AGENDA
CITY OF CITRUS HEIGHTS
PLANNING COMMISSION MEETING
OCTOBER 23, 2019 - 7:00 PM
City Hall Council Chambers
6360 Fountain Square Drive, Citrus Heights, CA

1. CALL MEETING TO ORDER

   a. Packet

      Documents:

      FULL PC AGENDA PACKET.PDF

2. ROLL CALL
   Duncan, Flowers, Ingle, Lagomarsino, Schaefer, Scheeler, Van Duker

3. FLAG SALUTE

4. PUBLIC COMMENT
   Under Government Code Section 54954.3, members of the audience may address the Commission on any item within the jurisdiction of the Commission or on any agenda item. If you wish to address the Commission, please fill out a speaker identification form and hand it to the Commission Secretary. When you are called upon to speak, step forward to the podium and state your name clearly for the record. Those wishing to speak on non-agenda items will be called upon at the beginning of the meeting. Those wishing to speak for or against an agenda item will be called upon after the presentation by the City Planning department and the Applicant for that agenda item.

5. CONSTENT CALENDAR
   Approval of the meeting minutes for June 26, 2019

6. PUBLIC HEARING

   a. SENIOR AFFORDABLE APARTMENTS - 12057 FAIR OAKS BOULEVARD:
      The applicant is requesting approval to construct a 110-unit affordable senior apartment complex on three parcels containing an existing single family home and orchard. The project includes a Rezone to change the zoning from RD10 to RD20. The project also requires a Design Review Permit for the apartment development as well as concessions and a density bonus and affordable housing agreement related to the affordable housing. The project includes a Tree Permit for the removal of several protected trees. Project Planner: Kempenaar

7. REGULAR CALENDAR
   UPDATE ON ENGINEERING PLANNING PROJECTS - STUART HODGKINS

8. ADJOURNMENT
   The agenda for this meeting of the Planning Commission for the City of Citrus Heights was posted at the sites listed below on or before the close of business at 5:00 p.m. on the Friday preceding the meeting.

City of Citrus Heights, 6360 Fountain Square Drive, Citrus Heights, CA
Rusch Park Community Center, 7801 Auburn Boulevard, Citrus Heights, CA
Sacramento County Library, Sylvan Oaks Branch, 6700 Auburn Boulevard, Citrus Heights, CA

Any writings or documents provided to a majority of the City of Citrus Heights Planning Commission regarding any item on this agenda will be made available for public inspection at City Hall located at 6360 Fountain Square Drive, Citrus Heights, CA 95621.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Karen Ramsay at (916) 727-4742. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting. TTY/TDD users with questions or comments can call the California Relay Service by dialing 7-1-1.

Pursuant to Sections 65009 (b) (2), of the State Government Code "If you challenge any of the above projects in court, you may be limited to raising only those issues you or someone else raised at the public hearing(s) described in this notice, or in written correspondence delivered to the city Planning Commission at or prior to, this public hearing".

CITY OF CITRUS HEIGHTS
PLANNING COMMISSION MEETING
AGENDA
Wednesday, October 23, 2019 - 7:00 p.m.
City Hall Council Chambers
6360 Fountain Square Drive, Citrus Heights, CA

NOTE: The Commission may take up any agenda item at any time, regardless of the order listed. Action may be taken on any item on the agenda. The Commission established a procedure for addressing the Commission. Speaker Identification Sheets are provided on the table inside the Council Chambers. If you wish to address the Commission during the meeting please complete a Speaker Identification Form and give it to the Commission Secretary. Those addressing the Commission are limited to five (5) minutes, unless extended by the Chair. The Chair may also reduce the allowed time if there is a lengthy Agenda or a large number of people wanting to address the Commission.

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1. **CALL MEETING TO ORDER**

2. **ROLL CALL**

   Commission Members:
   Duncan, Flowers, Ingle, Lagomarsino, Schaefer, Scheeler, Van Duker

3. **FLAG SALUTE**

4. **PUBLIC COMMENT**

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5. **CONSENT CALENDAR**
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6. PUBLIC HEARING

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8. ADJOURNMENT

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DRAFT

City of Citrus Heights

Planning Commission Meeting Minutes
June 26, 2019

1. **CALL MEETING TO ORDER**
   Chair Lagomarsino called the meeting to order at 7:00 PM.

2. **ROLL CALL**
   Commission Present: Duncan, Flowers, Ingle, Lagomarsino, Schaefer, Scheeler, Van Duker
   Staff Present: Bermudez, McDuffee, Ramsay, Singer, Ziegler

3. **FLAG SALUTE**
   City Attorney, Ruthann Ziegler led the flag salute.

4. **PUBLIC COMMENT**
   None

5. **CONSENT CALENDAR**
   The meeting minutes for June 12, 2019 were approved as amended. Commissioner Scheeler pointed out that Vice Chair Schaefer's name was misspelled under Commission Comments.

   M/S: Schaefer/ Van Duker
   AYES: (6) Flowers, Ingle, Lagomarsino, Schaefer, Scheeler, Van Duker
   ABSTAIN: (1) Duncan

6. **PUBLIC HEARING**

   A. **ORCHARD APARTMENTS – 7969 MADISON AVENUE:**
   Project Planner Singer presented a request for approval of a Design Review Permit Modification to eliminate 12,977 square feet of existing tennis courts and construct approximately 8,400 square feet of mini-storage buildings and modified parking for use by Orchard Apartment residents. The Commission was provided with amended conditions of approval.

There was Planning Commission and staff discussion regarding parking, fire protection, noise issues, and allocation of garage units. Planning Manager McDuffee commented that if approved it will go through a thorough review by the Building Department and Fire Department.

Chair Lagomarsino opened the public hearing.

Applicant Scott Mencaccy said that the units would be allocated on a first come first serve basis. There will be rules and regulations as to what you can and cannot store in the storage area.

John Isberner spoke in opposition to the project due to parking issues and that there are many junk cars, trash and litter left on Alta Vista.

Corinne Isberner also voiced concern regarding parking issues.

Chair Largomarsino closed the public hearing.

Commission Comments

Commissioner Van Duker spoke in support of the project and said it is a better use of the land than it is currently being used.

Commissioner Flowers spoke in support of the project and said this is a great reuse and will add value.

Commissioner Scheeler spoke in support of the project and asked if it would be permissible if no buildings were built and they added all parking spaces.

Planning Manager McDuffee commented that they would not get any more parking than they could get now.

Chair Lagomarsino re-opened the public hearing for the applicant.

Applicant Scott Mencaccy said that he could consider a redesign if it could improve the parking situation.

Chair Lagomarsino closed the public hearing.

Commissioner Duncan spoke in favor of the project.

Vice Chair Schaefer spoke in favor of the project, and said he sympathizes with the neighbors having to deal with the parking issues.

Commissioner Scheeler said he thinks that directing staff to go back and work with the owner could help to improve the parking situation.

Chair Lagomarsino polled the Commission and they unanimously agreed with Commissioner Scheeler's comment and it should be added to the motion.

Chair Lagomarsino called for a motion.

Motions

A. Find that the project is Categorically Exempt from CEQA per Section 15332 (In-Fill Development Projects) of the California Environmental Quality Act.

B. Approve a Design Review Permit Modification to allow the removal of 12,977 square feet of existing tennis courts and construction of approximately 8,400 square feet of mini-storage buildings and modified parking located at 7969 Madison Avenue subject to the findings and conditions of approval contained in this report with the amendment that the owner work with staff to determine if there is a way to improve parking on this site.

M/S: Scheeler/ Schaefer
AYES: (7) Duncan, Flowers, Ingle, Lagomarsino, Schaefer, Scheeler, Van Duker

CONDITIONS OF APPROVAL FOR DESIGN REVIEW MODIFICATION PERMIT (FILE #DRPMOD-18-09)

1. The applicant shall comply with all City of Citrus Heights Codes and Regulations, including but not limited to the Citrus Heights Municipal Code and Zoning Code, California Building Standards. [Planning]

2. This Design Review Permit approval does not include any signs. All signs must comply with the sign requirements and receive a separate permit. [Planning]

3. The project is approved as shown in Exhibits A and B and as conditioned or modified below. The project shall comply with the requirements of all agencies including service providers. [Planning]

4. The storage units shall only be available for storage of items to tenants of Orchard Apartments with hours of use limited to 7am-10pm, Sunday-Saturday. Tenants that use the units for parking of vehicles shall have 24-hour access. [Planning]

5. The dog park shall only be available to tenants of Orchard Apartments with hours of operation of 7am-10pm, Sunday-Saturday. [Planning]

6. Stormwater runoff from the storage unit area must be filtered before entering the City's storm drain system. Roof drains for the buildings shall not directly connect into the storm drain system. Downspouts shall flow to rain garden, landscaped areas, bio-swale, and/or other approved filtering methods before entering the City's storm drain system. The City is a member of the Sacramento Stormwater Quality Partnership and uses their guidelines and requirements. From the site plan provided,

runoff from the valley gutters can flow into the landscaping areas just east of the storage buildings and have the outlet drain connect to an existing DI. [Engineering]

7. The project shall comply with all requirements of all servicing agencies of the City of Citrus Heights including but not limited to Sacramento Metropolitan Fire District, Sacramento Suburban Water District, Sacramento Area Sewer District, and with the implementation measures of the Sacramento Metropolitan Air Quality Management District (SMAQMD) Basic Construction Emission Control Practices.

Prior to Issuance of Building Permit

8. The applicant shall submit a revised site plan reflecting the Planning Commission's request to re-work the design to incorporate more available parking spaces in the storage unit area for review and approval by the Planning Division and Engineering Division. [Planning]

9. Prior to any finals or occupancy, the applicant shall work with Planning staff to modify the site plan to increase the number of storage spaces that can accommodate vehicle storage, to be reviewed and approved by Planning and Engineering. [Planning]"

10. The applicant shall submit a final Landscape and Drainage Plan for review and approval by the Planning Division and Engineering Division. The plans shall reflect required changes to the design of the bioretention basin and elimination of the area drain from the pet park, as well as a buffer of additional landscape screening around the pet park and storage units. [Planning & Engineering]

Other Conditions of Approval

11. Prior to final of Building Permit, the applicant shall call for inspection by the Planning Division to verify compliance with the approved plans. [Planning]

12. Minor modifications to the design of the project, including site layout, colors and materials, may be approved by the Community Services Director provided such changes are consistent with the overall design as approved herein. Major modifications will require Planning Commission approval. [Planning]

13. Developer agrees to indemnify, defend, and hold harmless the City, its officials, officers, employees, agents and consultants from any and all administrative, legal or equitable actions or other proceedings instituted by any person not a party to this permit challenging the validity of the Agreement or any Project Approval or any Subsequent Project Approval, or otherwise arising out of or stemming from this Agreement. Developer may select its own legal counsel to represent Developer's interests at Developer's sole cost and expense. The parties shall cooperate in defending such action or proceeding. Developer shall pay for City's costs of

defense, whether directly or by timely reimbursement on a monthly basis. Such costs shall include, but not be limited to, all court costs and attorneys' fees expended by City in defense of any such action or other proceeding, plus staff and City Attorney time spent in regard to defense of the action or proceeding. The parties shall use best efforts to select mutually agreeable defense counsel but, if the parties cannot reach agreement, City may select its own legal counsel and Developer agrees to pay directly or timely reimburse on a monthly basis City for all such court costs, attorney fees, and time referenced herein. [Planning]

B. ZONING CODE UPDATE:

Project Planner Bermudez presented a request on behalf of the Planning Division that the Planning Commission review the attached Zoning Code Amendment concerning affordable housing and forward their recommendation to the City Council.

There was staff and Planning Commission discussion.

Chair Lagomarsino called for a motion.

Motions

A. Recommend the City Council find the proposed amendments are exempt from the California Environmental Quality Act (CEQA) under Section 15061(b)(3) of the Guidelines; and

B. Recommend the City Council approve the proposed amendments to Chapter 106.32 in regard to Affordable Housing Incentives as shown in attachment 1.

M/S: Duncan/VanDuker
AYES: (7) Duncan, Flowers, Ingle, Lagomarsino, Schaefer, Scheeler, Van Duker

7. REGULAR CALENDAR

None

8. ADJOURNMENT

There being no further business, the meeting was adjourned at 8:16 PM to the next meeting of September 11, 2019.

Respectfully Submitted,

Karen Ramsay

Planning Commission Secretary

CITY OF CITRUS HEIGHTS
PLANNING DIVISION STAFF REPORT
PLANNING COMMISSION MEETING
October 23, 2019

Prepared by: Casey Kempenaar, Planning Manager

REQUEST

The applicant is requesting approval of a rezone from RD-10 to RD-20 and a Design Review Permit to allow for the development of a 110-unit affordable senior apartment project located at 12057 Fair Oaks Boulevard. The applicant is also seeking three concessions to the development standards to allow parking within the required setback, reduced parking, and approval of an Affordable Housing Agreement allowing a density bonus of 11 additional units.

Applicant:	Ionic Enterprises Inc. 3007 Douglas Blvd # 170 Roseville CA, 95661	Property Owner:	Christian Engel 2004 Trust 4751 Rustic Oak Way Carmichael CA, 95608

SUMMARY RECOMMENDATION

The Planning Division recommends the Planning Commission forward the following recommendations to the City Council:

1. Recommend that the City Council adopt the resolution adopting the Mitigated Negative Declaration and Mitigation Monitoring Plan as shown in Attachment 2.
2. Recommend that the City Council adopt the ordinance approving a Rezone from RD-10 to RD-20 as shown in Attachment 3.
3. Recommend that the City Council adopt the resolution approving a Design Review Permit and granting a density bonus and three concessions to allow the construction of 110-unit senior affordable housing project based upon the findings and conditions of approval listed in Attachment 4.
4. Recommend that the City Council approve a Tree Permit to allow the removal of several trees subject to the findings and conditions of approval contained in Attachment 4.

BACKGROUND

Ionic Enterprises Inc. proposes to construct a 110-unit senior affordable multi-family housing development on three parcels totaling approximately 5-acres on the west side of Fair Oaks Boulevard, north of Treecrest Avenue. The site is home to an existing single family home, an orchard and affiliated improvements.

The project setting is summarized in the tables below:

File #:	RZ 18-01, DRP-18-05
Location:	12057 Fair Oaks Blvd (APN # 233-0430-041, -002, -007) See Vicinity Map (Attachment 1)
Parcel Size:	4.95 acres
REACH Neighborhood:	The site is within Neighborhood Association # 11

ZONING AND LAND USES

LOCATION	ZONING	GENERAL PLAN LAND USE	ACTUAL USE
On-Site	RD-10	Medium Density Residential	Single Family Home and Orchard
North	RD-20	Medium Density Residential	Apartments
South	RD-4	Low Density Residential	Single Family Homes
East	RD5 (Sacramento County)	Low Density Residential	Fair Oaks Boulevard Single Family Homes
West	RD-10	Medium Density Residential	Single Family Homes and Duplexes

Project Description

Fair Oaks Senior Apartments is a 110-unit affordable multi-family senior housing project being developed by Ionic Enterprises Inc. Ionic Enterprises Inc. specializes in affordable housing development and has developed similar projects in the Sacramento region.

The development is comprised of ten residential buildings and one community building totaling 110 rental units. The proposed project is a mix of one, two, and three story buildings. The site will also provide a variety of outdoor and indoor amenities including a managers unit. The community building includes a include a large multi-purpose room.

The outdoor amenities for the community includes numerous passive recreational uses including a trail circumventing the site, rose and vegetable gardens, fountains, and associated amenities. Additional outdoor amenities include fitness stations, benches and a dog exercise yard. Additional details regarding the recreation and amenity space is provided in the project description (Attachment 12) and discussed under the Design Review section of this report.

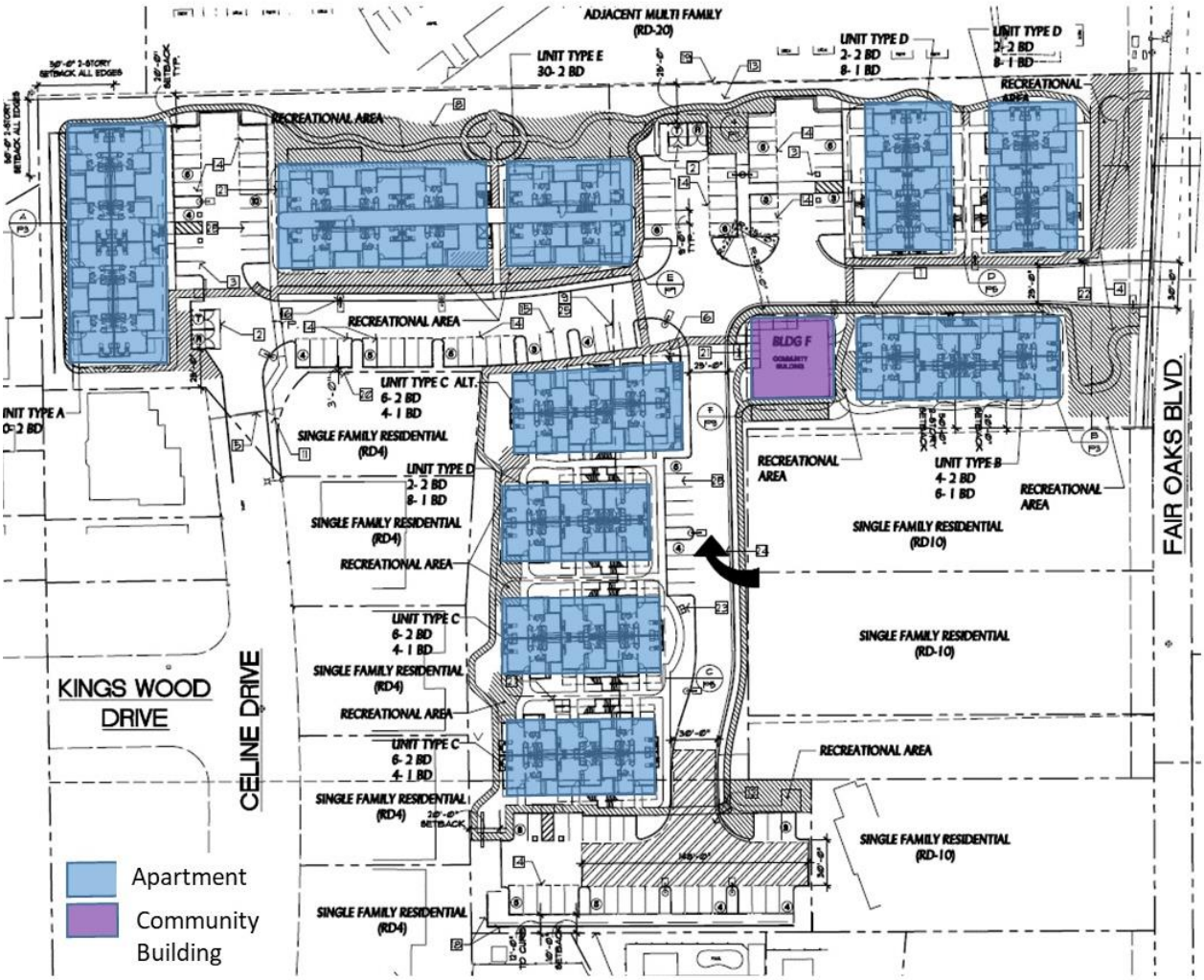
The site is currently developed with a single family home, an orchard, and affiliated improvements. There are numerous existing trees on the site including along the site perimeter. Many of the trees along the northern and western property lines are in poor condition due to years of trimming to provide for existing electric utility infrastructure.

Site Access

Primary access to the site will be provided via a new driveway on Fair Oaks Boulevard, directly across from Walnut Hills Way. An east/west drive aisle is proposed to connect the site to Celine Drive on the west side of the site. The Celine Drive access to the site will serve as Emergency Access and resident access (both vehicular and pedestrian). A vehicular and pedestrian gate will be installed at the Celine Drive entrance preventing public access (non-resident) between Fair Oaks Boulevard and Celine Drive.

A north/south drive aisle is provided along the eastern portion of the site providing access to four of the proposed buildings as well as a Fire Department turnaround and additional parking.

Figure 1 – Proposed Site Plan



Design Considerations

The project was designed to provide transitional massing between existing residences and the taller portions of the proposed structures. As illustrated in Figure 2, the proposed buildings are setback a minimum of 50 feet before increasing height to respect the existing development surrounding the site.

Figure 2 – Building Height Design Consideration

The project is comprised of ten residential buildings ranging in size from one story to three stories and a single story community building. The three story building is located on the northern portion of the site adjacent to the existing multi-family apartments; whereas the two story buildings are located closer to the adjacent single family homes.

The proposed architecture is complementary to the surrounding area. The proposed architecture includes a mix of stucco, siding and stone accent features. The proposed buildings include the use of porches and balconies to provide articulation and amenities for residents. The color pallet is comprised of earthen tones.

The proposed landscaping has been designed to provide screening along the periphery of the site as well as drought tolerant species of ground cover and shrubs. The use of bio-swales is intended to treat stormwater runoff before it enters the city's stormdrain system.

Affordable Housing

Fair Oaks Senior Apartments will provide affordable housing to seniors, age 55 and above. The project will be required to maintain affordability levels for at least 55 years.

The project is a qualified "affordable" project under State Government Code Section 65915, et seq., also known as the "Density Bonus Law." To qualify as an affordable housing development, the project must set aside a certain number of units to households whose income is considered low to very low. Fair Oaks Senior Apartments is a 100-percent affordable development, meaning all 110-units (with the exception of the managers unit) will be for residents whose income ranges fall within or below the income limits.

The project requires a Rezone from RD-10 to RD-20 to allow the proposed 110-units requested by the developer. The proposed request includes a density bonus for 11-units, consistent with the density bonus law which, totaling 110-units for the site.

The project is conditioned to enter an affordable housing agreement prior to approval of building permits. This agreement will ensure the proposed project remains affordable for a minimum of 55-years.

REZONE (RZ-18-01)

Rezone Description & Analysis

The applicant is requesting approval to Rezone the property from RD-10 to RD-20 consistent with the General Plan and the surrounding uses as illustrated in Attachment 3. The General Plan designation of Medium Density allows residential development ranging between 10 and 20 units per acre. The purpose of these zones is identified in the Zoning Ordinance:

Purpose of RD 10 and RD-20 Zone
The RD-10 through RD-20 districts are applied to areas appropriate for a variety of housing types, including small-lot single dwellings, and various types of multi-unit housing (for example, duplexes, triplexes, and apartments). The RD-10 through RD-20 zoning districts are consistent with and implement the Medium Density Residential land use designation of the General Plan.

