse. Additionally, in accordance with the California Solid Waste Reuse and Recycling Act of 1991 (Cal Pub Res. Code § 42911), the Project is required to provide adequate areas for collecting and loading recyclable materials where solid waste is collected. The collection areas are required to be shown on construction drawings and be in place before occupancy permits are issued. The implementation of these mandatory requirements would reduce the amount of solid waste generated by the Project and diverted to landfills, which in turn will aid in the extension of the life of affected disposal sites. The Project would be required to comply with all applicable solid waste statutes and regulations; as such, there would be no impacts related to solid waste statutes and regulations ~~would be less than significant~~.



for building energy consumption) would be similar. Given the alternative's decrease in mobile emissions, the Project's GHG impacts would be decreased under this alternative but would remain significant and unavoidable.

#### **D. Noise**

Noise associated with the High-Cube Warehouse Alternative would occur during short-term construction activities and under long-term operation. The types of construction activities conducted on the site would be identical to the proposed Project, and the peak daily noise levels generated during the construction phase would also be identical. As such, both this alternative and the proposed Project would result in less-than-significant short-term noise levels during construction.

Under long-term operational conditions, noise generated by the High-Cube Warehouse Alternative primarily would be associated with vehicles traveling to and from the site and on-site vehicle idling, maneuvering and parking. This alternative would generate approximately 3,335 fewer average daily trips than the Project and, therefore, would contribute less traffic-related noise to local roadways than the Project. The High-Cube Warehouse Alternative would result in less-than-significant off-site, traffic-related noise impacts during long-term operation, which is the same conclusion reached for the Project. As such, noise impacts due to on-site activities would be less than significant and reduced compared to the proposed Project.

#### **E. Transportation**

This alternative would generate approximately 11,272 average actual vehicle trips on a daily basis. In comparison, the proposed Project would generate approximately 14,607 average actual vehicle trips on a daily basis. The level of reduction represents a drop of approximately 22.8% in daily traffic trips that would occur with selection of this alternative which would reduce the severity of impacts to study area intersections, roadway segments, CMP facilities, and freeway facilities.

#### **F. Conclusion**

Selection of the High-Cube Warehouse Alternative would reduce, but not avoid the Project's significant unavoidable impacts to air quality, greenhouse gas emissions, and traffic. The High-Cube Warehouse Alternative would result in greater impacts related to carcinogenic and non-carcinogenic risks related to DPM exposure as compared to the proposed Project. The High-Cube Warehouse Alternative would also further reduce the Project's less-than-significant energy consumption and noise impacts. As compared to the proposed Project, the High-Cube Warehouse Alternative would result in similar less-than-significant impacts to aesthetics, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, public services, tribal cultural resources, and utilities and service systems

The High-Cube Warehouse Alternative would meet some but not all of the Project's objectives due to the removal of the commercial uses. This alternative would meet Project Objective A by maximizing the development potential of a former sand and gravel quarry as soon as feasibly possible so that the



- Appendix A: Initial Study for The Park @ Live Oak EIR, Notice of Preparation (NOP), and Written Comments on the NOP.
- Appendix B1: Urban Crossroads, Inc. 2018a. *The Park @ Live Oak Air Quality Impact Analysis*. July 5, 2018.
- Appendix B2: Urban Crossroads, Inc. 2018b. *The Park @ Live Oak Mobile Health Risk Assessment*. July 5, 2018.
- Appendix B3: Urban Crossroads, Inc. 2019. *The Park @ Live Oak Supplemental Air Quality Assessment*. February 20, 2019.
- Appendix C: Urban Crossroads, Inc. 2018c. *The Park @ Live Oak Energy Analysis*. July 5, 2018.
- Appendix D: HD Geosolutions, Inc. 2018. *Geotechnical Report for Environmental Impact Report, The Park at Live Oak [APN8532-001-002 & -004], 1220 - 1270 Arrow Highway, Irwindale, California*. May 3, 2018.
- Appendix E: Urban Crossroads, Inc. 2018d. *The Park @ Live Oak Greenhouse Gas Analysis*. July 5, 2018.
- Appendix F: Anacapa Geoservices Inc. 2018. *Phase I Environmental Site Assessment*. January 15, 2018.
- Appendix G1: D&D Engineering, Inc. 2019. *The Park @ Live Oak Preliminary Hydrology Report*. January 29, 2019.
- Appendix G2: D&D Engineering, Inc. 2018a. *The Park @ Live Oak Low Impact Development (LID)*. May 23, 2018.
- Appendix H: Urban Crossroads, Inc. 2018e. *The Park @ Live Oak Noise Impact Analysis*. June 26, 2018.
- Appendix I1: Urban Crossroads, Inc. 2018f. *The Park @ Live Oak Traffic Impact Analysis*. December 12, 2018.
- Appendix I2: Urban Crossroads, Inc. 2018g. *The Park @ Live Oak Access Evaluation*. May 14, 2018.
- Appendix I3: Urban Crossroads, Inc. 2019. *The Park @ Live Oak Supplemental Traffic Assessment*. June 13, 2019.





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## 7.5 PERSONS CONSULTED/WRITTEN OR VERBAL COMMUNICATION

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Henshaw, Ty. Irwindale Police Department (IPD). “Regarding: The Park @ Live Oak Specific Plan Request for Information Regarding Police Service Availability.” Letter sent via e-mail. Dated May 9, 2018.

Raza, Adriana. Los Angeles County Sanitation Districts (LACSD). “Revision to the NOP Response for The Park @ Live Oak Specific Plan Project.” May 24, 2018.

Patty. Representative. Los Angeles County Metropolitan Transportation Authority (Metro). “Regarding: Bus Routes in the City of Irwindale.” Telephone correspondence. June 27, 2019.

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