In reviewing the purpose of the RD-10 and RD-20 Zones, and taking into consideration the location of the proposed project within an area surrounded by a mix of RD-10, RD-20 and RD-4, RD-20 is an appropriate zoning designation for the proposed project. Both RD-10 and RD-20 allow multi-family apartments and both densities are consistent with General Plan Medium Density Residential land use designation. Further, the increased density aides the city in implementing the city's housing related policies. The proposed development is physically situated in such a manner that it will minimize impact upon the surrounding existing residential housing.

General Plan Policy 4.5
Goal 4 of the General Plan is "Ensure that new development is compatible within its neighborhood." Policy 4.5 of the General Plan applies to all new developments that propose increases in the allowable residential density. The intent of the policy is to ensure that rezone projects that result in an increase of residential density provide a superior design and product than a standard development and that the rezone will not contribute to any existing issues that may already be impacting the surrounding neighborhood.

The Rezone proposes to increase the allowable residential density by rezoning the property from RD-10 to RD-20, thus increasing the allowable number of units from approximately 49-units under the RD-10 Zone to 99-units in the RD-20 Zone. The project is also requesting a density bonus to allow an additional 11-units (discussed later in this report).

	Existing Zoning (RD-10)	**Proposed Zoning (RD-20)**
Allowable Density	10 Units Per Acre	20 Units Per Acre
Net Acreage	4.95	4.95
Max. # of Units	49.5 Units	99 Units
Proposed Units	N/A	**110 Units***

* The applicant is requesting an additional 11-units under the density bonus provisions of the Zoning Code and State law

Policy 4.5 and the required findings are listed below in ***bold italics*** and are followed by staff's evaluation of the applicant's request.

Policy 4.5

- ***Ensure that requests for rezonings to increase the allowable residential density in all neighborhoods shall only be approved for projects providing superior design and enhanced community benefit. It shall be the responsibility of the applicant to demonstrate how the rezoning will allow for the development of a project that exceeds the city's minimum requirements by proving superior design and enhanced community benefit.***

The proposed rezone will increase the allowable density on the site by rezoning the property from RD-10 to RD-20. The project includes specific design measures that staff believes provide both superior design and enhanced community benefit. The applicant's Project Description (Attachment 12) provides justification for the Rezone as well. Specific design features staff believes help achieve this standard are:

- *Senior Affordable Housing* – All 110-units will be affordable to seniors over 55 for a minimum of 55 years.

- *Universal Housing* – The project proposes to incorporate the concept of Universal Housing into the design of all units. Universal housing is the concept of providing homes that are handicapped accessible or easily adaptable into accessible units. Design features included in this project include:
    - One prominent entrance to each unit will be a "zero step entrance"
    - All main floor and passageways will have a minimum 32-inch clear space to accommodate disabled persons

- *Site Amenities* – The site plan includes a variety of passive recreational amenities for the proposed community. These include:
    - Looped walking path throughout the site
    - Community Gardens
    - Rose Gardens
    - Fitness Stations
    - Community Room
    - Dog Play Area
    - Fountain/Relaxation Area
    - Multi-purpose courts
    - On-site manager

- *Building Design* –
    - The project is a mix of one, two and three story buildings. The project has been designed to use single story portions of buildings adjacent to the existing homes to provide additional privacy to the existing neighbors. The proposed three story buildings are located adjacent to the existing apartments to the north of the site
    - Architectural design draws from array of materials from the neighboring homes (lap siding, vertical/board-and-batten siding, and stucco)

*In addition, the Zoning Code requires that rezonings shall only be approved if the following findings (in **bold italics**) can be made**:***

- ***The proposed rezoning shall result in a project that contributes to and enhances the best characteristics of the surrounding neighborhood.***

Design elements from the surrounding neighborhood have been incorporated into the design of the project. While the project does not look like the surrounding neighborhood where appropriate.

The architecture includes flatter, ranch style roof pitches into the design to compliment the surrounding neighborhood, primarily comprised of ranch style homes. In addition, the design utilizes both horizontal siding and stone accents on the buildings.

The applicant has responded to the neighborhood concerns regarding the impact of two story homes on the neighborhood by proposing single-story elements stepping up to two story as the buildings move away from established homes.

- ***The applicant has demonstrated that the increased density will not negatively impact storm drainage within the local area. Proponents shall be required to provide adequate topographic and flow characteristics information to demonstrate their project will not contribute to or worsen any flooding problems in the locale.***

The site location is not known to have a history of flooding or drainage issues. The project is conditioned to install standard public improvements, including storm drain systems. The project includes vegetated swales along the perimeter of the site to improve water quality before entering the storm system. The project will not contribute to or worsen any flooding problems in the area.

- ***The applicant has demonstrated that adequate public infrastructure, including streets, water, and sewer, is available to serve the project.***

The project has been conditioned to install full public improvements to the site along Fair Oaks Boulevard and Celine Drive. The service providers have indicated the ability to serve the project subject to the conditions of approval in this staff report.

- ***The proposed rezoning will assist the city in meeting the goals of the General Plan.***

The project increases the residential density to RD-20, which is consistent with the Medium Density Residential General Plan Designation. In addition, the project supports several goals and policies of the General Plan including:

Policy 25.1 Promote development of a variety of housing types in terms of location, cost, design, style, type, and tenure, while ensuring compatibility with adjacent land uses.

Policy 25.4 Support a variety of housing opportunities on vacant or under-utilized lands.

Policy 26.2 Promote construction of housing types with a variety of prices, styles, and designs.

Goal 28 Ensure housing opportunities for all segments of the community.

Policy 28.7 Continue to use density bonuses, federal funds and other available resources to promote housing opportunities, especially for low-income persons and those with special needs, including developmental disabilities. (Action C)

Rezone – *Conclusion*

The applicant has endeavored to create a project that is superior to a standard market rate apartment to meet the intent of General Plan Policy 4.5. Based on the intended purpose of the RD-20 zone, the location of the project and minimal impact to any residential land uses in the vicinity that the proposal would create, and the compliance with General Plan Policy 4.5, staff recommends that the Planning Commission recommend approval to the City Council of the proposed rezone from RD-10 to RD-20.

Design Review Permit (DRP 18-05)

Design Review Permit – Description of Request

Fair Oaks Senior Apartments will consist of ten residential buildings and one community building making up the 110-unit multi-family residential project. The buildings are craftsman inspired architecture with a mix of stucco, horizontal lap siding, and decorative stone. The buildings will be include a combination of recessed windows, foam trim, and private balconies. The colors of the buildings will be earthen colors with trim accents, with composition shingle roofing.

As shown below and provided within the plan set (Attachment 11), the design of the buildings include a variety of features such as roof overhangs, balconies, and other articulations that will provide relief from large blank walls. The varied building heights, multiple roof pitches and quality building materials enhance the project and present a quality image.

Figure 3- Color Elevation

As shown in Figure 1, the project consists of ten buildings and a community building. A masonry wall and a landscape buffer will be placed around the interior property line to create a visual buffer between the project site and the adjoining properties. All structures will be a minimum of 20' away from an adjoining property line.

A meandering path circumvents the site and connects a variety of recreational amenities such as community gardens, fitness stations and interpretative signage. The proposed path will meander around the proposed bio-swale and include numerous crossings of the swale.

A breakdown of the units and the project's square footages are provided below:

Type of Space	Number of Units	Approximate Square Footages
1 bedroom unit	42	599
2 bedroom units*	68	823
Total Living Space	110-Units	81,122
Community Room		2,300
	PROJECT TOTAL	**83,422 Square Feet**

*Includes one Managers Unit

Design Review Permit – Analysis of Request
The Citrus Heights Zoning Code (Section 106.62.040) requires that the Planning Commission must be able to make seven findings before approving a Design Review Permit. The required findings are listed below in bold italics and are followed by an evaluation of the applicant's request in relation to the required findings.

- ***The project is consistent with the General Plan, any applicable specific plan, development agreement and/or any previously approved planning permit;***

The site is designated Medium Density Residential (MDR) in the General Plan and RD-10 the Zoning Code. The applicant has requested a rezone from RD-10 to RD-20. The maximum density for the RD-20 zone is 20-units per acre. With the project size of 4.95 acres, the proposal for 110 units exceeds the allowable density of 99-units. The applicant is also requesting a density bonus for 11 additional units as discussed later in this report.

This project is consistent with several goals of the General Plan, including the following:

Policy 10.1 Require superior architectural and functional site design features for new development projects along major corridors.

Policy 25.1 Promote development of a variety of housing types in terms of location, cost, design, style, type, and tenure, while ensuring compatibility with adjacent land uses.

Policy 25.4 Support a variety of housing opportunities on vacant or under-utilized lands.

Policy 26.2 Promote construction of housing types with a variety of prices, styles, and designs.

Goal 28 Ensure housing opportunities for all segments of the community.

Policy 28.7 Continue to use density bonuses, federal funds and other available resources to promote housing opportunities, especially for low-income persons and those with special needs, including developmental disabilities. (Action C)

The proposed project supports the above listed goals of the General Plan related to housing. The General Plan acknowledges there is a need for additional housing in the city, and that new housing should serve all segments of the community. The Housing Element portion of the General Plan was adopted in 2013 which identified a housing goal of 696 new units for the period 2013-2021. For the 5 year period of 2013-2017, 89-units were constructed. Nearly all of these units were single-family homes. This project will be the third multi-family project during this planning period and the first affordable housing project for seniors since the development of Normandy Park Apartments soon after the city's incorporation.

Noise. The General Plan applies an exterior noise level standard at the common outdoor recreational areas of multi-family residential land uses exposed to transportation noise sources (i.e., traffic). The intent of this standard is to provide an acceptable exterior noise environment for outdoor activities. As shown in the Noise Study prepared by Bollard Acoustics (Attachment 6), noise from traffic along Fair Oaks Boulevard at the common outdoor recreational area would be in compliance with the City of Citrus Heights exterior noise level standard of 65 dB Ldn.

The General Plan also applies an interior noise level standard for new residential developments including a maximum instantaneous noise level standard in bedrooms and in all other habitable rooms. The review of proposed construction materials, including sidings, window and door ratings as well as the building heights are reviewed for compliance with the noise limits established in the General Plan. The project includes a Mitigation Measure and a condition of approval requiring specific construction materials on the buildings fronting Fair Oaks Boulevard to reduce the sound affiliated with the roadway.

The development of the property will generate added urban noise, such as traffic and landscape maintenance activities. However, noise levels are not expected to change substantially from those currently experienced in the area because overall activity levels at the site would be modest. Ambient noise levels could decrease for some of the adjacent properties due to the shielding of traffic noise by the proposed buildings and the installation of the CMU walls along the property boundary.

Based upon the information contained herein, the project is in compliance with the General Plan.

- ***The project complies with the Zoning Code;***

Height & Setbacks. The project is proposed to be zoned RD-20 and as shown in the table below, the project meets the required primary building setbacks:

	Minimum Setbacks for Primary Structure within RD-20 Zone	**Setbacks Provided by Project**
Front Setback	25’	25’
Rear Setback	20’	63’
Side Setback		
- **1 Story**	10’	20’
- **2 Story**	20’	50’
- **3 Story**	30’	46’

The maximum height in the RD-20 zone is 20-feet and two stories within 50-feet of a residential zone (RD-1 to RD-10) and 50-feet and four stories elsewhere. The buildings vary in height from 10’6” for single story portions to the height of 40-feet for the 3-story portions of the buildings. As illustrated in Figure 2, the project has been designed to provide single story portions of the building adjacent to RD-10 and RD-4 zones thereby complying with the maximum height requirements. All primary buildings are setback from the closest property line by approximately 20-feet, therefore the height of the buildings meet the zoning standards.

Based upon the information contained herein, the project is in compliance with the Zoning Code.

- ***The project’s architectural design and building massing and scale are appropriate to and compatible with the site surroundings and the community;***

- ***The project provides attractive and desirable site layout and design, including building arrangement, exterior appearance and setbacks, drainage, fences and walls, grading, landscaping, lighting, signs, etc.;***

- ***The project complies with all applicable design standards in Chapter 106.31 and/or other applicable city design guidelines and policies;***

Building Massing and Scale. The project’s massing and scale are appropriate as a transition from the existing apartments to the north to single family homes to the south and west. Rather than consolidate

units in a larger building, the units have been grouped into ten buildings with varied building heights of one, two and three stories.

Fencing. As shown on the site plan, a masonry wall will be placed along the boundary of the project site along the west, south, and east property lines The wall will be six feet in height along the shared boundary of the project site and the adjacent parcels. Along the northern property line, a wrought iron fence will be provided between the project site and the adjacent existing apartment.

Along the southern property line, the proposed wall will meander around several existing Cypress trees which are located in close proximity to the property line. The applicant proposes to perform a lot line adjustment to provide the land behind the proposed wall to the adjacent property owner.

Drainage. The preliminary stormwater plan is provided in the planset (Sheet C6 of Attachment 11). Connection to the public storm drain system is required and the development of the site will be not increase stormwater runoff. All drainage will be treated within proposed vegetated swales before entering the city's stormdrain system.

Recreation Area. As shown on the Landscape Plans (Sheets L1 and L2 of Attachment 11) the project is providing a variety of recreation amenities including a meandering trail, community room, fitness center, dog play area, multi-use open areas, community gardens and associated improvements.

Based upon the requirements of the Zoning Code, the project is required to provide 22,000 square feet (SF) of recreation space (200 SF per unit). The project is providing 27,032 SF (does not include landscaping and pathway adjacent to Fair Oaks Boulevard) through the variety of indoor/outdoor amenities discussed above.

Project Lighting. The Zoning Code requires all on-site external lighting be designed to have no off-site glare and light fixtures to have full cut-off lenses. The preliminary lighting plan submitted indicates the proposed fixtures meet the requirement and prior to issuance of the building permit, the applicant will be required to submit a photometric plan to ensure the project does not provide any offsite glare and meets the standards of the Zoning Code.

Design Guidelines. The city's Guidelines for architectural design and site layout are described in Chapter 106.31 of the Zoning Code. Staff believes the overall design complies with the Design Guidelines including the use of quality materials providing visual interest and texture, varied roof heights to reduce the massing, and the use of balconies and porches for aesthetic value.

Based upon this information, the project's massing, design, and site layout comply with the design standards.

- ***The project provides safe and efficient public access, circulation and parking, including bicycle and pedestrian accommodations where appropriate; and***

Parking: The Zoning Code requires both covered and uncovered parking areas for senior apartment projects. The number of parking spaces required is based upon the number of bedrooms in each unit plus one space per ten units for guest parking. Half the spaces are required to be covered.

As demonstrated by the table below, the site does not meet the parking requirement identified by the Zoning Code. As discussed in the concessions portion of the staff report, the applicant is requesting a concession to allow a reduction in parking space requirements.

In addition, the Zoning Code allows a reduced parking requirement for senior housing projects if the applicant provides quantitative information documenting a reduced need for parking. Attachment 13 provides a parking analysis of two existing senior apartment complexes currently operated by the applicant. This analysis indicates that both comparative examples utilize less parking than what is required by the Zoning Code. The applicant is requesting to provide 88.4-percent of the required parking, based on this quantitative analysis (107 spaces).

Unit Summary	Number of Units	Required Parking	Number Required	Number Provided
1 bedroom unit	42	1 space per unit	42	42
2 bedroom units	68	1 space per unit	68	65
Guest parking	1 per 10 units	11 spaces	11	0
		TOTAL	121	107 (56 covered)

Staff is supportive of this request given the nature of the development and evidence from similar developments operated by the applicant. Further, the applicant is entitled to request a reduction in parking required as part of the affordability concessions allowed under state law.

Driveways and Access. The main entry point, will be located directly across Fair Oaks Boulevard from Walnut Hills Way. The applicant does not propose to gate the entry to the proposed development.

The project also includes a second access point to Celine Drive on the west side of the site. Due to concerns with the potential for traffic to cut-through the proposed development, the applicant has provided a vehicular and pedestrian gate at this access point. The intent of this access point is to allow for residents of the project to travel south on Celine Drive and west on Kingswood Drive to access Sunrise Boulevard. The gate will also be designed to allow for emergency access from Celine Drive. A pedestrian gate will also allow access for pedestrians attempting to walk west towards Sunrise Boulevard.

The improvements associated with the project would be consistent with city design standards. The driveway entrances are located and configured to provide adequate line-of-sight viewing distance in both directions, and to facilitate efficient ingress/egress to and from the subject parcel.

Traffic: A Traffic Impact Study (TIS) was prepared for the project and is provided as Attachment 5. The TIS evaluated seven intersections near the site:

- Fair Oaks Boulevard at Greenback Lane
- Fair Oaks Boulevard at Sunrise East Way
- Fair Oaks Boulevard at Walnut Hills Way
- Fair Oaks Boulevard at Treecrest Avenue
- Fair Oaks Boulevard at Madison Avenue
- Sunrise Boulevard at Kingswood Drive
- Kingswood Drive at Celine Drive.

The TIS looked at the above intersections, under “existing conditions”, under “existing plus project” conditions, “cumulative project conditions”, and “cumulative plus project conditions” and evaluated the project against the city’s Level of Service (LOS) policy as outlined in Policy 29.2 of the General Plan.

Policy 29.2 calls for the city to strive to achieve LOS E on city roads and intersections during peak hours, with exceptions to certain intersections, where LOS E can be exceeded. Exceptions to LOS E are allowed on Sunrise Boulevard from the south to north city limits.
As shown in the table below, the apartments would be expected to generate 418 daily trips, of which there would be 22 AM peak hour trips and 29 PM peak hour trips. The majority of AM Peak hour trips would be outbound, while the majority of PM Peak hour trips would be inbound.

Land Use	Total Daily Trips	AM Peak Trips In /Out /Total	PM Peak Trips In /Out /Total
Senior Adult Housing (252)	418	8 inbound / 14 outbound / 22 total	16 inbound / 13 outbound / 29 total

Source: Kimley Horn

According to the TIS, all of the study intersections currently operate at an acceptable LOS (in accordance with Policy 29.2 of the General Plan) and would continue to operate at an acceptable LOS with the addition of the apartments. Further, the project would not impact cumulative conditions at build out. This study did not identify any expected degradation of the transportation system due to the construction of this project.

The TIS also evaluated the potential increase in traffic that would utilize neighborhood streets. As discussed previously, only residents and emergency vehicles will be able to access Celine Drive through a gated entry. As a result the amount of traffic increasing on Celine Drive and Kingswood Drive would be minimal. Based on the TIS, approximately 209 trips daily (12 AM Peak Hour and 15 PM Peak Hour) would utilize this route to access Sunrise Boulevard.

Bicycle, Pedestrian, and Transit Facilities: Within the project area are Class II Bikeways (on-street bike lanes with appropriate signing and striping) on both sides of Fair Oaks Boulevard. The project will be required to install public improvements (curb, gutters and sidewalk) along Fair Oaks Boulevard and Celine Drive.

The project has been conditioned to provide pedestrian access gates along the Celine Drive frontage. The gates shall remain locked and each gate will be controlled via a key fob or other approved device provided to each resident.

Based upon the information contained within the TIS and project details, the project provides safe and efficient access in compliance with city standards.

Adjacent Land Use Connection

The applicant and the city have been in communication with the adjacent property owner on Fair Oaks Boulevard (12023 Fair Oaks Boulevard) about the possibility to include a future connection from the adjacent parcel to the north/south drive aisle on the subject property. The applicant has agreed to provide an access easement to enable a future vehicular and pedestrian connection to the 12023 Fair Oaks Boulevard.

This will allow access through the site in the event the owner of 12023 Fair Oaks Boulevard pursues development on his property. This is advantageous as this reduces the numbers of driveways and conflict points on Fair Oaks Boulevard. Because the nature and compatibility of any future development is unknown at this time, the potential connection is conditioned to be allowed only at the city's discretion. If an application for a compatible use is submitted, the city can allow for

a connection via the Fair Oaks Senior Apartments property. The project is conditioned to provide reciprocal access to the adjacent property owner at such time the owner develops his property, subject to city approval.

- ***The project provides open space and landscaping, including the use of water efficient landscaping.***

Landscaping: With the exception of the two concession locations related to landscape planters (discussed later in this report), this project will exceed the minimum landscaping by providing a ten foot planter between the property boundary and the parking spaces. Within the planter will be the masonry wall and plantings adjacent to the wall will include a variety of trees and shrubbery. The planting of trees will help provide shade to the parking area as well as provide screening between the project site and the adjoining residential properties.

The preliminary Landscape Plan (Sheets L1 and L2 of Attachment 11) also identifies amenities throughout the site, including the dog exercise yard, trails, community gardens, and other recreational amenities.

As discussed in the fencing section of the Staff Report, the proposed fencing will jog around existing Cypress trees located on or adjacent to the southern property line. The applicant will also install additional screen trees on the north side of the proposed wall to screen the development from homes on the southern portion of the site. The applicant has proposed a lot line adjustment with the adjacent neighbor to the south of the site to reflect the jog in the fence for maintenance and access purposes.

Trees: The site is home to numerous trees of varying condition, particularly along the property lines adjacent to the residential properties. Many of the trees, particularly on the northern property line have been impacted by years of trimming due to utility clearance. Due to the grading necessary on the site, the majority of the existing trees on site will be removed. The applicant is required to mitigate the loss of healthy trees in accordance with the Tree Preservation Ordinance. Additional information is contained in the Tree Permit section of this report. The project's proposed landscaping is in compliance with city standards.

Design Review Permit - *Conclusion*

As proposed and conditioned, staff believes the required findings can be made to approve the Design Review Permit for this project. Staff recommends approval of the Design Review Permit subject to the conditions of approval contained in the staff report.

Density Bonus and Concession Request

Description of Request
The applicant is requesting a density bonus as well as three concessions related to parking and Fire Department turnaround location.

State law and the Zoning Code have provisions that allow density bonuses and concessions for development standards for projects that meet certain affordable housing criteria. Section 106.32 of the Zoning Code identifies these requirements.

Density Bonus

According to 106.32.020 of the Zoning Code, developments that provide at least 10 percent of the units as affordable units are entitled to a density bonus. Further, developments that are age restricted as senior citizen housing developments are entitled to a density bonus.

As outlined in the project description (Attachment 12), the proposed project is restricted to low income senior citizens, which allows for a density bonus under the ordinance. The project will reserve 98-units for persons earning less than 60-percent of the Area Median Income (AMI) and 11-units for residents earning less than 50-percent of the AMI as well as one manager unit as illustrated below.

Number of Units	Affordability Level	AMI	Monthly Income Limits[1]
98	Low Income	60%	$3,765
11	Very Low Income	50%	$2,787
1	Managers Unit	N/A	N/A

[1] 60% of the median income = $45,180 per year ($3,765 mo.) for a three-person household and $35,160 per year ($2,930 mo.) for a one-person household.
50% of the median income = $33,450 per year ($2,787.50 mo.) for a two-person household and $29,300 per year ($2,441.66 mo.) for a one-person household. Per California Tax Credit Allocation Committee 2019 for Sacramento County

According to the Zoning Code, the percentage of density bonus is proportional to the percentage of units restricted to low income or senior restricted units. The proposal is 100-percent affordable and also restricted to senior citizens, meeting both of these criteria. As a result the project is eligible to be granted a density bonus of twenty percent.

As discussed earlier, the applicant has requested a rezone from RD-10 to RD-20 which would allow for 99 units. The applicant is requesting a density bonus of twelve-percent, which would allow for an additional eleven units, totaling 110-units for the site.

Concession Requests

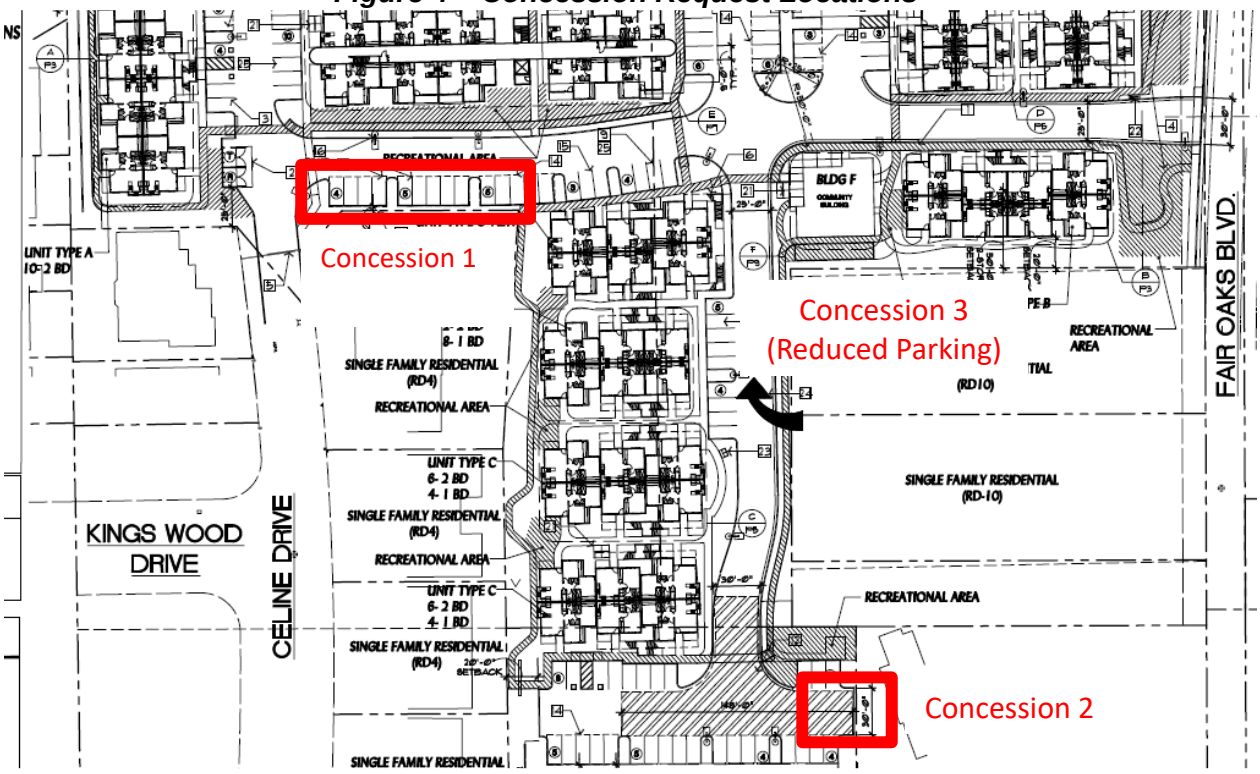
Section 106.32.040 of the Zoning Code allows incentives or concessions if the proposal qualifies for a density bonus as outlined above. Based on the composition of 100-percent affordable units, the project would qualify for up to three unique concessions.

The applicant is requesting three concessions which are related to the location of proposed parking and the minimum landscape planter dimensions required adjacent to residential properties. The locations of the requested concessions is shown below in Figure 4.

The first concession requested is related to the parking area near the intersection of the east/west drive aisle and Celine Drive. According to Section 106.36.080.A.1.b, required parking shall not occupy any setback. In this case the side yard setback is ten feet minimum. In order to accommodate parking, drive aisle and the apartments, the applicant is requesting a concession to only provide a 3-foot landscape planter between the property line and the parking stalls in this location.

The second concession is to allow the paving for the Fire Department turn around (part of the parking lot) to encroach into the required landscape planter. Section 106.34.040.D.4.b requires a minimum landscape planter of eight feet (inside dimension). In this location, the Fire Department turn around will be located approximately one foot from the proposed masonry fence. As a result, the applicant is requesting a concession to reduce the landscape planter to accommodate the turn around.

Figure 4 – Concession Request Locations



The third concession request is related to the amount of parking required to serve the site. As discussed in the Design Review Permit portion of this Staff Report, the applicant is providing 107 parking stalls, whereas, 121 stalls would be required. The applicant is requesting a concession to provide an 11.6-percent reduction in parking stalls. Attachment 13 provides data about similar projects operated by the applicant, demonstrating that the Zoning Code requirements provide excessive parking for the proposed use.

Density Bonus and Concession Request- ***Analysis***

Consistent with California State Law (Government Code Section 65915), the city's Zoning Code allows an affordable housing project to request density bonus, concessions, or deviations, from an applicable development standard, provided the concessions are necessary for the provision of the affordable units. Per Section 106.32.040 of the Zoning Code (Attachment 9), the City Council shall grant the concession unless the Council makes either of the findings listed within the Code and analyzed below.

The Zoning Code states that a density bonus and/or concession shall be granted unless either of the following findings can be made, based on substantial evidence:

- The incentive or concession is not required to provide for affordable housing costs, as defined in Health and Safety Code Section 50052.5, or for rents for the targeted units to be set as specified in Section 106.32.070.B. (Unit cost requirements); or

- The incentive or concession would have a specific adverse impact, as defined in Government Code Section 65589.5(d)(2), upon public health and safety or the physical environment, or on any real property listed in the California Register of Historical Resources and for which there is no feasible method to satisfactorily mitigate or avoid the specific

adverse impact without rendering the development unaffordable to low and moderate income households.

The applicant shall show that a waiver or modification of development standards is necessary to make the housing units economically feasible.

In accordance with the findings above, the applicant has provided a letter detailing their concession requests and why the requests are needed in order for the project to be financially feasible. Please review the applicant's letter included as Attachment 10.

The applicant has indicated that the request for concessions are necessary to maintain the proposed unit count. The letter states that if the Zoning Code were strictly applied, the project would eliminate three buildings totaling about 21-units being eliminated.

According to the letter, this reduction would result in a significant reduction in funding that would be associated with those units, such as tax-credits and low-interest bond funding. The loss of capital funds would make the project no longer economically feasible.

As described above, the concessions being requested are related to requirements for landscaping and setbacks to paving areas (parking and Fire Department turnaround).

The unique "T" shape of the property limits the ability to fit the necessary units on the site as well as the associated site improvements to provide for vehicular circulation and parking. For example, shifting the Fire Department turn around to provide the minimum landscape planter width would result in the loss of at least four units.

As required by the Zoning Code, the following findings required for approval are listed and analyzed below.

1. ***The residential development will be consistent with the General Plan, except as provided by this Chapter for density bonuses, and other incentives and concessions;***

2. ***The number of dwellings can be accommodated by existing and planned infrastructure capacities;***

As discussed in the Design Review portion of this report, the project is consistent with policies of the General Plan and its Housing Element portion in that the project supports several General Plan Policies related to housing.

The project proposes 110-units which meets the density allowed for the rezoned site and there are adequate utilities and other infrastructure in the area to support the project.

3. ***Adequate evidence exists to indicate that the project will provide affordable housing in a manner consistent with the purpose and intent of this Chapter; and***

4. ***There are sufficient provisions to guarantee that the units will remain affordable for the required time period.***

The applicant will enter into an agreement with the city meeting all the requirements of the Zoning Code. The agreement will state that 100-percent of the units will be affordable for the minimum period of 55 years.

Density Bonus and Concession Request- ***Conclusion***

The proposed project will result in 110 affordable units restricted to senior residents. This exceeds the minimum requirements necessary to grant a density bonus of up to 35-percent under the Zoning Code and state law. The approval of the density bonus will result in a financially feasible project that provides affordable housing for seniors in the community.

With the exception of the requested concessions, the project complies with all other applicable development standards as required by the city's Zoning Code, multi-family design standards, building setbacks, parking (with the requested concessions), and recreational space.

Staff reviewed the information provided by the applicant and concurs the project would not be feasible without granting the concessions to allow parking within the setback, reduced parking, and a reduced planter width for the Fire Department turnaround. In addition, the requested concessions would be granted consistent with the procedures and requirements established by California Government Code Sections 65915 (Density Bonuses and Other Incentives) and will not be contrary to any federal laws.

Based on the analysis above, staff recommends the density bonus and concession request be granted.

Tree Permit

Tree Permit – Description of Request

As noted previously, the project site contains numerous trees, including native oak trees as well as other native and ornamental trees. Many of these trees have been trimmed to maintain utility clearance over the last several decades.

Attachment 7 and Plan Set Sheets C1, C2, L1 and L2 provide an inventory and impact assessment on the health and structure of the protected trees on the project site. Not counting the trees located off-site, the report states that 50 trees (941-inches DBH) are proposed to be removed with the project. Of those 50 trees, 16 are recommended for removal by the arborist due to health/structural problems, and 34 are proposed for removal as a result of development of this site. In addition to the trees proposed for removal, an estimated 29 other trees will be impacted by development through encroachments (construction activity) occurring within their dripline.

As indicated in the Tree Impact Assessment, the following 16 protected trees (554-inches DBH) are proposed for removal due for health reasons:

> 24057, 24058, 24068, 24069, 24078, 24083, 24086, 24088, 24089, 24090, 24091, 24131, 24132, 24133, 24135, 24136

As indicated in the Tree Impact Assessment, the following 34 protected trees (387-inches DBH) are proposed for removal due the development of the properties (public improvements and apartment construction):

> 24028, 24037, 24038, 24046, 24051, 24052, 24053, 24056, 24059, 24061, 24062, 24064, 24066, 24067, 24075, 24092, 24093, 24094, 24095, 24096, 24097, 24121, 24123, 24124, 24126, 24127, 24129, 24145, 24157, 24161, 24162, 24163, 24164, 24167

Tree Permit - *Analysis*

Chapter 19.12 of the Citrus Heights Municipal Code contains the city's Tree Preservation Ordinance. The purpose of this Ordinance is to preserve and protect the city's remaining native oak trees and other species of trees greater than 19 inches in diameter.

The arborist report and site plan indicate the project will remove 34 protected trees resulting in approximately 387-inches of diameter removal due to construction impacts. Mitigation for the loss of these trees may include the replanting other tree species acceptable by the city, the payment into a tree preservation fund ($298 per inch of diameter), or a combination of these mitigation measures.

The Landscape Plans (Sheets 1.0 and 2.0 of Attachment 11) depict a total of 87 new trees being planted on the site. These 87 trees can count towards the mitigation for the loss of protected trees; however, the balance of the replacement trees (300-inches) will be required to be planted off site or paid into the city's tree preservation fund. A final tree impact assessment is required prior to issuance of the building permit for the development. Final mitigation fees will be determined prior to the issuance of the building permit.

The project is conditioned to provide tree protection fencing for all trees proposed to remain or any offsite trees near the project improvements. In addition, the project is conditioned to have all work within the protected zone of trees to remain to be monitored by an arborist.

Upon completion of construction, a final tree impact summary will be prepared. Any trees that are impacted by construction will require mitigation as determined by the arborist.

Tree Permit - Conclusion

Based on the analysis above and the fact that the applicants will be required to mitigate the loss of any trees proposed for removal, staff recommends approval of the Tree Permit. The project will be required to mitigate for 300-inches of tree removal and protect trees proposed to remain. A mitigation plan will be required prior to the issuance of any development permits.

PUBLIC OUTREACH

The project is located within the Birdcage Heights Neighborhood Association (Neighborhood 11) On January 5, 2019 the applicant attended the Neighborhood Association meeting and presented the project. The Association members reviewed the project providing general comments and offered suggested changes related to a proposed trash enclosure. Based on this feedback the applicant revised the proposed location of the trash enclosure.

The applicant invited members of the Association to visit other communities they developed in Roseville. Three members of the Association attended the tour and offered supportive comments.

The applicant also attended the Neighborhood Association meeting on February 20, 2019 which was attended by approximately 30 residents. The applicant presented the project and answered questions. Attendees responded with concerns related to the potential of cut-through traffic from Fair Oaks Boulevard to Sunrise Boulevard. The applicant explained that a gate would only allow the senior residents to access the Celine Drive entrance, preventing general cut-through traffic.

Numerous emails were received from nearby neighbors and the Neighborhood Association related to concerns with the project. These comments are included as Attachment 14.

ENVIRONMENTAL DETERMINATION

In accordance with the requirements of the California Environmental Quality Act (CEQA), an Initial Study was prepared for the project. The Initial Study thoroughly analyzed the potential for environmental impacts.

As a result of the environmental analysis described in the Initial Study, it was determined that with the incorporation of nine mitigation measures, the project would not have a significant effect on the environment. The Initial Study determined that an EIR was not required for the project and that a Mitigated Negative Declaration (MND) was the appropriate level of review under CEQA.

The MND was released for public review on October 3, 2019; the public comment period on the MND ended on October 23, 2019.

The Initial Study/Mitigated Negative Declaration is attached as part of Attachment 2. The mitigation measures included within the Initial Study/Mitigated Negative Declaration are summarized below (see the MND for full description of each mitigation measure):

- Basic emission control measures shall be followed during construction, such as watering surfaces two times daily, utilizing street sweepers, limiting on-site vehicle speeds, completing paving as soon as possible, and requiring haul trucks to meet certain criteria.
- A Tree Protection and Replacement Plan shall be prepared.
- Pre-construction surveys required for special status species including bats and raptors
- Incorporation of sound mitigation into building design for buildings closest to Fair Oaks Boulevard
- Construction noise shall comply with Noise Ordinance
- Cessation of all work should occur if cultural or human remains are encountered.
- Preparation of a Construction Traffic Management plan to ensure safe access for construction vehicles during construction.

CEQA requires that mitigation measures must be incorporated into a Mitigation Monitoring Plan. The purpose of the Mitigation Monitoring Plan is to ensure compliance with the mitigation measures during implementation of the project. The Mitigation Monitoring Plan for the project is attached as part of Attachment 2. The attached Resolution incorporates adoption of the Mitigation Monitoring Plan.

Greenhouse Gas Emissions. The City of Citrus Heights adopted a Greenhouse Gas Reduction Plan (GGRP) in 2011. Projects that are consistent with the GGRP are considered, under CEQA, to have a less than significant impact with regard to the project's Greenhouse Gas emissions. The project is conditioned to require the applicant to submit evidence of compliance with the items in the GGRP Plan prior to issuance of any building permits.

SUMMARY/RECOMMENDED ACTION

The role of the Planning Commission is to review the project and forward a recommendation to the City Council. Staff recommends the following motions:

1. Recommend that the City Council adopt the resolution adopting the Mitigated Negative Declaration and Mitigation Monitoring Plan as shown in Attachment 2.

2. Recommend that the City Council adopt the ordinance approving a Rezone from RD-10 to RD-20 as shown in Attachment 3.

3. Recommend that the City Council adopt the resolution approving a Design Review Permit and granting a density bonus and three concessions to allow the construction of 110-unit senior affordable housing project based upon the findings and conditions of approval listed in Attachment 4.

4. Recommend that the City Council approve a Tree Permit to allow the removal of several trees subject to the findings and conditions of approval contained in Attachment 4.

Attachments

1. Vicinity Map
2. Resolution 2019-___ approving MND and MMRP
    a. Mitigated Negative Declaration
    b. Mitigation Monitoring Plan
3. Ordinance 2019-____ rezoning property from RD-10 to RD-20
    a. Rezone Map
4. Resolution 2019-___ approving three concession requests and a Design Review Permit
    a. Conditions of Approval
    b. Draft Affordable Housing Agreement
5. Traffic Impact Assessment Prepared by Kimley Horn
6. Acoustical Analysis Prepared by Bollard Acoustical Consultants, Inc.
7. Arborist Report prepared by Acorn Arborists
8. Phase 1 Site Assessment
9. Affordable Housing Section of the Zoning Code 106.32
10. Density Bonus and Concession Request
11. Complete Plan set
    A. Proposed Site Plan – P1
    B. Typical Apartment Units – P2
    C. Type A and B Unit Layout- P3
    D. Type A Elevations – P4A
    E. Type B Elevations – P4B
    F. Type C and D Unit Layout- P5
    G. Type C and C1 Elevations – P6A
    H. Type D Elevations – P6B
    I. Type E Unit Layout – P7
    J. Type E Elevations – P8
    K. Clubhouse Plan and Elevations – P9
    L. Roof Plans – P10
    M. Site Details – P11
    N. Type A Colored Elevations –P4AC
    O. Type B Colored Elevations –P4BC
    P. Type C and C1 Colored Elevations – P6AC
    Q. Type D Colored Elevations – P6BC
    R. Type E Colored Elevations – P8C
    S. Club House Colored Elevations –P9C
    T. Tree Removal and Demo Plan – C1
    U. Tree Removal and Demo Plan – C2
    V. Tree Survey Data – C3
    W. Preliminary Grading Plan - C4
    X. Preliminary Utility Plan - C5
    Y. Preliminary Stormwater Plan – C6
    Z. Preliminary Landscape Plan – L1
    AA. Preliminary Landscape Plan – L2
    BB. Landscape Illustrations and Details – L3
    CC. Landscape Illustrations and Details – L4
12. Project Description

13. Parking Letter
14. Communication from neighborhood

North

Attachment 1

Fair Oaks Affordable Senior Apartments
12057 Fair Oaks Blvd

RZ18-01, DRP 18-05

ATTACHMENT 2

RESOLUTION NO. 2019-__

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CITRUS HEIGHTS, CALIFORNIA, ADOPTING A MITIGATED NEGATIVE DECLARATION PURSUANT TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) FOR THE 12057 FAIR OAKS BOULEVARD SENIOR AFFORDABLE HOUSING PROJECT

WHEREAS, Ionic Enterprises, LLC submitted an application for approval of:

- A Rezone to change the Zoning from RD-10 to RD-20;
- A Design Review Permit to construct a 110-unit senior affordable housing project;
- A Tree Permit to remove several trees and encroach within the protected zone of certain protected trees for the development of the project;
- A Density Bonus to allow a 12-percent density bonus consistent with section 106.32 of the Zoning Code for affordable housing;
- A concession request to concession to the development standards to allow parking in a required setback and for a fire department turn around to be placed in a landscape planter; and

WHEREAS, the Planning Commission held a public hearing on October 23, 2019 and the City Council held a public hearing on December 12, 2019, wherein public testimony was taken and based upon the Initial Study and comments received, potential impacts could be avoided or reduced to a level of insignificance by mitigation measures.

NOW, THEREFORE, BE IT RESOLVED that the Citrus Heights City Council hereby finds as follows:

Findings for a Mitigated Negative Declaration:

1. An Initial Study was prepared for 12057 Fair Oaks Boulevard Senior Affordable Housing Project project and proper notice provided in accordance with CEQA and local guidelines.

2. That based upon the Initial Study, potential impacts resulting from the project have been identified. Mitigation measures have been proposed and agreed to by the applicant as a condition of project approval that will reduce potential impacts to less than significant. In addition, there is no substantial evidence that supports a fair argument that the project, as conditioned and mitigated, would have a significant effect on the environment.

3. That the project does not have the potential to have a significant adverse impact on wildlife resources as defined in the State Fish and Game Code, either individually or cumulatively and is not exempt from Fish and Game filing fees.

4. That the project is not located on a site listed on any Hazardous Waste Site List compiled by the State pursuant to Section 65962.5 of the California Government Code.

5. That the Planning Commission and City Council reviewed the Initial Study and considered public comments before making a recommendation on the project,

6. That a Mitigation Monitoring Program has been prepared to ensure compliance with the adopted mitigation measures, which Mitigation Monitoring Program was considered by the Citrus Heights City Council and which Mitigation Monitoring Program is made a part of this resolution.

7. That the Mitigated Negative Declaration prepared concerning 12057 Fair Oaks Boulevard project reflects the independent judgment and analysis of the City Council of the City of Citrus Heights.

8. The City Council adopts as "final" the 12057 Fair Oaks Boulevard project Mitigated Negative Declaration comprised of: the Mitigated Negative Declaration (attached as Attachment 2a); and the Mitigation Monitoring Plan (attached as Attachment 2b).

9. That the record of proceedings of the decision on the project is available for public review at the City of Citrus Heights Community Development Department, 6360 Fountain Square Drive, Citrus Heights, California.

BE IT FURTHER RESOLVED that the Citrus Heights City Council in reference to the potential impacts identified in the Initial Study, hereby adopts the Mitigated Negative Declaration prepared for 12057 Fair Oaks Boulevard project including the mitigation measures (contained within the attached Mitigated Negative Declaration and Mitigation Monitoring Program) and included in this resolution by reference.

PASSED AND ADOPTED by the City Council of the City of Citrus Heights, California this 12th day of December 2019, by the following roll call vote:

AYES:	**COUNCIL MEMBERS:**
NOES:	**COUNCIL MEMBERS:**
ABSENT:	**COUNCIL MEMBERS:**
ABSTAIN:	**COUNCIL MEMBERS:**

_____

Jeannie Bruins, Mayor

ATTEST:

_____

Amy Van, City Clerk

Attachments:

A. Mitigated Negative Declaration
B. Mitigation Monitoring Program

City of Citrus Heights

INITIAL STUDY / ENVIRONMENTAL CHECKLIST

I. BACKGROUND AND PROJECT DESCRIPTION

1. **Application No.:** DRP-18-05, RZ18-01

2. **Project Title:** Fair Oaks Senior Apartments

3. **Lead Agency Name and Address:**
   City of Citrus Heights Planning Division
   6360 Fountain Square Drive
   Citrus Heights, CA 95621

4. **Contact Person and Phone Number:**
   Casey Kempenaar, Planning Manager
   ckempenaar@citrusheights.net
   916-727-4740

5. **Project Location:**
   12057 Fair Oaks Boulevard
   Citrus Heights, CA 95621
   APN #:233-0430-041, -043, -007

6. **Project Applicant's/Sponsor's Name and Address:**
   Ionic Enterprises, Inc.
   Paul Stamas
   3007 Douglas Boulevard #170
   Roseville CA, 95661

7. **General Plan Designation:**
   Medium Density Residential

8. **Zoning:**
   RD-10 (existing)
   RD-20 (proposed)

9. **Project Summary:**
   The project site is comprised of three parcels totaling 4.95 acres located along the west side of Fair Oaks Boulevard and east of Celine Drive. The project includes the development of a new 110-unit affordable senior apartment project and associated improvements.

10. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.31?**

    Yes

INTRODUCTION

This Initial Study has been prepared to identify and assess the anticipated environmental impacts of the proposed Fair Oaks Senior Apartment (proposed project). The document relies on previous environmental documents (discussed below) as well as site-specific reports to address in detail the effects or impacts associated with the project.

CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. The Initial Study is a public document used by the decision-making lead agency, the City of Citrus Heights, to determine whether a project may have a significant effect on the environment. If the lead agency finds substantial evidence that any aspect of the project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the lead agency is required to prepare an EIR (or rely upon a previously prepared EIR). If the agency finds no substantial evidence that the project or any of its aspects may cause a significant effect on the environment, a Negative Declaration shall be prepared. If in the course of analysis, the agency recognizes that the project may have a significant impact on the environment, but that by incorporating specific mitigation measures the impact will be reduced to a less than significant effect, a Mitigated Negative Declaration shall be prepared.

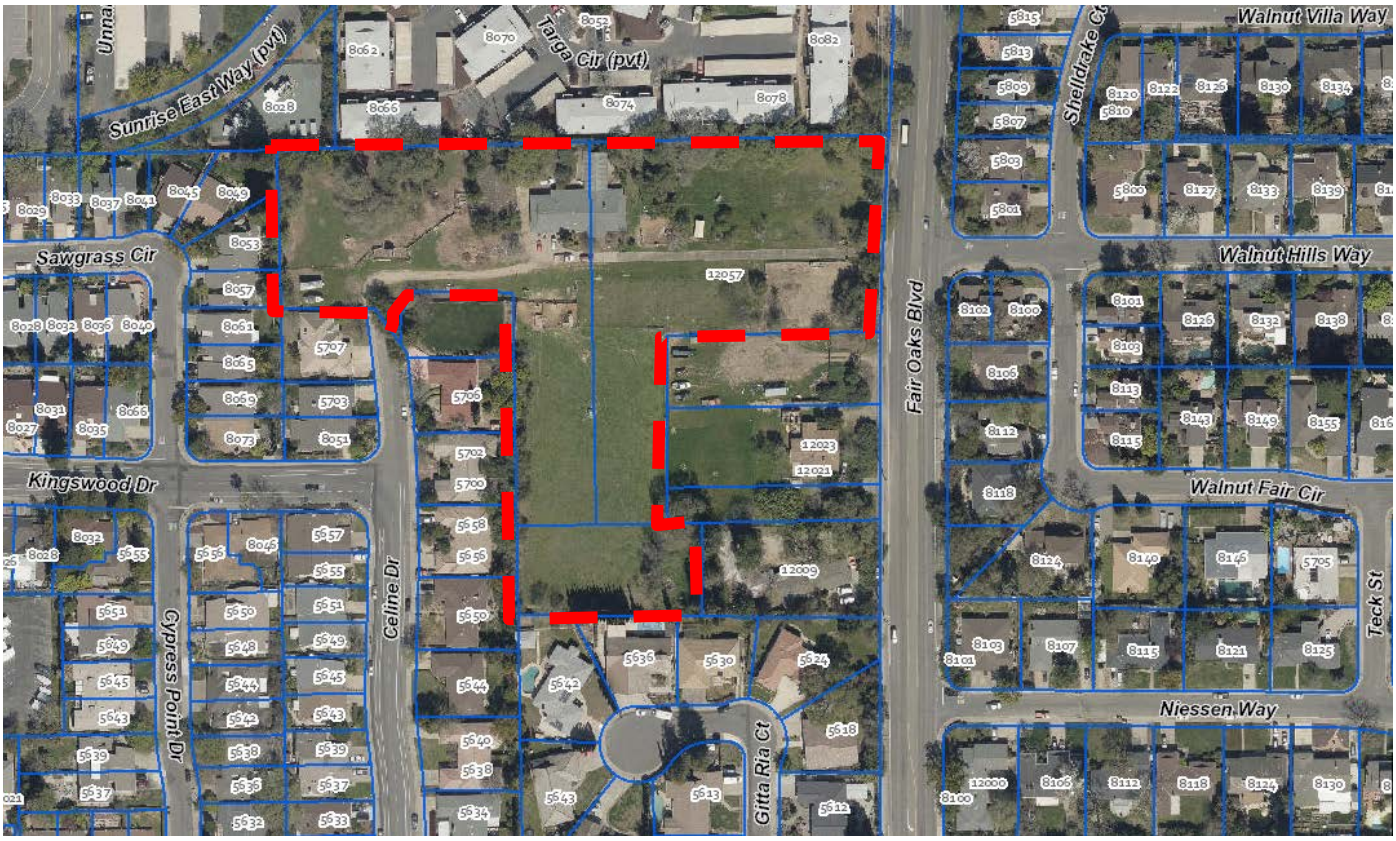
The following provides an overview of the proposed project followed by the Initial Study checklist.

PROJECT OVERVIEW

The project proposes to construct a new, 110 unit affordable senior apartment on a parcel containing an existing single family home and orchard. The project includes a Rezone to change the zoning from RD10 to RD20. The project also requires a Design Review Permit for the apartment as well as concessions and a density bonus and affordable housing agreement related to the affordable housing. The site is within the city of Citrus Heights, which is within the County of Sacramento.

A vicinity map is provided in Figure 1 and Site Plan in Figure 2.

Figure 1 - Vicinity Map



Site Location and Existing Conditions

The site is west of Fair Oaks Boulevard across from Walnut Hills Way. The site consists of 4.95 acres and currently supports an existing single family home, orchard, and related facilities.

The site is comprised of large grassy areas, orchards, and is generally flat. Numerous trees are found within the site including numerous oak trees.

Surrounding Land Uses

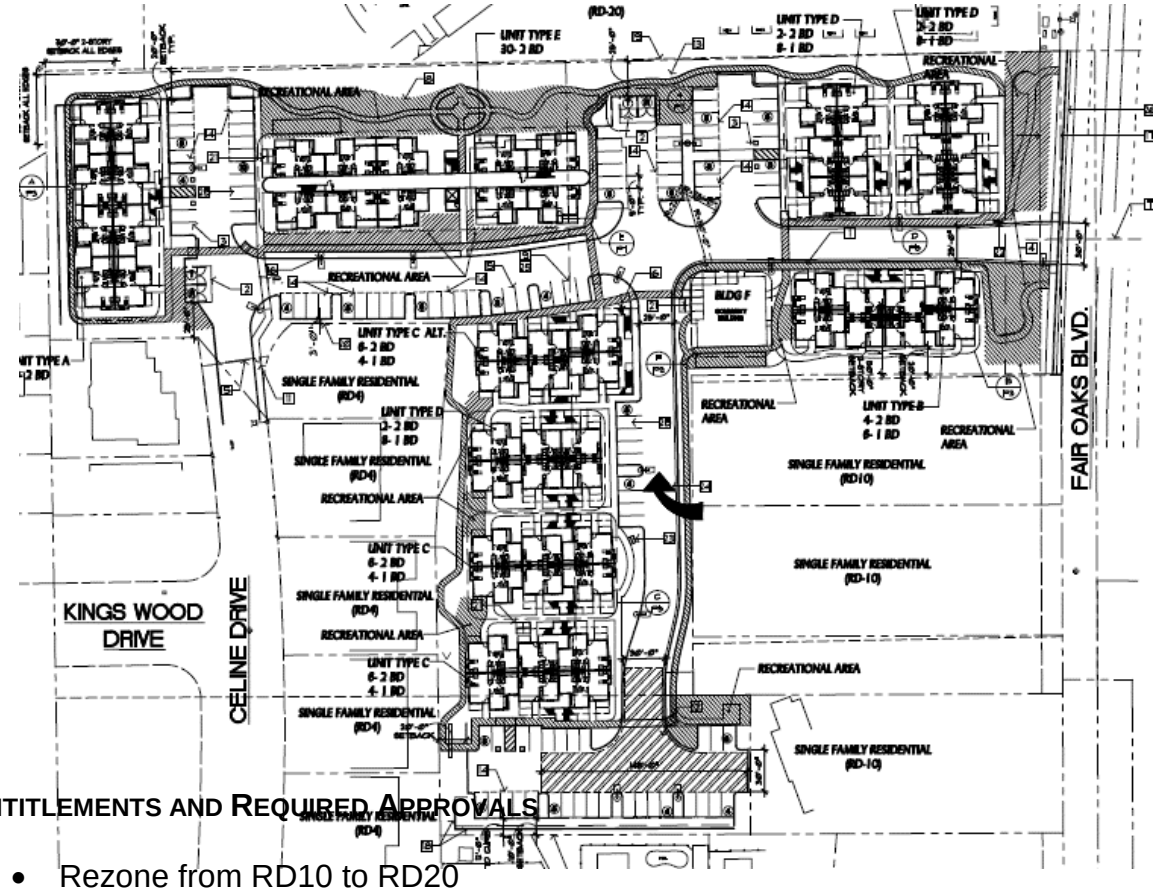
LOCATION	ZONING	GENERAL PLAN LAND USE	ACTUAL USE
On-Site	RD-10	Medium Density Residential	Single Family Home and Orchard
North	RD-20	Medium Density Residential	Apartments
South	RD-4	Low Density Residential	Single Family Homes

LOCATION	ZONING	GENERAL PLAN LAND USE	ACTUAL USE
On-Site	RD-10	Medium Density Residential	Single Family Home and Orchard
East	RD5 (Sacramento County)	Low Density Residential	Fair Oaks Boulevard Single Family Homes
West	RD-10	Medium Density Residential	Single Family Homes and Duplexes

Proposed Development

The applicant requests a Rezone from RD-10 to RD-20 and a Design Review Permit to allow the construction of 110 affordable senior apartments. The project will include a series of open space amenities including a meandering trail, gardens, community club house, dog play area, parking lot and related amenities.The project includes an Affordable Housing agreement to ensure the development is maintained at affordable levels for a minimum of 55 years.

Figure 2 - Proposed Site Plan



ENTITLEMENTS AND REQUIRED APPROVALS

- Rezone from RD10 to RD20
- Design Review Permit
- Building Permits

- Encroachment Permits
- Tree Permit
- Lot Merger
- Affordable Housing Agreement

TECHNICAL STUDIES COMPLETED FOR THE PROPOSED PROJECT

Several technical studies were completed for the project to evaluate the potential environmental impacts associated with proposed project. The following reports referenced throughout this Initial Study are available for review at the City of Citrus Heights.

Environmental Noise Analysis. Bollard Acoustical Consultants, January 2019

Arborist Report. Acorn Arboricultural Services, Inc. August 2019

Biological Resources Assessment, Foothill Associates, February 2019

Traffic Impact Study. Kimley Horn, July 2019

Phase 1 Environmental Site Assessment Report. Partner Engineering and Science, April 2019

II. ENVIRONMENTAL CHECKLIST

Environmental Factors Potentially Affected by the Project: The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics		Agricultural and Forest Resources	X	Air Quality
	Biological Resources	X	Cultural Resources		Energy
	Geology / Soils		Greenhouse Gas Emissions		Hazards and Hazardous Materials
	Hydrology / Water Quality		Land Use / Planning		Mineral Resources
X	Noise		Population / Housing		Public Services
	Recreation	X	Transportation	X	Tribal Cultural Resources
	Utilities/Service Systems		Wildfire		Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: _____ Date: _____

Printed Name: Casey Kempenaar For: City of Citrus Heights

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

a. A scenic vista is generally defined as an expansive view of a highly valued landscape observable from a publicly accessible vantage point. In the project vicinity, publically accessible vantage points are limited to public roads. Views along Fair Oaks Boulevard are of the existing development present in the area. There are no long-range views of scenic vistas available in the project vicinity. As the project site does not contribute to any scenic vistas, the proposed project would have no impacts to any scenic vistas.

b. Scenic resources are physical features that provide scenic value to a project site and its surroundings. These typically include topographic, geologic, hydrologic, and biological resources (for example, hills, rock outcroppings, creeks, woodlands or landmark trees).

The site does not provide substantial scenic resources. There are no state-designated or eligible scenic highways or routes in the project vicinity.

c. The site is located in an area of primarily residential uses. The site is located between existing apartments and existing single family homes and duplexes. The site is a short distance away from the Sunrise Mall. The design of proposed apartments was reviewed for consistency with the city's design guidelines. The project would not cause a detriment to the visual identity and character of surrounding land uses, and this impact would be less than significant. Although the proposed apartments will be visible from surrounding roadways, there are no identified scenic resources within the city.

d. The apartment will include new exterior lighting. The project is conditioned to provide exterior lighting which is shielded and directed downwards to ensure that light does not spill onto neighboring properties or adversely affect nighttime views. This would ensure that the project would result in less than significant impacts associated with project site lighting.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

2. AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement Methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				X

a.–b. The proposed project site is located in an urban area and is currently vacant. The site is identified as Urban and Built-Up Land by the California Department of Conservation and is not designated as prime farmland, unique farmland, or farmland of statewide importance. Further, the project site is not under a Williamson Act contract (Department of Conservation 2012). Although there is an existing orchard on-site, the orchard is not used for commercial purposes.

The site is not planned for or used for any commercial agricultural purposes. The construction of the proposed project would not result in the conversion of any agricultural land, conflict with any agricultural use, or conflict with a Williamson Act contract.

c.–d. The project site is not zoned as forest land, does not contain forest land or forest resources, and does not support any forest uses. The construction of the proposed project would not result in the conversion of any forest land to a non-forest use.

e. As discussed above, the site is located an in urban area and does not support any farmland, agricultural, or forest uses. Construction of the proposed project at the project site would not

result in conversion of any farm, agricultural, or forest land to non-agricultural or non-forest uses.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?		X		
b) 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?		X		
c) Expose sensitive receptors to substantial pollutant concentrations?		X		
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?			X	

a.– c. The project site is located within the Sacramento Valley Air Basin (SVAB) and is under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD).

The federal and state Clean Air Acts define allowable concentrations of several air pollutants. When monitoring indicates that a region regularly experiences air pollutant concentrations that exceed those limits, the region is designated as non-attainment and is required to develop an air quality plan that describes air pollution control strategies to be implemented to reduce air pollutant emissions and concentrations.

The SVAB is designated as non-attainment for federal and state ozone standards. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of reactive organic gases (ROG) and oxides of nitrogen (NOx) in the presence of sunlight. ROG are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NOx are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels.

The SVAB is also designated non-attainment for the state respirable particulate matter (PM10) standards, and the federal 24-hour standard for fine particulate matter (PM2.5). Particulate matter consists of small particles of pollutants, such as windblown dust, particles of smoke from

residential and agricultural burning, and particles generated by fuel combustion in motor vehicles, equipment and industrial sources.

As directed by the SMAQMD CEQA Guide to Air Quality Assessment (CEQA Guide), this analysis considers that the project would result in a significant impact if it results in any of the following conditions:

- short-term (construction) emissions of NOx above 85 pounds per day;
- long-term (operational) emissions of NOx or ROG above 65 pounds per day

If emissions remain below these levels, SMAQMD has determined that the project would not violate air quality standards for NOx, ROG, PM10 or PM2.5, would not contribute substantially to an existing or projected air quality violation or interfere with implementation of the applicable clean air plans, and would not result in a cumulatively considerable net increase of any criteria pollutant for which the project area is in non-attainment.

Construction Emissions

Due to the size of the project at 4.95 acres, short-term construction emissions of ROG, NOx, PM10, and diesel particulate matter DPM would not exceed the SMAQMD threshold of 85 pounds per day of NOX. The SMAQMD CEQA Guide indicates that "projects that are 35 acres or less in size generally will not exceed the District's construction NOx threshold of significance," therefore, construction of the proposed project would result in a less-than-significant impact as long as the SMAQMD's Basic Construction Emission Control Practices are implemented, as required by Mitigation Measure 1.

Operational Emissions

Operational emissions would be generated from vehicle trips to and from the project area, heating and cooling of the residences, water heaters, and landscape maintenance. The SMAQMD contains operational-related criteria air pollutant emission screening thresholds for residential development projects. Projects that do not exceed the operational-related air quality screening emissions threshold would not be expected to have a substantial impact on air quality. The proposed project consists of the development of a 110 unit Senior Apartment project. The operational air quality emission screening threshold for apartments is 682 dwelling units. The proposed project is well below the SMAQMD screening threshold and the proposed project would not:

- Include wood stoves or wood-burning appliances;
- Generate a trip generation rate greater than the default trip rate in CalEEMod;
- Generate a vehicle fleet mix substantially different from the average fleet mix;
- Include mixed-use development; or
- Include any industrial land use types.
- Therefore, the project would be expected to have an insignificant impact on air quality, including ROG and NOx emissions, during operation

d. **Sensitive Receptors**

During project construction, the majority of emissions would be generated by the use of construction equipment on-site. Construction emissions would remain below the SMAQMD thresholds of significance and the emission of air pollutants at the project site would not occur in volumes that are great enough to result in substantial pollutant concentrations at the neighboring land uses. Therefore, the project would have a less-than-significant impact related to exposure of people to substantial pollutant concentrations during project construction.

Some objectionable odors may be generated from the operation of diesel-powered construction equipment during the construction period. However, these odors would occur only during the construction activities and would not result in a long-term or permanent impact. Therefore this impact is considered less than significant.

Mitigation Measures

Mitigation Measure 1:

Prior to commencement of grading and/or building construction, the City of Citrus Heights shall ensure that site plan notes include requirements for the contractor to implement the following Basic Construction Emission Control Measures:

A. All exposed surfaces shall be watered two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

B. Haul trucks transporting soil, sand, or other loose material on the site shall be covered and/or shall maintain at least two feet of free board space. Any haul trucks that would be traveling along freeways or major roadways shall be covered.

C. Wet power vacuum street sweepers shall be used to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.

D. Vehicle speeds on unpaved areas to shall be limited to a maximum of 15 miles per hour.

E. All roadways, driveways, sidewalks, parking lots to be paved shall be completed as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
4. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				X
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		X		
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

A Biological Resources Assessment was prepared by Foothill Associates in February 2019. The BRA identified the following known or potential protected resources on the site:

- Potential habitat for special-status plants including Ahart's dwarf rush, dwarf downingia, Red Bluff dwarf rush, Brandegee's clarkia;
- Potential roosting and foraging habitat for pallid bat and silver-haired bat;

- Potential nesting and foraging habitat for special-status birds including Swainson's hawk, Cooper's hawk, Lewis' woodpecker, merlin, Nuttal's woodpecker, oak titmouse, purple martin, white-tailed kite, and yellow-billed magpie;
- Potential habitat for other migratory birds and other birds of prey protected by the MBTA California Fish and Game Codes;
- Potential habitat for special-status invertebrates including andrenid bee
- Protected oak trees.

a. –d. The proposed project site is in an urban setting on a partially developed site. The Biological Resources Assessment identified the potential habitat for roosting and foraging habitat for pallid bat and silver-haired bat; potential nesting and foraging habitat for special-status birds including Swainson's hawk, Cooper's hawk, Lewis' woodpecker, merlin, Nuttal's woodpecker, oak titmouse, purple martin, white-tailed kite, and yellow-billed magpie; potential habitat for other migratory birds and other birds of prey protected by the MBTA California Fish and Game Codes; potential habitat for special-status invertebrates including andrenid bee on the site.

Mitigation Measures 2, 3, and 4 require pre-construction surveys to determine if any of the protected species exists at the time of construction. If these species are present, the applicant is required to follow the mitigation to either avoid impact to the protected species or relocate the species based on the biologists recommendations at the time of the survey.

Mitigations Measures 2, 3, and 4 will reduce the potential impact to less than significant.

e. Numerous trees that are protected under the City of Citrus Heights Tree Preservation and Protection Ordinance occur on the project site. Fifty trees (941-inches DBH) are proposed to be removed with the project. Of those 50 trees, 16 are recommended for removal by the arborist due to health/structural problems, and 34 are proposed for removal as a result of development of this site. In addition to the trees proposed for removal, an estimated 29 other trees will be impacted by development through encroachments (construction activity) occurring within their dripline.

As indicated in the Tree Impact Assessment, the following 16 protected trees (554-inches DBH) are proposed for removal due for health reasons:

24057, 24058, 24068, 24069, 24078, 24083, 24086, 24088, 24089, 24090, 24091, 24131, 24132, 24133, 24135, 24136

As indicated in the Tree Impact Assessment, the following 34 protected trees (387-inches DBH) are proposed for removal due the development of the properties (public improvements and home construction):

24028, 24037, 24038, 24046, 24051, 24052, 24053, 24056, 24059, 24061, 24062, 24064, 24066, 24067, 24075, 24092, 24093, 24094, 24095, 24096, 24097, 24121, 24123, 24124, 24126, 24127, 24129, 24145, 24157, 24161, 24162, 24163, 24164, 24167.

Mitigation Measure 5 requires that the applicant submit a Tree Protection and Replacement Plan in order to preserve remaining trees and to mitigate the loss of protected trees. Furthermore, in conjunction with the improvement plans the applicant is required to submit a Final Tree Impact Assessment to ensure proper tree protection and mitigation.

Therefore, the proposed project would be consistent with the city's Tree Preservation and Protection Ordinance and would have less than significant impacts to protected tree.

f. No Impact. The project site is not within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other habitat conservation plan (CDFW 2013).

Mitigation Measures

Mitigation Measure 2:

Prior to any activity occurring on the site, a qualified botanist shall conduct a pre-construction survey for Non-listed special-status species include Ahart's dwarf rush (blooms March to May), dwarf downingia (blooms March to May), Red Bluff dwarf rush (blooms March to June), and Brandegee's clarkia (blooms May to July). One focused plant survey conducted in May will satisfy the blooming periods for all four plants. If no special-status plants are observed, the botanist should document the findings in a letter report and no additional measures are recommended.

If any of the non-listed special-status plants are identified within areas of potential construction disturbance, they should be avoided to the greatest extent feasible. If the plants cannot be avoided, the plants and/or the seedbank should be transplanted to a suitable habitat near the project site. If non-listed special status plants are found during the recommended botanical surveys, a qualified biologist should prepare an avoidance and mitigation plan detailing protection and avoidance measures, transplanting procedures, success criteria, and long-term monitoring protocols. In addition, a pre-construction worker awareness training should be conducted alerting workers to the presence of and protections for special-status plants.

Mitigation Measure 3:

A qualified biologist should conduct a pre-construction survey for special-status bat species, including pallid bat and silver haired bat, within 14 days prior to ground disturbing activities including vegetation clearing, removal of trees (if applicable), and grading operations. This can be conducted in combination with a pre-construction nesting bird survey if needed. If no bats are observed, a letter report should be prepared to document the survey, and no additional measures are recommended. If construction does not commence within 14 days of the preconstruction survey, or halts for more than 14 days, an additional survey is required prior to starting work.

If special-status bats are present and roosting on or within 100 feet of the proposed project footprint, then the biologist should establish an appropriate buffer around the roost site prior to construction. At a minimum, no trees should be removed until the biologist has determined that the bat is no longer roosting in it. Additional mitigation measures for bat species, such as installation of bat boxes or alternate roost structures, would be recommended only if special status bat species are found to be roosting within the proposed project area. In addition, a preconstruction worker awareness training should be conducted alerting workers to the presence of and protections for various bat species.

Mitigation Measure 4:

If construction activities within the Study Area begin during the nesting season (February 15 to August 31), a qualified biologist should conduct a pre-construction survey of the project footprint, where accessible, for active nests. Additionally, the surrounding 500 feet should be surveyed for active raptor nests, where accessible. Binoculars may be needed in order to survey areas outside of the Study Area and to remain within the property boundaries. The preconstruction survey should be conducted within 14 days prior to commencement of grounddisturbing activities. If the pre-construction survey shows that there is no evidence of active nests, a letter report should be prepared to document the survey, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional survey is required prior to starting work.

If nests are found and considered to be active, the project biologist should establish buffer zones to prohibit construction activities and minimize nest disturbance until the young have successfully fledged or a qualified biologist determines that a nest is no longer active. Buffer width will depend on the species in question, surrounding existing disturbances, and specific site characteristics, but may range from 20 feet for some songbirds to 250 to 500 feet for most raptors. If active nests are found within any trees slated for

removal, then an appropriate buffer should be established around the trees and the trees should not be removed until a biologist determines that the nestlings have successfully fledged or has otherwise determined that the nest is no longer active. In addition, a pre-construction worker awareness training should be conducted alerting workers to the presence of and protections for the active avian nests.

If construction activities begin during the non-breeding season (September 1 through February 14), a survey and training is not required and no further studies are necessary.

Mitigation Measure 5:

Prior to construction of the project, the applicant shall prepare a Tree Protection and Replacement Plan that addresses each onsite tree that is protected under the city's Tree Preservation and Protection Ordinance. The Tree Protection and Replacement Plan shall generally be consistent with the Preliminary Site Plan included as Figure 2 of this IS/MND and shall identify any additional tree removal resulting from the construction of site infrastructure necessary to develop the Project consistent with the Preliminary Site Plan. The Tree Protection and Replacement Plan shall provide for appropriate protection measures for any trees (that qualify as protected under the city's ordinance) to be retained onsite and replacement of trees (that qualify as protected under the city's ordinance) to be removed. Replacement of trees shall meet the following standards.

A. The number and size of newly planted trees shall be calculated based upon an inch for an inch replacement of the diameter breast height (DBH) of the removed trees where a 15 gallon tree will replace one inch DBH of the removed tree; a 24 inch box tree will replace two inches, and a 36 inch box tree will replace three inches. The replacement trees shall have a combined diameter equivalent to not less than the total diameter of the trees removed.

B. One or a combination of methods may be used, including replacement, relocation, or payment of in-lieu mitigation fees. The preferred alternative is on-site replacement.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
5. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

a. – c. The California Environmental Quality Act (CEQA) applies to all discretionary projects undertaken or subject to approval by the state's public agencies. CEQA states that it is the policy of the State of California to "take all action necessary to provide the people of this state with… historic environmental qualities… and preserve for future generations examples of the major periods of California history". Under the provisions of CEQA, "A project with an effect that may cause a

substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment".

CEQA requires that historical resources and unique archaeological resources be taken into consideration during the CEQA planning process. If feasible, significant impacts to historical resources must be avoided or the severity of the impacts mitigated. CEQA requires that all feasible mitigation be undertaken even if it does not mitigate impacts to a less-than-significant level.

The project site has no known historic, archaeological, or paleontological resources or human remains onsite. The City of Citrus Heights complied with Public Resources Code (PRC) Section 21080.3.1, a formal consultation process for California tribes as part of the CEQA process. The city consulted with the United Auburn Indian Community after the tribe requested consultation. UAIC has found that there will be no significant impacts to any known tribal cultural resources.

It is unlikely that previously unknown cultural resources would be encountered during grading of the site. Implementation of Mitigation Measure 3 would ensure that impacts to cultural resources remain less than significant should any such resources be encountered during project grading and construction.

Mitigation Measures

Mitigation Measure 6 (Cultural):

If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for pre-contact and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead agency, the City of Citrus Heights, and applicable landowner. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work may not resume within the no-work radius until the lead agency, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Sacramento County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the Public Resources Code).

This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agency, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
6. Energy. Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

a. Construction would comply with all relevant energy-related regulations by conserving energy and natural resources to the extent feasible. The energy demands due to diesel and gasoline use during construction would be small relative to statewide and local demands for fuel use. The energy consumption during project construction would be commensurate with typical construction projects and would not use energy wastefully or inefficiently. Therefore, the temporary short-term consumption energy consumption impacts due to construction are considered less than significant.

Overall, the proposed project would result in an increase in energy consumption, with the project requiring a vehicle trips to/from project site, on-site electricity consumption, and on-site natural gas consumption. The demand for housing and retail development in the project area demonstrate that the energy consumption of the proposed residences would not be unnecessary. Therefore, impacts related to wasteful, inefficient, or unnecessary energy consumption would be less than significant

b. The project does not conflict with any state or local plan for renewable energy. As discussed previously, the project is required to comply with the city's Greenhouse Gas Reduction Plan as evidenced through the Greenhouse Gas Checklist, which reduces energy consumption below business as usual. No Impact is anticipated.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
7. GEOLOGY AND SOILS. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including				X

the risk of loss, injury, or death involving: i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? ii. Strong seismic ground shaking? iii. Seismic-related ground failure, including liquefaction? iv. Landslides?				
b) Result in substantial soil erosion or the loss of topsoil?				X
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X

a & c. **Surface Fault Rupture**

There are no active faults within or near the City of Citrus Heights; the project site is not within an Alquist-Priolo Earthquake Fault Zone as delineated by the State Geologist. The closest active fault mapped by the California Division of Mines and Geology is the Foothills Fault Zone about 15 miles to the northeast of the city (City of Citrus Heights 2011b, p. 4-5).

Seismic Shaking

The proposed project is required to comply with the California Building Code which includes requirements for site improvements and building design to ensure project features would withstand the likely level of seismic groundshaking anticipated for the site. This would reduce any impacts related to groundshaking from distant seismic events to a less-than-significant level.

Liquefaction and Landslides

Seismic Hazard Zones are areas delineated by the State Geologist as areas of liquefaction and landslide hazards. There are no Seismic Hazards Zones identified within the City of Citrus

Heights (City of Citrus Heights 2011b, pg. 4-5). Compliance with the California Building Code would reduce any minor potential for liquefaction or landslides to a less-than-significant level. As noted in the City of Citrus Heights General Plan EIR, the City of Citrus Heights planning area has not been identified as having liquefaction potential. “The depth to the water table and the underlying geologic materials within the planning area do not support high liquefaction potential.”

Geologic and Soil Instability

The General Plan identified the soil underlying the project site as Urban Land-Xerarents-Fiddyment complex. This soil is considered stable and has a low potential for landslide, lateral spreading, subsidence, liquefaction, and/or collapse. As required by chapter 18 of the California Building Code (CBC) and Chapter 18.12 of the City of Citrus Heights Municipal Code, the project’s preliminary soil report and geotechnical report must evaluate whether there are expansive soils on-site and provide recommendations for design of the site improvements and building to avoid adverse effects related to expansive soils, if present.

b. The project will require grading of the site. This soil disturbance could result in soil erosion. The site does not support unique geologic or soil resources, so soil erosion is considered a less than significant impact with respect to Geology and Soils.

d. Urban Land-Xerarents-Fiddyment complex soil that underlies the project site has a moderate potential for expansion. As noted in the City of Citrus Heights General Plan EIR, “Expansive or shrink-swell soils contain substantial amounts of clay minerals that swell when wet and shrink when dry. These clays tend to swell despite the heavy loads imposed by large structures. Damage (such as cracking of foundations) results from differential movement and from the repetition of the shrink-swell cycle. Shrinking and swelling of soil can damage roads, dams, building foundations, and other structures. In some cases, this problem may be avoided by removing the top soil layer before placing a foundation” (City of Citrus Heights 2011b). The potential for the site to contain expansive soil is low. In compliance with the City of Citrus Heights General Plan Policy 50.2, a soils report that identifies potential for liquefaction, expansive soils, ground settlement, and slope failure will be required for the project site. In accordance with Policy 50.2, this report would also specify remedial measures that could be feasibly implemented to ensure that project engineering and design appropriately addresses any constraints posed by site soils and geologic conditions (City of Citrus Heights 2011b, p. 4-6). With compliance with the city’s General Plan, potential adverse effects related to expansive soils would be avoided.

e. There are no known septic tanks or alternative wastewater disposal systems on-site and there none proposed.

f. There are no known paleontological resources or unique geologic features on the site. No impact.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
8. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				X

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				X

a. & b. Climate change, which involves significant changes in global climate patterns, has been associated with an increase in the average temperature of the atmosphere near the Earth's surface, or global warming. This warming has been attributed to an accumulation of greenhouse gases (GHGs) in the atmosphere. These GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. GHGs include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2–tetrafluoroethane), and HFC-152a (difluoroethane). While CO2 is the most prevalent GHG, other GHGs have a higher "global warming potential" than CO2. To account for these differences, most GHG analyses convert all GHG emissions to CO2 equivalents (CO2e). The conversion process reflects the relative global warming potential of each individual GHG.

While the greenhouse effect is a naturally occurring process that aids in maintaining the Earth's climate, human activities, such as burning fossil fuels and clearing forests, generate additional GHG emissions which contribute to the greenhouse effect and result in increased average global temperatures. Further, GHGs may have long atmospheric lifetimes (for example, CO2 may remain in the atmosphere for decades or even centuries) ensures that atmospheric concentrations of GHGs will remain elevated for decades. Increasing GHG concentrations in the atmosphere are primarily a result of emissions from the burning of fossil fuels, gas flaring, cement production, and land use changes.

Data indicate that global surface temperatures have increased 0.8°C (1.4°F) in the past century, and 0.6°C (1.1°F) in the past three decades. Temperatures are expected to continue to increase as a result of increasing concentrations of GHGs. The increased temperatures are anticipated to lead to modifications in the timing, amount, and form (rain vs. snow) of precipitation; changes in the timing and amount of runoff; deterioration of water quality; and elevated sea levels. In turn, these changes could be associated with increased flooding and other weather-related events, increased salinity levels in coastal groundwater basins, changes in water supply availability, changes in agricultural activities, changes in the range and diversity of wildlife and vegetation, and changes in conditions related to wildfires.

In 2006, the State of California enacted Assembly Bill (AB) 32, the Global Warming Solutions Act. AB 32 requires reducing statewide greenhouse gas (GHG) emissions to 1990 levels by 2020. Meeting the AB 32 reduction targets will require an approximately 30 percent reduction compared with a "business as usual" scenario. The state's plan for meeting these reduction targets is outlined in the California Air Resource Board's (CARB) Climate Change Scoping Plan (CARB 2008).

CARB's Scoping Plan fact sheet states "This plan calls for an ambitious but achievable reduction in California's carbon footprint – toward a clean energy future. Reducing greenhouse gas emissions to 1990 levels means cutting approximately 30% from business-as-usual emissions levels projected for 2020, or about 15% from today's levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman and child in California down to about 10 tons per person by 2020."

In recognition of the statewide efforts to reduce GHG emissions, the City of Citrus Heights adopted a Greenhouse Gas Reduction Plan concurrent with the City's 2011 General Plan update process. According to the General Plan EIR, the single largest source of greenhouse gas emissions within the City of Citrus Heights is from on-road mobile sources (automobiles, trucks,

etc.) and for government sources, the largest source was related to employee commutes (City of Citrus Heights General Plan EIR, 2011).

The Greenhouse Gas Reduction Plan was adopted pursuant to a detailed analysis of potential project impacts under CEQA. The City of Citrus Heights has determined that projects that are consistent with the adopted Greenhouse Gas Reduction Plan would have a less than significant impact with regard to the project's GHG emissions and contributions to climate change.

As described above, the Project would implement the Greenhouse Gas Reduction Plan by incorporating the following measures into the building and site design:

- Utilize recycled materials in construction
- Utilize Energy Star appliances
- Reduce turf installation/drought tolerant landscaping
- Maximize site improvements that promote infiltration and minimize impervious surfaces
- Install disconnected rain gutters that will discharge into landscaped areas

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
9. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ miles of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a				X

	safety hazard for people residing or working in the project area?				
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

a. – b. Less than significant. According to the Phase 1 Site Assessment (Partner, 2019) there are no known hazards on the site. According to the Phase 1 Site Assessment, the existing home could potentially expose workers or others to asbestos, lead paints, or other hazardous building materials. Demolition of the existing structures requires a building permit from the Citrus Heights Building Division. The demolition of the structure will require approval from Sacramento Metropolitan Air Quality Management District which will require appropriate removal of potentially hazardous materials. There are no other hazardous materials release sites on or in the vicinity of the project site.

Construction of the proposed project would involve temporary use of hazardous materials, including fuel for construction equipment, paints, solvents, and sealants. Handling of these materials would be performed in accordance with construction Best Management Practices, so no impact would result.

c. The proposed project is located within one-half mile of St. Marks Lutheran School however, no impacts related to release of hazardous materials would result as part of the project.

d. No Impact. The project site is not listed in any federal, state, or local records and is not included on the Department of Toxic Substance Control's site cleanup list. Thus, proposed project would not result in a significant hazard to the public or to the environment.

e. No impact. The project site is located over eight miles from the nearest airport, McClellan Airfield. The proposed project would therefore not result in a safety hazard relating to proximity to an airport.

f. No impact. The project would not interfere with any adopted emergency or evacuation plans.

g. No impact. The project site is considered urban and the construction will meet the standards of the Building Code and Fire Code. The project site is not located adjacent to any wildlands, and development of this site would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

10. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) Result in substantial erosion or siltation on- or off-site; (ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; (iv) Impede or redirect flood flows?			X	
d) In flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?				X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

a. & e. While the project would incrementally increase the amount of impervious surface at the project site, and the project includes adequate drainage facilities consistent with the Sacramento Stormwater Quality Partnership therefore would not change hydrologic patterns in the area, construction and operation of the proposed project could introduce pollutants and sediment into stormwater runoff from the site.

Construction Effects

The proposed development of the 4.95 acre project site would involve typical construction activities including demolition, grading, material storage and stockpiling, paving, and building construction. Sediment created by soil disturbance during or immediately after site grading would have the potential to affect water quality. Surface water runoff from the site could carry sediment through stormdrains to local waterways. In addition, accidental release of pollutants associated with construction could also degrade the quality of water runoff from the site and contribute pollution to local waterways. Construction activities would include the use of gasoline and diesel-powered heavy equipment, such as bulldozers, backhoes, water pumps, and air compressors. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances could be used during construction, and could be released into surface water runoff. Onsite portable toilets would have

the potential to leak or tip over and spill, releasing sanitary waste, bacteria, solids, nutrients, and pathogens into surface water runoff.

The proposed project would be required to comply with the City of Citrus Heights Land Grading and Erosion Control Ordinance, City of Citrus Heights Municipal Code Chapter 18, Article XII. This Ordinance includes the stipulation that a grading and erosion control permit be required for any project resulting in the grading, filling, excavation, storage, or disposal of 50 or more cubic yards of soil or earthly material (City of Citrus Heights Land Grading and Erosion Control Ordinance Sec. 18-348). Compliance with the conditions of the Construction General Permit and the requirements of the Land Grading and Erosion Control Ordinance would further ensure that construction of the proposed project would not result in runoff that is polluted with sediments or other water pollutants.

With implementation of the city grading and erosion control permit, the proposed project construction would comply with the applicable water quality and waste discharge standards and would not otherwise substantially degrade water quality. Thus, hydrology and water quality impacts would remain less than significant during project construction.

Project Operation

The City of Citrus Heights is required to operate under a Municipal Stormwater NPDES Permit to discharge stormwater from the city's storm drain system to surface waters. As stated in the City of Citrus Heights Stormwater Ordinance, the city is a co-permittee under the waste discharge requirements of the County of Sacramento and the cities of Sacramento, Elk Grove, Folsom, and Galt for Storm Water Discharges from Municipal Separate Storm Sewer Systems (Order No. R5-2002-0206). These waste discharge requirements also serve as NPDES permits under the federal Clean Water Act (NPDES No. CA0082597) (City of Citrus Heights Stormwater Ordinance Sec. 98-201). The proposed project would comply with the requirements of the municipal stormwater permit.

As stated in the City of Citrus Heights Stormwater Ordinance, the city is authorized to establish specified performance requirements and requirements for BMPs to minimize post-construction discharge of stormwater pollutants from new development or significant redevelopment. The city is also authorized to implement the development standards plan and to comply with the requirements associated with development standards in the municipal stormwater permit. The Stormwater Ordinance states that the requirements for new development and redevelopment "may include but are not limited to operational BMPs, building material specifications or limitations, site design requirements, signage and marking, and associated maintenance programs or schedules" (City of Citrus Heights Stormwater Ordinance Sec. 98-223).

Conformance with the municipal stormwater permit (NPDES permit #CA0082597) and with any additional BMPs and development standards required by the City would ensure that hydrology and water quality impacts would be reduced to a less than significant level during operation of the proposed project and that the project would not conflict with any water quality standards or waste discharge requirements.

b. According to the city's General Plan, Citrus Heights sits atop the Fair Oaks Geologic Formation which can yield moderate to high quantities of water. Groundwater can be found at depths between 80 feet above mean sea level (msl) to 20 feet below msl and is considered to have good quality in the Citrus Heights area.

Thus, the existing project site does not substantially contribute to groundwater recharge. The proposed project would incorporate LID features and water-conserving building design and equipment to further minimize the project's effects on groundwater. These types of features are required under the General Plan for new development projects (Actions 34.3.B and 62.4.A) the

project would not substantially change the site's contribution to groundwater recharge, and the proposed project would therefore result in a less-than-significant impact to groundwater recharge.

c. Construction and operation of the project would not be expected to result in changes to the existing drainage pattern of the site or the surroundings areas or increase the rate or amount surface runoff.

The City of Citrus Heights Stormwater Ordinance, Municipal Code Section 98-223 authorizes the city to establish required BMPs to minimize the long-term, post-construction discharge of stormwater pollutants. The ordinance states that these BMP requirements may be included in development standards, building codes, building permits, conditions of development, or other appropriate instruments administered by the city. Compliance with required BMPs as incorporated by the city into the project's permits, development standards, and conditions of approval would ensure that impacts related to an increase in polluted runoff would remain less than significant. Use of BMPs to protect stormwater quality is also recommended in City of Citrus Heights General Plan policies 37.1 and 37.3.

d. No Impact. The project site is physically removed from any large body of water and is not subject to inundation by seiche, tsunami, or mudflow. No impacts related to inundation by seiche, tsunami, or mudflow would occur and no risk for pollutants associated with these actions is likely to occur.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
11. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?			X	
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

a.-b. Less than Significant. The proposed project would result in a change from a single family home into a senior apartment. The site is situated between existing apartments and single family homes and duplexes. Both the existing and proposed zoning allow the construction of apartments. This minor change would not physically divide the existing neighborhood. The proposed rezone from RD10 to RD20 is consistent with the Medium Density Residential Land Use, therefore, the proposed project would not conflict with the City of Citrus Heights General Plan.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
12. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (V.1a)				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? (V.1a)				X

a. – b. The project site is designated Medium Density Residential by the City of Citrus Heights General Plan.

There are no known mineral resources within the project site and no mineral recovery activities have been known to occur onsite. Construction of the project and landscaping at the project site would not adversely affect any mineral resources of value to the state or region so there is no impact.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
13. NOISE: Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?		X		
b) Generation of excessive ground borne vibration or ground borne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose				X

people residing or working in the project area to excessive noise levels?				

a.. An Environmental Noise Assessment for the proposed project was prepared by Bollard Acoustical Consultants. The Environmental Noise Assessment is available for review at the City of Citrus Heights.

The Environmental Noise Assessment determined that, with mitigation, the project would comply with the city's noise thresholds. The Environmental Noise Assessment provides two mitigation measures that result in reducing the potential noise impacts to less than significant levels.

b. Limited groundborne vibration may occur during project construction but would not occur during project operation. Substantial levels of groundborne vibration and noise are associated with the use of physically forceful or ground-penetrating equipment during construction. Construction of the proposed project would not require such activities. Any groundborne vibration that occurs during construction would not create excessive disturbance or physical damage to neighboring land uses and impacts from groundborne vibration would remain less than significant.

Construction of the proposed project would require a variety of equipment, such as graders, backhoes, pavers, heavy trucks, cranes, and air compressors. These types of construction equipment generate noise levels in the range of 75 to 90 dBA at a 50-foot distance from the source. Typical operating cycles may involve two minutes of full power, followed by three or four minutes at lower levels. The City of Citrus Heights limits demolition and construction hours to between 7:00 a.m. and 8:00 p.m. on weekdays and between 8:00 a.m. and 8:00 p.m. on weekends. This precludes demolition and construction activities from occurring during noise-sensitive hours. With these time restrictions, impacts associated with temporary demolition and construction noise would be less than significant.

c. No Impact. The closest airport is Mather Airport located approximately 13 miles from the project site, while McClellan Airfield is located approximately 8 miles from the project site. The project site is not exposed to substantial noise levels associated with air traffic.

Mitigation Measures

Mitigation Measure 7 (Noise):

The following measures should be incorporated into the project:

- Prior to issuance of Certificate of Occupancy, demonstrate that the two buildings nearest to Fair Oaks Boulevard north, east, and south facing facades maintain minimum window and door assembly STC ratings of 32.

Mitigation Measure 8 (Noise):

To the maximum extent practical, the following measures should be incorporated into the project construction operations:

- Noise-generating construction activities shall not occur within the hours identified in Noise Ordinance Section 34-88(5).
- All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition.
- All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.

- Electrically powered equipment shall be used instead of pneumatic or internal combustion-powered equipment, where feasible.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
- Project area and site access road speed limits shall be established and enforced during the construction period.
- Nearby residences shall be notified of construction schedules so that arrangements can be made, if desired, to limit their exposure to short-term increases in ambient noise levels.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
14. POPULATION AND HOUSING. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

a. The project would result in the construction of a new 110-unit affordable senior apartment. The proposed development would lead to an indirect increase in employment in the region (as the new residents conduct their personal business – such as shopping and eating out – within the city).

The addition of the proposed project to the city will result in an increase of residential population; however, the increase is consistent with the assumptions made in the General Plan; therefore there is no impact.

b. The site is currently home to an existing vacant single family home. No housing or residents would be displaced by the proposed project.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
15. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or need for new or physical altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
a) Fire protection?				X
b) Police protection?				X
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

a-e. The project would result in the construction of a new apartment consisting of 110 units. This minor increase in the number of people living and working in the city would not result in the need for new fire or police protection.

The project will be required to pay necessary impact fees such as Park Impact Fees, School Fees, and Road Impact Fees.

No additional public facilities would be required as a result of the proposed project; therefore, no impacts to public facilities would occur.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
16. RECREATION. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Include recreational facilities or require the construction or expansion of recreational facilities which might				X

have an adverse physical effect on the environment?				

a. – b. As discussed previously, the proposed project would not substantially increase the residential population of the city and would therefore not cause an increase in use of existing neighborhood and regional parks. The proposed project would not include or require recreational facilities or the expansion of existing facilities. The project is required to contribute Park Impact fees to contribute to the Parks District. The project would thus have no impact on recreational facilities.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
17. TRANSPORTATION. Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?		X		
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?		X		
c) Substantially increase hazards due to a geometric design feature (for example, sharp curves or dangerous intersections) or incompatible uses (for example, farm equipment)?			X	
d) Result in inadequate emergency access?				X

a. The development of a Senior Affordable Multi-Family project is consistent with the General Plan and proposed Zoning of RD-20 for the project location. The Traffic Impact Study has determined that the project would marginally increase level of traffic; however, the impact would be consistent with the General Plan and determined to be less than significant.

The proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, as discussed below.

Transit

Transit service within the study area is provided by fixed-bus routes on Greenback Lane and Sunrise Boulevard and SMART Ride operated by Sacramento Regional Transit (RT). The project will not impact the operations of Transit. No Impact.

Bicycle

Class II bike lanes (on-street with appropriate signing and striping) currently exist along Fair Oaks Boulevard. The Citrus Heights Bikeway Master Plan (2015) outlines goals, policies, and implementation actions to create and maintain appropriate bicycle infrastructure to enhance regional connectivity.

The project site is served by existing Class II bike lanes which will be maintained after the project as well. No Impact.

Pedestrian

Existing sidewalk exists just north of the project site on Fair Oaks Boulevard and connects north toward Greenback Lane. Sidewalk is also present at the property boundary on Celine Drive which provides connection to Kingswood Drive and ultimately Sunrise Boulevard. The project frontage along Fair Oaks Boulevard is lacking sidewalk, however, the project will install sidewalk as part of the required public improvements. South of the project, there is approximately 350' gap of sidewalk along Fair Oaks Boulevard.

The project would not disrupt existing or planned transit facilities or conflict with adopted city transit plans, guidelines, policies, or standards relative to transit. The project would not add bicycle trips to a bicycle facility that does not meet current design standards and the project provides pedestrian connections between the site and adjacent residential streets. For these reasons, the proposed project impacts to transit, bicycles and pedestrian facilities are considered less than significant.

Project Construction

Construction of the proposed project would generate a variety of truck and employee trips during construction. Construction staging and lane closures could cause adverse effects if not carefully planned. Thus, the project could potentially cause a temporary but prolonged impact due to lane closures, need for temporary signals, traffic hazards to bikes/pedestrians, damage to roadbeds, or truck traffic on roadways not designated as truck routes. For these reasons, impacts during construction are considered potentially significant. Mitigation Measure 9 requires preparation of a construction traffic management plan to ensure that potential effects of construction traffic on public streets are minimized and a high level of safety for all roadway users is maintained.

b. No Impact. The proposed project is consistent with the assumptions included in the Citrus Heights General Plan and associated EIR. The project is accessible to transit along Greenback Lane and Sunrise Boulevard and considered infill development not resulting in a significant increase in Vehicle Miles Traveled beyond the assumptions in the General Plan.

c. With respect to safety considerations, the General Services Department reviewed the proposed site plan and adjacent conditions. The proposed driveway access will allow for safe ingress to both Fair Oaks Boulevard and Celine Drive. As a result, the impact will be less than significant.

d. The proposed project would not result in inadequate emergency access during construction as access to the site during construction will be from Fair Oaks Boulevard. Upon completion of the project, access to the site will be accessible from Fair Oaks Boulevard and gated access to Celine Drive. For these reasons, impact to emergency vehicle access is considered less than significant.

Mitigation Measures

Mitigation Measure 9 (Traffic):

The applicant shall submit a Construction Traffic Management Plan (plan) to minimize traffic impacts to public streets and maintain a high level of safety for all roadway users. The plan shall include items such as: the number and size of trucks per day, expected arrival/departure times, truck circulation patterns, location of truck staging areas, employee parking, and the proposed use of traffic control/partial street closures on public streets. The City of Citrus Heights shall ensure that the plan has been developed and approved by the city's General Services Division prior to commencement of grading or construction for the project. Construction Access to Celine Drive shall be limited to the roadway improvements and utility connections to Celine Drive. All other construction access shall be via Fair Oaks Boulevard.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
18. Tribal Cultural Resources. Would the project:				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as de3fined in Public Resources Code section 5020.1(k), or			X	
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe			X	

As described above in the Cultural Resources section, letters describing the proposed Project and maps depicting the Project Area were mailed to the NAHC, and tribal outreach was conducted to identify sites of Native American interest or concerned that could be impacted by the proposed Project, as well as to solicit opinions for avoiding or mitigating potential impacts.

United Auburn Indian Community (UAIC) requested formal consultation in response to the city's initial tribal outreach. UAIC determined there was there will be no significant impacts to any known tribal cultural resources and closed the consultation for this project. This email, on August 12, 2019 concluded AB 52 consultation requirements between the city and UAIC.

a & b. As discussed in the Cultural Resources section, no known historical resources are known to existing on the site. In addition, UAIC did not identify specific tribal cultural resources on the site. However, inadvertent discoveries of Cultural or Tribal Cultural Resources may occur. Implementation of Mitigation Measure 6 would reduce any potential impacts to less than significant levels.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
19. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or which could cause significant environmental effects?				X
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c) 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?				X
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				X
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

a-c The proposed project would be served by the Sacramento Regional Wastewater Treatment Plant (SRWTP). The SRWTP meets all applicable wastewater treatment requirements of the Central

Valley Regional Water Quality Control Board. The SRWTP treats an average of about 150 million gallons of wastewater per day, and has the capacity to treat up to 181 million gallons per day (City of Citrus Heights 2011c, p.4.10-8). Wastewater generated from the proposed project would not cause the SRWTP to violate any wastewater treatment requirements. The project's wastewater generation is not expected to adversely affect the SRWTP's ability to meet existing commitments and planned development.

Direct water service to the Project would be provided by Citrus Heights Water District. The project would be served with existing capacity and would not cause the need to expand existing water treatment facilities or obtain new water supplies. The project's water demand is not anticipated to adversely affect existing and planned water supplies provided by Citrus Heights Water District.

The project construction would increase impervious surfaces at the project site; however, the project is designed to comply with the Sacramento Stormwater Partnership design guidance to maintain pre-development drainage levels and would not increase the amount or rate of stormwater runoff from the site.

Electric and gas facilities are provided to the site through. No capacity issues have been identified for these services.

d-e The project would generate solid waste; however, the project proposes recycling measures to reduce waste. Consequently, project-generated waste is not anticipated to adversely affect landfill capacity. During construction activities, all construction waste and debris would be recycled in compliance with the city's Greenhouse Gas Reduction Plan.

The project would comply with federal, state, and local statutes and regulations related to solid waste.

Mitigation Measures

No mitigation measures are necessary.

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
20. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may				X

exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

a-d. The City of Citrus Heights is not located in a Very High Fire Hazard Severity Zone. The project site is therefore not located within land classified as very high severity zones. Therefore there is no impact. (http://www.fire.ca.gov/fire_prevention/fhsz_maps_sacramento accessed 9.16.19).

ENVIRONMENTAL IMPACTS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
21. MANDATORY FINDINGS OF SIGNIFICANCE. Would the project:				
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects.)		X		
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

a. The project site is an urbanized area which is partially developed with a single family home and associated infrastructure. No known sensitive species exist onsite. Mitigation Measure 3 is included in this Initial Study to ensure that the proposed project does not eliminate any important cultural or tribal cultural resources.

b. The analysis provided throughout this Initial Study demonstrates that the project's contribution to cumulative impacts would be reduced to less than significant levels through mitigation. Specifically, Mitigation Measure 1 would ensure the project does not contribute to cumulative air quality impacts, Mitigation Measures 2-5 would ensure the project does not contribute to cumulative impacts to biological resources, and Mitigation Measure 6 would ensure the project does not contribute to cumulative impacts to cultural resources.

c. The analysis provided throughout this Initial Study identifies project impacts that may be potentially significant and identifies mitigation measures that would reduce each impact to a less than significant level, as discussed above.

III. DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	✓
I find that the proposed project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.	
I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	

_____ _____

Signature Date

Casey Kempenaar, Planning Manager

Printed Name and Title

12057 Fair Oaks Blvd
Fair Oaks Affordable Senior Apartments
Mitigation Monitoring and Reporting Program

INTRODUCTION

The California Environmental Quality Act (CEQA) Guidelines Section 15097 requires that whenever a public agency approves a project based on a Mitigated Negative Declaration (MND) or an Environmental Impact Report (EIR), the public agency shall establish a mitigation monitoring or reporting program to ensure that all adopted mitigation measures are implemented.

This mitigation monitoring and reporting program (MMRP) is intended to satisfy this requirement of the CEQA Guidelines as it relates to the 12057 Fair Oaks Boulevard project (proposed project). This MMRP will be used by the City of Citrus Heights staff to ensure compliance with all mitigation measures identified in the MND is achieved during project implementation. The MMRP provides for monitoring of construction activities, as necessary, and in the field identification and resolution of environmental concerns.

MITIGATION MONITORING PROGRAM DESCRIPTION

The City of Citrus Heights will coordinate monitoring activities and document the implementation of mitigation measures for each project phase. Table 1 lists each mitigation measure as identified in the Final MND and the associated implementation, monitoring/reporting, timing and performance requirements. The table includes:

1. the full text of each applicable mitigation measure;
2. the party or parties responsible for implementation and monitoring of each measure and any reporting requirements;
3. the timing of implementation of each mitigation measure, including any ongoing monitoring and/or reporting requirements; and
4. performance criteria by which to ensure mitigation requirements have been met.

Following completion of the monitoring and reporting process, the final monitoring results will be recorded and incorporated into the project file maintained by the City of Citrus Heights.

Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Timing	Performance Evaluation Criteria
Air Quality				
Mitigation Measure 1: Prior to commencement of grading and/or building construction, the City of Citrus Heights shall ensure that site plan notes include requirements for the contractor to implement the following Basic Construction Emission Control Measures: A. All exposed surfaces shall be watered two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. B. Haul trucks transporting soil, sand, or other loose material on the site shall be covered and/or shall maintain at least two feet of free board space. Any haul trucks that would be traveling along freeways or major roadways shall be covered. C. Wet power vacuum street sweepers shall be used to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. D. Vehicle speeds on unpaved areas to shall be limited to a maximum of 15 miles per hour. E. All roadways, driveways, sidewalks, parking lots to be paved shall be completed as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.	Project applicant, contractor	City of Citrus Heights	• Requirements for implementing this measure are identified in site plans and contracts prior to issuance of demolition permits, grading permits, or building permits • Compliance with performance standards must be achieved throughout all construction activities	• Site plans and construction contracts include notes requiring conformance with the performance standards identified in this mitigation measure. • City may conduct unscheduled site visits throughout construction to verify achievement of performance standards

Biological Resources				
Mitigation Measure 2: Prior to any activity occurring on the site, a qualified botanist shall conduct a pre-construction survey for Non-listed special-status species include Ahart's dwarf rush (blooms March to May), dwarf downingia (blooms March to May), Red Bluff dwarf rush (blooms March to June), and Brandegee's clarkia (blooms May to July). One focused plant survey conducted in May will satisfy the blooming periods for all four plants. If no special-status plants are observed, the botanist should document the findings in a letter report and no additional measures are recommended. If any of the non-listed special-status plants are identified within areas of potential construction disturbance, they should be avoided to the greatest extent feasible. If the plants cannot be avoided, the plants and/or the seedbank should be transplanted to a suitable habitat near the project site. If non-listed special status plants are found during the recommended botanical surveys, a qualified biologist should prepare an avoidance and mitigation plan detailing protection and avoidance measures, transplanting procedures, success criteria, and long-term monitoring protocols. In addition, a pre-construction worker awareness training should be conducted alerting workers to the presence of and protections for special-status plants.	Project applicant, contractor	City of Citrus Heights	• Prior to commencing any site grading, tree removal, or any onsite activity.	• Preconstruction surveys are conducted when construction activities begin • Avoid or relocate consistent with the mitigation measure
Mitigation Measure 3: A qualified biologist should conduct a pre-construction survey for special-status bat species, including pallid bat and silver haired bat, within 14 days prior to ground disturbing activities including vegetation clearing, removal of trees (if applicable), and grading operations. This can be conducted in combination with a pre-construction nesting bird survey if needed. If no bats are observed, a letter report should be prepared to document the survey, and no additional measures are recommended. If construction does not commence within 14 days of the preconstruction survey, or halts for more than	Project applicant, contractor	City of Citrus Heights	• Prior to commencing any site grading, tree removal, or any onsite activity.	• Preconstruction surveys are conducted when construction activities begin • Avoid or relocate consistent with the mitigation measure

14 days, an additional survey is required prior to starting work. If special-status bats are present and roosting on or within 100 feet of the proposed project footprint, then the biologist should establish an appropriate buffer around the roost site prior to construction. At a minimum, no trees should be removed until the biologist has determined that the bat is no longer roosting in it. Additional mitigation measures for bat species, such as installation of bat boxes or alternate roost structures, would be recommended only if special status bat species are found to be roosting within the proposed project area. In addition, a preconstruction worker awareness training should be conducted alerting workers to the presence of and protections for various bat species.				
Mitigation Measure 4: If construction activities within the Study Area begin during the nesting season (February 15 to August 31), a qualified biologist should conduct a pre-construction survey of the project footprint, where accessible, for active nests. Additionally, the surrounding 500 feet should be surveyed for active raptor nests, where accessible. Binoculars may be needed in order to survey areas outside of the Study Area and to remain within the property boundaries. The preconstruction survey should be conducted within 14 days prior to commencement of grounddisturbing activities. If the pre-construction survey shows that there is no evidence of active nests, a letter report should be prepared to document the survey, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional survey is required prior to starting work. If nests are found and considered to be active, the project biologist should establish buffer zones to prohibit construction activities and minimize nest disturbance until the young have successfully fledged or a qualified biologist determines that a nest is no longer active. Buffer width will	Project applicant, contractor	City of Citrus Heights	• Prior to commencing any site grading, tree removal, or any onsite activity.	• Preconstruction surveys are conducted when construction activities begin • Avoid or relocate consistent with the mitigation measure

depend on the species in question, surrounding existing disturbances, and specific site characteristics, but may range from 20 feet for some songbirds to 250 to 500 feet for most raptors. If active nests are found within any trees slated for removal, then an appropriate buffer should be established around the trees and the trees should not be removed until a biologist determines that the nestlings have successfully fledged or has otherwise determined that the nest is no longer active. In addition, a pre-construction worker awareness training should be conducted alerting workers to the presence of and protections for the active avian nests. If construction activities begin during the non-breeding season (September 1 through February 14), a survey and training is not required and no further studies are necessary.				
Mitigation Measure 5: Prior to construction of the project, the applicant shall prepare a Tree Protection and Replacement Plan that addresses each onsite tree that is protected under the city's Tree Preservation and Protection Ordinance. The Tree Protection and Replacement Plan shall generally be consistent with the Preliminary Site Plan included as Figure 2 of the IS/MND and shall identify any additional tree removal resulting from the construction of site infrastructure necessary to develop the Project consistent with the Preliminary Site Plan. The Tree Protection and Replacement Plan shall provide for appropriate protection measures for any trees (that qualify as protected under the city's ordinance) to be retained onsite and replacement of trees (that qualify as protected under the city's ordinance) to be removed. Replacement of trees shall meet the following standards. A.The number and size of newly planted trees shall be calculated based upon an inch for an inch replacement of the diameter breast height (DBH) of the removed trees where a 15 gallon tree will replace one inch DBH of the removed tree; a 24 inch box tree will replace two inches, and a 36 inch box tree will replace three inches. The replacement trees shall	Project applicant, contractor	City of Citrus Heights	• Prior to commencing any site grading, tree removal, or any onsite activity.	• City approval of Tree Protection and Replacement Plan prepared by licensed arborist.

have a combined diameter equivalent to not less than the total diameter of the trees removed. B.One or a combination of methods may be used, including replacement, relocation, or payment of in-lieu mitigation fees. The preferred alternative is on-site replacement.				
Cultural Resources and Tribal Cultural Resources				
Mitigation Measure 6: If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for pre-contact and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find: • If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required. • If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead federal agency, the City of Citrus Heights, and applicable landowner. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as	Project applicant, contractor	City of Citrus Heights	• Throughout all construction activity	• Construction activity in the area of any potential archeological resource is stopped until the actions specified in this mitigation measure are completed, subject to approval from the City

defined in Section 15064.5(a) of the CEQA Guidelines. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to their satisfaction. • If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Sacramento County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not				

agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.				
Noise				
Mitigation Measure 7: Prior to issuance of Certificate of Occupancy, demonstrate that the two buildings nearest to Fair Oaks Boulevard north, east, and south facing facades maintain minimum window and door assembly STC ratings of 32.	Project applicant	City of Citrus Heights	• Prior to the issuance of Occupancy Permit.	• Design and materials of sound wall barriers are shown on building plans subject to City approval • Windows have been installed as described in the mitigiation
Mitigation Measure 8: To the maximum extent practical, the following measures should be incorporated into the project construction operations:	Project applicant	City of Citrus Heights	• Ongoing throughout construction	• Ongoing compliance with mitigation.

• Noise-generating construction activities shall not occur within the hours identified in Noise Ordinance Section 34-88(5). • All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition. • All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity. • Electrically powered equipment shall be used instead of pneumatic or internal combustion- powered equipment, where feasible. • Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors. • Project area and site access road speed limits shall be established and enforced during the construction period. • Nearby residences shall be notified of construction schedules so that arrangements can be made, if desired, to limit their exposure to short-term increases in ambient noise levels.				
Transportation				

Mitigation Measure 9: The applicant shall submit a Construction Traffic Management Plan (plan) to minimize traffic impacts to public streets and maintain a high level of safety for all roadway users. The plan shall include items such as: the number and size of trucks per day, expected arrival/departure times, truck circulation patterns, location of truck staging areas, employee parking, and the proposed use of traffic control/partial street closures on public streets. The City of Citrus Heights shall ensure that the plan has been developed and approved by the City's General Services Division prior to commencement of grading or construction for the project.	Project applicant	City of Citrus Heights	• Prior to the issuance of Building Permit	Applicant prepares a Construction Traffic Management Plan for City approval that achieves the performance standards listed in this mitigation measure

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ORDINANCE NO. 2019-____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF CITRUS HEIGHTS, CALIFORNIA, AMENDING THE ZONING MAP AS SHOWN ON THE ATTACHED MAP IN ORDER TO REZONE THREE PROPERTIES FROM RD-10 TO RD-20

THE CITY OF CITRUS HEIGHTS DOES ORDAIN AS FOLLOWS:

Section 1: Purpose and Authority

The purpose of this Ordinance is to amend the Citrus Heights Zoning Map to change the zoning of the identified parcels from RD-10 to RD-20 as shown in the attached Rezone Exhibit (Exhibit A)

Section 2: Findings

a) The amendment to the Zoning Map from RD-10 to RD-20, is internally consistent with the General Plan designation of Medium Density Residential in that the General Plan supports providing for a variety of housing options;

b) The site is physically suited for the proposed zoning designation;

c) The project complies with all applicable provisions of the Zoning Code other than those modified by the concession requests and density bonus request;

d) Any approved modifications to the development standards of the Zoning Code are necessary and appropriate to accommodate the superior design of the proposed project, its compatibility with adjacent land uses, and its successful mitigation of any identified environmental impacts;

e) The project complies with the City's Design Guidelines;

f) The project can be adequately served by public facilities, services and utilities;

g) The project is and will be compatible with the site, and the land uses and development intended for the surrounding neighborhood by the General Plan;

h) The site is adequate for the project in terms of size, shape, topography, and circumstances;

i) The establishment, maintenance, or operation of the use would not be detrimental to the health, safety or general welfare of persons residing or working in the neighborhood of the proposed use, or detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the City;

j) The applicant has demonstrated that storm drainage will not negatively impact the surrounding area;

k) The applicant has demonstrated that adequate public infrastructure is available to service the project; and

l) The project will assist the City in meeting the goals of the General Plan, including providing a variety of housing opportunities

Section 3: Action

The City Council hereby amends the Citrus Heights Zoning Map to assign a revised zoning designation to the parcels specified in the attached Rezone exhibit (Exhibit A), which is incorporated by reference and included in its entirety with this ordinance.

Section 4: Severability

If any section of this Ordinance is determined to be unenforceable, invalid, or unlawful, such determination shall not affect the enforceability of the remaining provisions of this Ordinance.

Section 5: Effective Date and Publication

This Ordinance shall take effect thirty (30) days after its adoption, and within fifteen (15) days after its passage, shall be posted in three public places.

PASSED AND ADOPTED by the City Council of the City of Citrus Heights, California, this 12th day of December 2019 by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTAIN: COUNCIL MEMBERS:

_____
Jeannie Bruins, Mayor

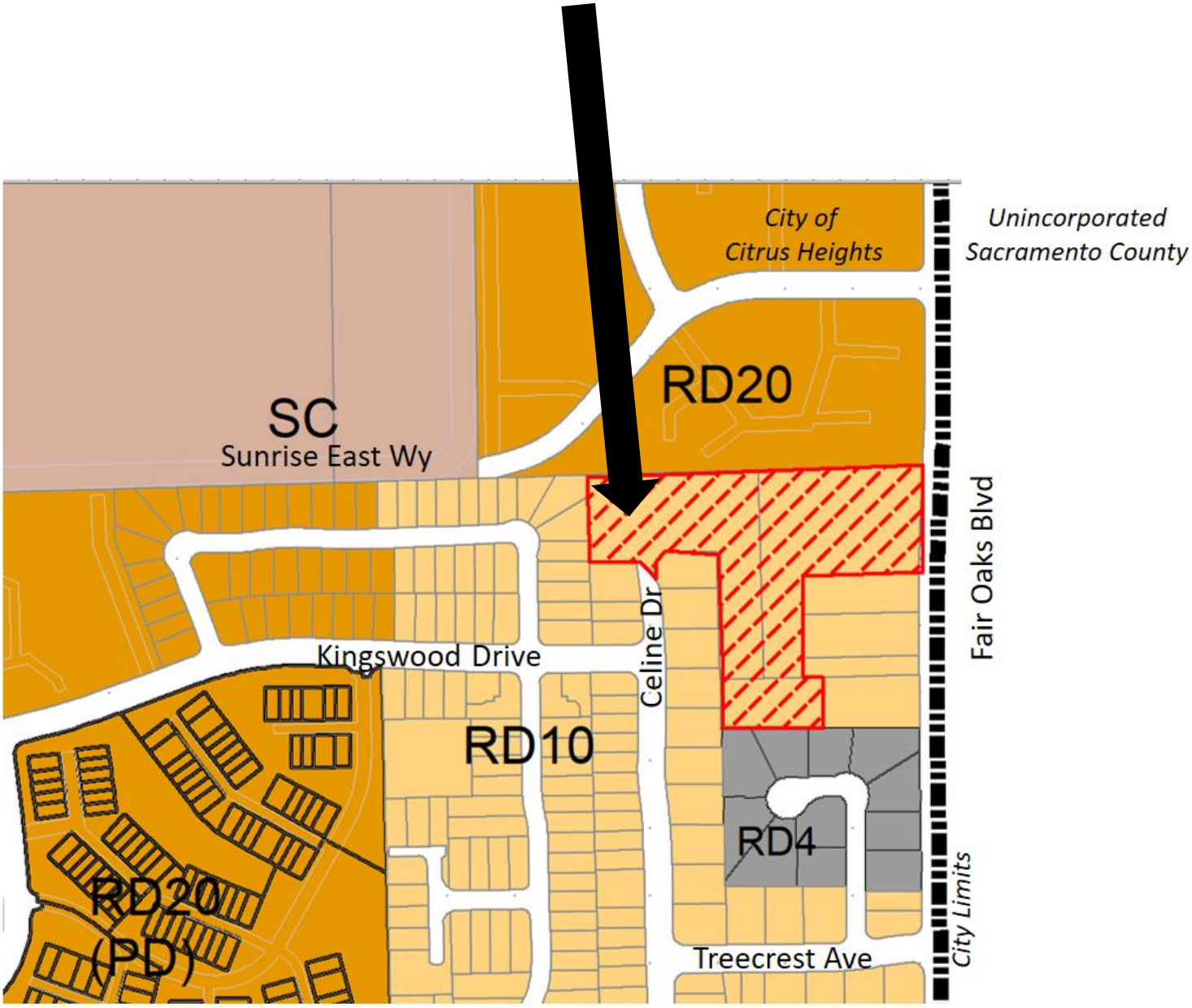
ATTEST:

_____
Amy Van, City Clerk

Exhibit A – Zoning Map

Exhibit A

Rezone Parcels 233-0430-041, -002, -007
from RD-10 to RD-20



ATTACHMENT 4

RESOLUTION NO. 2019 - _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CITRUS HEIGHTS, CALIFORNIA, APPROVING A CONCESSION REQUEST AND DESIGN REVIEW PERMIT FOR THE FAIR OAKS SENIOR APARTMENT PROJECT AT 12057 FAIR OAKS BOULEVARD

WHEREAS, Ionic Enterprises submitted an application for approval of:

1. A concession to the development standards to allow parking in a required setback, a reduction in required parking, and for a fire department turn around to be placed in a landscape planter a density bonus; and

2. A Design Review Permit for the construction of a 110-unit affordable multi-family project; and

3. A Rezone from RD10-RD20; and

4. A Tree Permit.

WHEREAS, the Planning Commission held a public hearing on October 23, 2019 and the City Council held a public hearing on December 12, 2019, in which it considered the request for a concession which would allow parking to be located within 10' of a residential property boundary, a reduction in parking, and allowing a fire department turn around to be partially located with a required landscape planter and considered a Rezone, a Design Review Permit and Tree Permit application for the 110-unit project;

WHEREAS, the Planning Commission recommended, on a __-__-__ vote, with _____votes in favor, ___ vote opposed, and _____ abstention, that the City Council determine that a Mitigated Negative Declaration is the appropriate level of environmental review;

WHEREAS, the Planning Commission forwarded action on the concession request to the City Council on a ___-___-___ vote, with ____votes in favor, ___ votes opposed and ____ abstention;

WHEREAS, the Planning Commission forwarded action on the Design Review Permit request to the City Council on a __-___-___ vote, with ____ votes in favor, __ votes opposed and ___ abstention subject to the Findings contained herein and the Conditions of Approval attached as Exhibit A;

WHEREAS, the City Council has adopted a Mitigated Negative Declaration for the project, wherein public testimony was taken and potential impacts could be avoided or

reduced to a level less than significance by mitigation measures and the City Council adopted a Statement of CEQA Findings;

WHEREAS, the City Council has reviewed and considered all of the evidence in the record before it, including, but not limited to all reports, studies, memoranda, maps, staff reports, or other planning documents relating to the project prepared by the City, or consultants to the City, with respect to the City's consideration of the density bonus, concession requests and Design Review Permit; all written correspondence submitted to the City; and all oral and written testimony submitted to the City. The City Council has relied on all of the evidence in the record of proceedings in reaching its decision, even if not every document was formally presented to the City Council, Planning Commission or City Staff as part of the City files generated in connection with the project;

NOW, THEREFORE, BE IT RESOLVED that the Citrus Heights City Council hereby finds as follows:

<u>Findings for Approval of the Concession Request and Density Bonus</u>

1. *The concession is required to provide for affordable housing costs as defined in Health and Safety Code Section 50052.5, or for rents for the targeted units to be set as specified in Section 106.32.070.B;*

2. *The applicant has demonstrated that the concession and density bonus is needed in order to maintain the unit count and provide the required parking and emergency access for this project;*

3. *Without granting of the concession, the unit count would need to be reduced from 110 to 89, services would be reduced, and the project would no longer be feasible;*

4. *The project will be consistent with the General Plan and Zoning Code, except as provided for in the density bonus and concession that is allowed by Chapter 106.32 of the Zoning Code, which allows parking within 10' of a residential boundary, reduced parking requirement, and the fire department turnaround to be located within a required landscape planter;*

5. *The 110 units can be accommodated by existing and planned infrastructure capacities;*

6. *The project will provide affordable housing in a manner consistent with Chapter 106.32; and*

7. *The agreement provided as Exhibit B will ensure that the units remain affordable for 55 years.*

Findings for Approval of the Design Review Permit

1. *The 110-unit multi-family housing development is consistent with the General Plan and supports several of the goals of the General Plan that encourage a variety of housing types;*

2. *The granting of one concession to allow parking within a required setback, one concession reducing the required parking, and one concession to allow a fire department turnaround in a landscape planter is allowed by the Zoning Code;*

3. *The project complies with all other development standards of the Zoning Code with the incorporation of the conditions of approval included herein and the granting of a concession to allow parking within a setback;*

4. *The project's architectural design and building massing and scale are appropriate to and compatible with the site surroundings and the community;*

5. *The project provides attractive and desirable site layout and design, including building arrangement, exterior appearance and setbacks, drainage, fences and walls, grading, landscaping, lighting, etc.;*

6. *The project complies with all applicable design standards in Chapter 106.31 and/or other applicable City design guidelines and policies with the incorporation of the conditions of approval included herein;*

7. *The project provides safe and efficient public access, circulation and parking, including bicycle and pedestrian accommodations where appropriate with the incorporation of conditions of approval; and*

8. *The project provides open space and landscaping, including the use of water efficient landscaping.*

BE IT FURTHER RESOLVED that:

1. The matters set forth in the preceding clauses of this resolution are hereby adopted and incorporated;

2. The City Council does hereby grant the requested concessions subject to the Findings contained herein and authorize the City Manager to enter into the affordable housing agreement provided as Exhibit B, and authorize the City Manager to make administrative changes to the agreement as necessary.

3. The City Council does hereby adopt the Design Review Permit subject to the Findings contained herein and the conditions of approval set forth in Exhibit A.

PASSED AND ADOPTED by the City Council of the City of Citrus Heights, California, this 12th day of December 2019, by the following roll call vote:

AYES: **COUNCIL MEMBERS:**
NOES: **COUNCIL MEMBERS:**
ABSENT: **COUNCIL MEMBERS:**
ABSTAIN: **COUNCIL MEMBERS:**

_____
Jeannie Bruins, Mayor

ATTEST:

_____
Amy Van, City Clerk

Attachments:

Exhibit A – Conditions of Approval
Exhibit B – Affordable Housing Agreement

Exhibit A to Attachment 4

Fair Oaks Affordable Senior Apartments Conditions of Approval

CONDITIONS OF APPROVAL FOR THE DESIGN REVIEW PERMIT DRP 18-05

1. The project requires final action by the City Council including but not limited to the review and approval of the Rezone, Design Review Permit, the granting of three concessions to allow parking within the setback, require 11.6-percent less parking, and to allow the fire department turnaround within a landscape planter area and the approval of the Affordable Housing Agreement. (Planning)

2. The Design Review Permit approval shall be exercised within a two (2) year period from the date of final approval and if not exercised shall expire. (Planning)

3. The project shall be operated and managed as described within the staff report including an on-site live-in property manager and resident services shall be provided as described in Attachment 12. (Planning)

4. This project is approved as shown in Attachment 11 and discussed in the Staff report, and as conditioned. (Planning)

5. The project shall comply with the Mitigation and Monitoring Plan as depicted in Attachment 2b. The following measures must be complied with as outlined in the Mitigation and Monitoring Program and summarized below:

    a. Mitigation Measure 1- Prior to commencement of grading and/or building construction, the City of Citrus Heights shall ensure that site plan notes include requirements for the contractor to implement the following Basic Construction Emission Control Measures.
    b. Mitigation Measure 2 - Prior to any activity occurring on the site, a qualified botanist shall conduct a pre-construction survey and proceed in compliance with the mitigation measure
    c. Mitigation Measure 3- A qualified biologist should conduct a pre-construction survey for special-status bat species, including pallid bat and silver haired bat, within 14 days prior to ground disturbing activities and proceed in compliance with the mitigation measure
    d. Mitigation Measure 4 - If construction activities within the Study Area begin during the nesting season (February 15 to August 31), a qualified biologist should conduct a pre-construction survey of the project footprint, where accessible, for active nests and proceed as outlined in the mitigation measure.
    e. Mitigation Measure 5 - Prior to construction of the project, the applicant shall prepare a Tree Protection and Replacement Plan that addresses each onsite tree that is protected under the city's Tree Preservation and Protection Ordinance and proceed as outlined in the mitigation measure.
    f. Mitigation Measure 6- If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery and proceed as outlined in the mitigation measure.
    g. Mitigation Measure 7 – The two buildings nearest to Fair Oaks Boulevard shall install windows with an STC rating of 32 as outlined in the mitigation measure
    h. Mitigation Measure 8 – The applicant shall comply with the construction related noise

mitigation as outlined in the mitigation measure.

i. Mitigation Measure 9 – The applicant shall submit a Construction Traffic Management Plan (plan) to minimize traffic impacts to public streets and maintain a high level of safety for all roadway users, as outlined in the mitigation measure.

6. The project shall comply with all requirements of all servicing agencies of the City of Citrus Heights including but not limited to Sacramento Metropolitan Fire District, Citrus Heights Water District, Sacramento Area Sewer District, and with the implementation measures of the Sacramento Metropolitan Air Quality Management District (SMAQMD) *Basic Construction Emission Control Practices*.

Prior to Issuance of Improvement Plans

7. The applicant shall provide written evidence of compliance with the mitigation and monitoring plan and all conditions of approval
8. The applicant shall submit for review and approval, improvement plans that depict the following:

   Fair Oaks Boulevard

   a. Construct the following frontage improvements: street paving widening with Class II bike lane, vertical curbs, gutters, 6-ft wide separated sidewalks, one streetlight (Type A, LED), and any storm drain system.
   b. Dedicate any additional Right-of-Way (ROW) needed for frontage improvements. The separated sidewalk may require a Pedestrian Easement if portions of the sidewalk are located outside of the ROW.
   c. Dedicate a minimum 18-ft wide Public Utilities Easement (PUE) along Fair Oaks Blvd. PUE shall be located west of new ROW limits.
   d. Property owner shall maintain all landscaping along Fair Oaks Blvd.
   e. Landscaping, signs, and structures located near the driveway and Fair Oaks Blvd shall meet the visibility restriction height requirements per Citrus Heights Municipal Code 106.30.060.E. The 30" maximum height shall be measured from roadway elevation.
   f. The private street shall be aligned with Walnut Hill Way (located on the east side of Fair Oaks Blvd.

   Celine Drive

   a. Construct the following frontage improvements: street paving, rolled curbs, gutters, sidewalks (width shall match existing sidewalks, and any storm drain system.
   b. Install sign indicating the private the north end of Celine Drive.
   c. Dedicate any additional Right-of-Way (ROW) required for frontage improvements. ROW to extend to proposed access gate.
   d. Dedicate a minimum 12.5-ft wide Public Utilities Easement (PUE) along Celine Drive. PUE shall be located east of the new ROW limits.
   e. Provide accessible path of travel onto Celine Drive. A pedestrian gate is shown adjacent to the vehicle access gate. This gate shall connect the public sidewalk along Celine Drive to the on-site pathway system.
   f. At the north end of Celine Drive, accessible ramps on the east and west sides of the street shall be installed to provide accessible connection to both sides of Celine Drive. (GSD)

9. Demonstrate that the site meets the pre and post Best Management Practices (BMP's) for Stormwater Quality Mitigation per State of California requirements and the project's post-development (proposed) stormwater runoff cannot exceed the pre-development (existing) runoff. (GSD)

10. Submit and receive approval of a Storm Water Pollution Prevention Plan (SWPPP) and Califiornia's Notice of Intent (NOI). The project shall adhere to the State of California's General Construction Permit requirements. (GSD)

11. Any work within the City's Right-of-Way (ROW) requires an Encroachment Permit from the General Services Department. (GSD)

12. Prior to beginning any construction activities (including demolition and grading) on-site, the applicant shall submit and receive approval of a Construction Management Plan. This Plan should address measures that will be taken to ensure public safety during construction. At a minimum this Plan shall include a fencing plan and a circulation plan for equipment and vehicles during construction. The plan shall include a screening plan to screen equipment and storage onsite, subject to Planning Division approval. (Planning)

13. SASD Design Standards require 6-inch service laterals for multi-family parcels. The existing 4-inch service lateral must be upsized to a 6-inch service lateral with a manhole installation. Any construction and/or modification to the public sewer system shall be required to the satisfaction of SASD prior to the approval of improvement plans. SASD Design Standards apply to any onsite and offsite sewer construction. (SASD)

14. SASD requires each building on each lot with a sewage source to have a separate connection to the SASD's sewer system. If there is more than one building in any single parcel and the parcel is not proposed for split, then each building on that parcel shall have a separate connection to a private onsite sewer line or a separate connection to the SASD public sewer line. (SASD)

15. Demonstrate compliance with SMUDs design criteria:

    a. SMUD has existing overhead _12 and 69_kV facilities along the northern property boundary, Fair Oaks Blvd and on the project site that will need to remain. The Applicant shall be responsible for maintaining all CalOSHA and State of California Public Utilities Commission General Order No. 95 safety clearances during construction and upon building completion. If the required clearances cannot be maintained, the Applicant shall be responsible for the cost of relocation
    b. Structural setbacks less than 14-feet shall require the Applicant to conduct a pre-engineering meeting with all utilities to ensure property clearances are maintained.
    c. Any necessary future SMUD facilities located on the Applicant's property shall require a dedicated SMUD easement. This will be determined prior to SMUD performing work on the Applicant's property.
    d. In the event the Applicant requires the relocation or removal of existing SMUD facilities on or adjacent to the subject property, the Applicant shall coordinate with SMUD. The Applicant shall be responsible for the cost of relocation or removal.
    e. SMUD reserves the right to use any portion of its easements on or adjacent to the subject property that it reasonably needs and shall not be responsible for any damages to the developed property within said easement that unreasonably interferes with those needs.
    f. The Applicant shall not place any building foundations within 5-feet of any SMUD trench to maintain adequate trench integrity. The Applicant shall verify specific clearance requirements for other utilities (e.g., Gas, Telephone, etc.).
    g. In the event the city requires an Irrevocable Offer of Dedication (IOD) for future roadway improvements, the Applicant shall dedicate a 12.5-foot public utility easement (PUE) for overhead and/or underground facilities and appurtenances adjacent to the city's IOD.

h. The Applicant shall comply with SMUD siting requirements (e.g., panel size/location, clearances from SMUD equipment, transformer location, service conductors). The Applicant shall provide separate SMUD service points to each parcel to the satisfaction of SMUD.
i. The Applicant shall dedicate a 12.5-foot public utility easement for overhead and/or underground facilities and appurtenances adjacent to all public street rights-of-ways.
j. The Applicant shall dedicate any private drive, ingress and egress easement, (and 10-feet adjacent thereto) as a public utility easement for (overhead and) underground facilities and appurtenances. All access roads shall meet minimum SMUD requirements for access roads.
k. The Applicant shall dedicate and provide all-weather vehicular access for service vehicles that are up to 26,000 pounds. At a minimum: (a) the drivable surface shall be 20-feet wide; and (b) all SMUD underground equipment and appurtenances shall be within 15-feet from the drivable surface. (SMUD).

16. A water main shall be provided that runs through the property and is isolated from the District water mains via backflow device(s), creating a "private" system within the project property. Connection point(s) to the District's water distribution system will be determined during the plan review process. (CHWD)

17. Fire Protection and related water facilities shall be approved by CHWD and Sac Metro Fire. (CHWD)

18. A domestic metered water service(s) with backflow device (size and quantity of services determined by water demand calculations by the developer's engineer) to provide water to the property. Connection point(s) for domestic service(s) will be determined during the plan review process. (CHWD)

19. A separate dedicated metered water service(s) with backflow device for landscape/irrigation purposes at the property. (CHWD)

20. Installation of the water distribution system modifications will be by the developer's contractor at the developer's expense. (CHWD)

21. Any easements granted to the District for the water facilities will be prepared by the developer at the developer's expense. (CHWD)

22. Comply with all requirements of the Sacramento Fire Metropolitan Fire District. (SMFD)

Prior to Issuance of Building Permits

23. Prior to issuance of a Building Permit, file an application to be located in the Citrus Heights Postal Delivery Boundary, subject to Planning Division approval (Planning).

24. The applicant shall enter into an affordable housing agreement with the city as required by Section 106.32.100. The agreement shall be recorded at the County Recorder's Office prior to the issuance of a Building Permit for the dwelling units. (Planning)

25. Parking stall dimensions shall meet or exceed the minimum dimensions contained in the Citrus Heights Zoning Code. All parking stalls shall be double striped as required by the Zoning Code. All parking areas shall meet the minimum shade requirements of the Zoning Code. (Planning)

26. The project shall comply with the Outdoor Lighting Ordinance. All on-site external lighting shall be designed to have no off-site glare. All light fixtures shall have full cut-off lenses and be dark sky friendly. Floodlights are not permitted. Lighting cut-sheets are required prior to issuance of Building Permit. (Planning)

    a. The applicant shall submit a final Landscape Plan that demonstrates all landscaping complies with the requirements of the Zoning Code including water efficient landscape requirements, shading requirements, and landscape area requirements. (Planning)

27. Prior to final of each building permit, submit written documentation identifying compliance with the Greenhouse Gas Reduction Plan. (Planning)

28. Prior to issuance of a building permit, the applicant shall record an acknowledgement or other document approved by the City Attorney which requires compliance with Section 106.36.070.C of the Zoning Code related to changes in occupancy or operations which would lead to the need for additional parking. (Planning)

29. Submit a detailed landscape plan for the Fair Oaks Boulevard Driveway that demonstrates compliance with the required site distance requirements specified in the Traffic Impact Analysis, subject to city review and approval. (Planning)

30. Prior to issuance of the first building permit, the applicant shall record a lot line adjustment with APN 233-0430-014 to preserve the existing Cypress trees, subject to Planning Division approval. (Planning).

31. Merge the three existing parcels into a single parcel, subject to Engineering Division approval. (GSD)

32. Prior to recordation of the lot merger or prior to issuance of the first building permit (whichever is first), the applicant shall record, in a form approved by the City Attorney, an access easement benefitting 12023 Fair Oaks Boulevard (APNs: 233-0043-003, -004, and/or -005), which easement shall have effect only at such time as the owner of 12023 Fair Oaks Boulevard is willing to record a reciprocal access easement, in a form approved by the City Attorney, benefitting the applicant for the same purpose, as described below.

    The purpose of the reciprocal access easements is to allow a shared access to the Fair Oaks Senior Apartments driveway on Fair Oaks Boulevard. The city will require the owner of 12023 Fair Oaks Boulevard to record a reciprocal access easement benefitting Fair Oaks Senior Apartments at such time as the owner of 12023 Fair Oaks Boulevard seeks entitlements from the city. The city shall retain discretion on whether to proceed with implementation of the easement based on whether the proposed use is compatible with the Fair Oaks Senior Apartments. At a minimum, the access easement provided by applicant shall:

    a. Allow for a shared driveway on Fair Oaks Boulevard between the Fair Oaks Senior Housing site and 12023 Fair Oaks Boulevard at such time as 12023 Fair Oaks Boulevard seeks entitlements from the city.

    b. Allow for through access from the west side of 12023 Fair Oaks Boulevard to the driveway on Fair Oaks Boulevard.

    c. Allow for the property owner at 12023 Fair Oak Boulevard to construct the necessary improvements to result in a shared driveway, including the removal of landscaping and

any other physical improvements, and construction necessary to achieve the above purpose.

d. Allow for a minimum aisle width of 24'.

e. Allow for reciprocal access between the project site and 12023 Fair Oaks Boulevard upon completion of the shared driveway.

f. The applicant shall be responsible for City's costs of reviewing the access easement and associated documentation including City Attorney Fees whether directly or by timely reimbursement on a monthly basis. (Planning)

33. At such time as 12023 Fair Oaks Boulevard seeks entitlements from the city, the city shall determine if the easement is warranted based on the that the proposed land use on 12023 Fair Oaks Blvd. The city shall evaluate whether or not the proposed use and drive aisle connection (whether for emergency access or primary access) is complementary to the existing land use within the Fair Oaks Senior Apartments. The easement shall not be granted if the city finds the proposed use or connections to the drive aisle would impact the health, safety, and welfare of the residents on the project site or the vicinity. If the city determines the connection is warranted, the property owners or their successors of the Fair Oaks Senior Apartments development shall work in good faith with the property owner of 12023 Fair Oaks Boulevard to allow for the vehicular and pedestrian connection to the north/south drive aisle on the Fair Oaks Senior Apartment site. The applicant will have constructed its fair share of driveway and drive aisle (as depicted in Attachment 11). Accordingly, the reconfiguration of the driveway and drive aisle will be at the sole cost of the 12023 Fair Oaks Boulevard property owner at such time as the property owner seeks entitlements from the city. (Planning)

34. Submit and receive approval of a final site plan that addresses the following:

a. Final site plan shall include details of the outdoor activity areas as outlined in the Landscape plan. Details about specific fixtures, materials, path placement, etc. shall be provided, subject to Planning Division approval.

b. Provide a vehicular and pedestrian gates at Celine Drive. The gates shall use a restricted entry system by use of a key fob, code or other system. (Planning)

35. The applicant shall submit a final Landscape and Irrigation Plan that demonstrates all landscaping complies with the requirements of the Zoning Code including water efficient landscape requirements, shading requirements, and landscape area requirements including the following:

a. Screening trees shall be placed at the best extent possible along the perimeter where the project site adjoins a residential property.

b. The landscape plan shall be revised to provide appropriate number of shade and screening trees. The location of existing and proposed utility lines and proposed site lighting shall be considered during the placement of trees.

36. A solid 6’ high masonry fence is required along all perimeters of the site with the exception of the northern property line where a wrought iron fence is required. Submit and receive approval of the design of all fencing and walls prior to the issuance of any building permits. All masonry

walls shall have anti-graffiti coating on sides that face the public streets (Planning)

37. Submit and receive approval of a photometric plan. All on-site external lighting shall be designed to have no off-site glare. All light fixtures shall have full cut-off lenses and be nighttime sky friendly. Floodlights are not permitted. Lighting cut-sheets may be required prior to issuance of Building Permit. (Planning)

38. Demonstrate on the Building Plans that roof drains for the buildings do not directly connect into the storm drain system. Downspouts shall flow to rain garden, landscaped areas, bio-swale, and/or other approved filtering methods before entering the city's storm drain system. (GSD)

39. Applicant shall pay all the appropriate development fees at the time of permit issuance. (GSD)

40. SASD and the Sacramento Regional County Sanitation District will require sewer impact fee payments in accordance with each District's Ordinances. Fees are to be paid prior to the issuance of building permits. (SASD)

During Construction and Prior to Issuance of Occupancy Permits

41. Following completion of landscape installation and prior to issuance of occupancy permits for any buildings, the Landscape Architect shall certify that:
    a. Soil has been tested and prepared as necessary based on the Soils Analysis;
    b. The irrigation has been installed compliant with the Zoning Code and the Model Water Ordinance and approved landscape plan; and
    c. Tree planting sites shall comply with the minimum soil volume as identified in the Zoning Code and landscape plan. (Planning)

42. Property owner shall enter into a storm-water device maintenance and access agreement for the proposed storm water filtering system(s) on the site. Agreement shall specify owner's ongoing maintenance responsibilities and allow periodic city inspections of the storm-water devices. Agreement shall be executed prior to issuance of a Certificate of Occupancy for any building on site. (Engineering)

Other Conditions of Approval

43. The Sacramento Metropolitan Fire Districts requirements are not to be construed as abrogating more restrictive requirements by other agencies having jurisdiction. Final acceptance is subject to field approval and completion of required tests. (SMFD)

44. Construction hours shall be restricted to the hours of 6:00 AM to 8:00 PM weekdays, and 7:00 AM to 8:00 PM on weekends. (Planning)

45. Display transit information in prominent location(s) in the clubhouse/office area for both employees and residents. (Regional Transit)

46. Following the installation of the landscaping, all landscape material shall be maintained in a healthy and weed free condition; dead plant material shall be replaced immediately. All trees shall be maintained and pruned in accordance with the accepted practices of the International Society of Arboriculture. Any pollarding or significant tree trimming performed on existing or proposed trees is subject to Planning Division approval prior to commencing trimming. (Planning)

47. This Design Review Permit approval does not include any signs. (Planning)

48. Minor modifications to the design of the project, including site layout, colors and materials, may be approved by the Planning Division provided such changes are consistent with the overall design as approved herein. Major modifications will require Planning Commission approval. (Planning)

49. The applicant/owner and/or successor in interest agrees to indemnify, defend, and hold harmless the city, its officials, officers, employees, agents and consultants from any and all administrative, legal or equitable actions or other proceedings instituted by any person not a party to this permit challenging the validity of the Project Approval or any Subsequent Project Approval, or otherwise arising out of or stemming from these Approvals. The applicant/owner and/or successor in interest may select its own legal counsel to represent their interest at their sole cost and expense. The parties shall cooperate in defending such action or proceeding. The applicant/owner and/or successor in interest shall pay for city's costs of defense, whether directly or by timely reimbursement on a monthly basis. Such costs shall include, but not be limited to, all court costs and attorneys' fees expended by city in defense of any such action or other proceeding, plus staff and City Attorney time spent in regard to defense of the action or proceeding. The parties shall use best efforts to select mutually agreeable defense counsel but, if the parties cannot reach agreement, city may select its own legal counsel and the applicant and/or successor in interest agrees to pay directly or timely reimburse on a monthly basis City for all such court costs, attorney fees, and time referenced herein. (City Attorney)

CONDITIONS OF APPROVAL FOR THE TREE PERMIT

1. Minor modifications to the Tree Permit, including additional trees and/or encroachments, may be approved by the Planning Division provided such changes are consistent with the guidelines for tree preservation. (Planning)

2. The conditions of approval shall be distributed to all contractors and subcontractors who have access to the site. It is the responsibility of the developer and contractor to inform all subcontractors of the tree preservation requirements. (Planning)

Prior to the Issuance of Any Permits (Including Grading)

3. The applicant shall submit an updated arborist report and tree impact assessment report. The tree impact assessment report shall include all preservation measures that the applicant shall undertake during construction to ensure the long-term health and safety all trees that will remain or be relocated. This arborist report shall include any trees located off-site that may be impacted by construction. (Planning)

4. The project applicant shall provide mitigation for the loss of protected trees consistent with the Tree Preservation Ordinance and Mitigated Negative Declaration. (Planning)

5. The applicant shall prepare a Tree Replacement and Revegetation Program for the city’s review and approval. The program shall monitor and maintain replacement trees that are established over a period of three years. If the applicant pursues tree planting on private property, the applicant shall provide a long term maintenance and protection plan to ensure these trees are preserved long-term. (Planning)

6. The applicant shall comply with the MND and fulfill all of the measures contained in the Mitigation and Monitoring Program. The following measures must be complied with as outlined in the Mitigation and Monitoring Program and summarized below:

a. The project applicant shall provide compensation for the loss of trees sufficient to meet the city of Citrus Heights' requirement that one diameter inch of tree be planted for each diameter inch of tree removed or that a revegetation plan approved by the city has been implemented. (Planning)

7. Prior to mobilization of construction equipment, grading activities, or site work (whichever comes first), the applicant shall install a minimum of a six-foot high chain link fence (or acceptable alternative) at the outermost edge of the tree protection zone for each tree or group of trees proposed to remain. Signs must be installed by the applicant on the temporary fence at least two (2) equidistant locations to be clearly visible from the lot. The size of each sign shall be a minimum of two feet (2') by two feet (2') and must contain the following language:

"WARNING: THIS FENCE SHALL NOT BE REMOVED OR

RELOCATED WITHOUT WRITTEN AUTHORIZATION

FROM THE PLANNING DIVISION" (Planning)

8. The applicant shall contact the Planning Division and certified project arborist to inspect and approve the temporary fencing and signs around the protected zone before beginning any construction. (Planning)
9. Any watering or deep root fertilization which the arborist deems necessary to protect the health of the tree due to the construction impacts shall be completed by the applicant. (Planning)

During Construction and Prior to Issuance of an Occupancy Permit

10. The following information must be located on-site during construction activities:
    a. Arborist reports
    b. Approved site plan including fencing plan
    c. Conditions of approval for the Tree Permit (Planning)
11. The project's certified arborist shall monitor any excavation within the dripline of any tree, including off-site trees if their protected zone extends into the project site. (Planning)
12. All finished grading shall ensure that no water will collect within the dripline of any native oak trees. (Planning)
13. Submit and receive approval of a Landscape and Irrigation Plan for any landscaping within the dripline of any protected trees. Only low-water usage plantings may be planted under the dripline of oak trees. (Planning)
14. If any native ground surface fabric within the dripline must be removed for any reason, it shall be replaced within forty-eight (48) hours. (Planning)
15. Storage of materials, equipment and vehicles is not permitted within the dripline of any tree. Vehicles and other heavy equipment shall not be operated within the dripline of any tree. (Planning)
16. The project's certified arborist shall immediately treat any severed or damaged roots (NOTE: Without exception, all digging shall be done using hand tools, no machine trenching shall be allowed in the dripline of any tree). Minor roots less than one (1) inch in diameter may be cut, but damaged roots shall be traced back and cleanly cut behind any split, cracked or damaged area. Major roots over one (1) inch in diameter may not be cut without approval of an arborist and any arborist recommendations shall be implemented. (Planning)

17. The temporary fencing shall remain in place throughout the entire construction period and shall not be removed without obtaining written authorization from the Planning Division. In no event shall the fencing be removed before the written authorization is received from the Planning Division. (Planning)
18. At least five (5) days before the applicant seeks their Building Permit Final for each building, a Certification Letter from a certified arborist shall be submitted to and approved by the Planning Division. The certification letter shall attest to all of the work (regulated activity) which was conducted in the dripline of all trees, and outline whether any continuing measures are needed for tree health. (Planning)
19. The city may elect to hire a certified arborist to assist in monitoring the project. Should the city desire to do this, the applicant will be responsible to reimburse the city for these costs. (Planning)
20. The applicant/owner and/or successor in interest agrees to indemnify, defend, and hold harmless the city, its officials, officers, employees, agents and consultants from any and all administrative, legal or equitable actions or other proceedings instituted by any person not a party to this permit challenging the validity of the Project Approval or any Subsequent Project Approval, or otherwise arising out of or stemming from these Approvals. The applicant/owner and/or successor in interest may select its own legal counsel to represent their interest at their sole cost and expense. The parties shall cooperate in defending such action or proceeding. The applicant/owner and/or successor in interest shall pay for city's costs of defense, whether directly or by timely reimbursement on a monthly basis. Such costs shall include, but not be limited to, all court costs and attorneys' fees expended by city in defense of any such action or other proceeding, plus staff and City Attorney time spent in regard to defense of the action or proceeding. The parties shall use best efforts to select mutually agreeable defense counsel but, if the parties cannot reach agreement, city may select its own legal counsel and the applicant and/or successor in interest agrees to pay directly or timely reimburse on a monthly basis city for all such court costs, attorney fees, and time referenced herein. (City Attorney)

Exhibit B to Attachment 4

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

City of Citrus Heights
6360 Fountain Square Dr.
Citrus Heights, CA 95621
Attention: City Clerk

This document is exempt from the payment of a recording fee pursuant to Government Code § 27383.

Space reserved for Recorder

AFFORDABLE HOUSING AGREEMENT

This Affordable Housing Agreement (this "**Agreement**") dated as of_____, 2019 (the "**Effective Date**") is entered into by and between Ionic Enterprises, Inc. ("**Owner**") and the City of Citrus Heights, a California municipal corporation (the "**City**"). Owner and the City are collectively referred to herein as the "**Parties**."

A. Owner owns, or has the contractual right to purchase, that certain real property located at 12057 Fair Oaks Boulevard in the City, known as Assessor's Parcel Numbers 23304300410000, 23304300020000, and 23304300070000 (the "**Property**"), as more particularly described on Exhibit A attached hereto and incorporated herein by this reference.

B. Owner intends to construct an apartment complex (the "**Improvements**") containing a one hundred ten (110) unit (the "**Units**") permanent rental residential housing complex comprised of forty-two (42) one-bedroom units, sixty-eight (68) two-bedroom units together with common facilities, on the Property.

C. Owner has requested a density bonus and two reductions in the zoning code standards under Citrus Heights Municipal Code Section 106.32.040, which requires Owner to enter into this Agreement with the City to provide affordable housing on the Property, as set forth in Citrus Heights Municipal Code Chapter 106.32.

D. Owner is voluntarily restricting the Units as follows: one hundred nine (109) units shall be affordable to Low-Income Households.

E. "**Project**" means the Property and the Improvements to be constructed by the Owner as set forth herein, including all or any portion(s), component(s) thereof, and interest(s) therein. The Project is not a "**low-rent housing project**" as that term is defined in Section 1 of Article XXXIV of the California Constitution, in that the City will only be providing routine government functions and its role in the Project will fall within the meaning of Section 37001.05(e) of the Health and Safety Code as an exception to the requirements of Article XXXIV.

F. In order to receive the density bonus and exceptions under Citrus Heights Municipal Code Section 106.32.040, Owner agrees that the Project shall be subject to the conditions and restrictions, and the rights of City under this Agreement, and Owner further

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agrees that it will comply, and shall require Property Manager to comply, with the income and rent restrictions contained in this Agreement.

G. The Parties have agreed to enter into and record this Agreement in order to satisfy the conditions described in the foregoing Recitals. The purpose of this Agreement is to regulate and restrict the occupancy and rents of the Project's Restricted Units for the benefit of the Project occupants. The Parties intend the covenants set forth in this Agreement to run with the land and to be binding upon Owner and Owner's successors and assigns for the full term of this Agreement.

NOW THEREFORE, in consideration of the preceding recitals and the mutual covenants hereinafter contained, the Parties agree as follows:

1. Definitions. The following terms have the meanings set forth in this Section wherever used in this Agreement or the attached exhibits.

"Area Median Income" or "AMI" means the area median income for Sacramento County, California, adjusted for household size, determined periodically by the California Department of Housing and Community Development (**"HCD"**) as published in Section 6932 of Title 25 of the California Code of Regulations ("**Regulations**") or successor provision published pursuant to California Health and Safety Code Section 50093(c). If HCD ceases to make such determination, Area Median Income shall be the median income applicable to Sacramento County, with adjustments for household size, as determined from time to time by the U.S. Department of Housing and Urban Development ("**HUD**") pursuant to the United States Housing Act of 1937 as amended, or such other method of median income calculation applicable to the City of Citrus Heights that HUD may hereafter adopt in connection with such Act.

"City" means City of Citrus Heights.

"Eligible Household" means a household for which total household income upon initial occupancy does not exceed the maximum income level for a Restricted Unit as specified in Subsection 2.2 and Exhibit B, and that meets the requirements set forth in Section 2.1.

"Low-Income" means an annual gross income that is not greater than eighty percent (80%) of Area Median Income.

"Qualifying Rent" means a monthly rent which does not exceed one-twelfth of thirty percent (30%) of the applicable income level set forth in Exhibit B, less a reasonable utility allowance adjusted for the household size appropriate for the unit calculated as set forth in California Tax Credit Allocation Committee regulations.

"Restricted Unit" means a dwelling unit which is reserved for occupancy at a Qualifying Rent by an Eligible Household.

"Very Low-Income" means an annual gross income that is less than or equal to fifty percent (50%) of AMI.

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2. Use and Affordability Restrictions. Owner hereby covenants and agrees, for itself and its successors and assigns, that the Property shall be used solely for the construction and operation of a 110-unit multifamily rental housing development in compliance with the development approvals granted by the City, and the requirements set forth herein. Owner represents and warrants that it has not entered into any agreement that would restrict or compromise its ability to comply with the occupancy and affordability restrictions set forth in this Agreement, and Owner covenants that it shall not enter into any agreement that is inconsistent with such restrictions without the express written consent of City.

2.1 Affordability Requirements. For a term of fifty-five (55) years commencing upon the date of issuance of a certificate of occupancy (or its equivalent) for the Improvements, one hundred nine (109) of the Units in the Project shall be both Rent-Restricted (as defined below) and occupied (or if vacant, available for occupancy) by Eligible Households whose income does not exceed Low-Income in accordance with Exhibit B. In the event that recertification of tenant incomes indicates that the number of Restricted Units actually occupied by Eligible Households falls below the number reserved for the income group as specified in this Section and Exhibit B, Owner shall rectify the condition by renting the next available Unit in the Project to Eligible Household(s) until the required income mix is achieved.

2.2 Rents for Restricted Units. Rents for Restricted Units are limited to Qualifying Rents. Notwithstanding the foregoing, no tenant qualifying for a Restricted Unit will be denied continued occupancy of a unit in the Project because, after admission, such tenant's adjusted income increases to exceed the qualifying limit for such Restricted Unit. In the event that, upon an annual recertification, the income of an Eligible Household occupying a restricted unit exceeds 140% of Low Income, the Owner shall rent the next available unit in the project to an Eligible Household and, thereafter, the unit occupied by the over-income household will no longer constitute a Restricted Unit pursuant to this agreement.

2.3 Unit Sizes, Design and Location. The Restricted Units shall consist of, forty-two (42) one-bedroom units, sixty-seven (67) two-bedroom units, allocated among affordability categories as set forth in Exhibit B. In renting Restricted Units, Owner shall, to the extent allowed by law, including applicable federal and state housing laws and federal or state sources of financing for the project, give preference in occupancy of the units to households that live or work within the attendance boundaries of the San Juan Unified School District.

2.4 No Subleasing. Restricted Units may not be subleased by tenant. Owner shall ensure that language is contained in all leases and contracts with tenants of the Restricted Units executed by Owner that prohibits subleasing of the Restricted Units

2.5 No Condominium Conversion. Owner shall not convert the Project to condominium or cooperative ownership or sell condominium or cooperative rights to the Project during the term of this Agreement.

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2.6 Non-Discrimination; Compliance with Fair Housing Laws.

2.6.1 Fair Housing. Owner shall comply with state and federal fair housing laws in the marketing and rental of the units in the Project. Owner shall accept as tenants, on the same basis as all other prospective tenants, persons who are recipients of federal certificates or vouchers for rent subsidies pursuant to the existing Section 8 program or any successor thereto.

2.6.2 Non-Discrimination. Owner covenants for itself and its successors and assigns that there shall be no discrimination against or segregation of any person or group of persons on account of any basis listed in Government Code section 12955 (a) or (d), as those bases are defined in Government Code sections 12926, 12926.1, (m), section 12955 (p) (1), and section 12955.2 in the sale, lease, sublease, transfer, use, occupancy, tenure or enjoyment of the Project or the Property, nor shall Owner or any person claiming under or through Owner establish or permit any such practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, or vendees in the Property. Owner shall each ensure that language prohibiting such discrimination shall be included in all deeds, leases and contracts executed by Owner or its successors and assigns with respect to the Project. The foregoing covenants shall run with the land.

3. Reporting Requirements.

3.1. Tenant Certification. Owner or Owner's authorized agent shall obtain from each Eligible Household prior to initial occupancy of each Restricted Unit, and on every anniversary thereafter, a written certificate containing all of the following in such format and with such supporting documentation as City may reasonably require:

(a) The identity of each other member of the household or such other information reasonably required to demonstrate compliance with Section 2.1 above; and

(b) Owner shall retain such certificates for not less than three (3) years, and upon City's request, shall make the originals available for inspection by City and shall provide copies of such certificates to City.

3.2 Annual Report; Inspections. Owner shall submit an annual report ("**Annual Report**") to the City in form satisfactory to City, together with a certification that the Project is in compliance with the requirements of this Agreement. The Annual Report shall, at a minimum, include the following information for each dwelling unit in the Project: (i) unit number; (ii) number of bedrooms; (iii) current rent and other charges; (iv) dates of any vacancies during the previous year; (v) number of people residing in the unit; (vi) total household income of residents for each unit; (vii) documentation of source of household income; and (vii) the information required under Section 3.1.

Upon City's request, Owner shall include with the Annual Report, an income recertification for each household, documentation verifying tenant eligibility, and such additional information as City may reasonably request from time to time in order to show compliance with this Agreement. The Annual Report must conform to the format requested by City; provided however, during such time that the Project is subject to a regulatory agreement restricting occupancy and/or rents pursuant to requirements imposed in connection with the use of federal

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low-income housing tax credits or tax-exempt financing, Owner may satisfy the requirements of this Section by providing City with a copy of compliance reports required in connection with such financing.

Owner shall permit representatives of City to enter and inspect the Property and the Project during reasonable business hours in order to monitor compliance with this Agreement upon 24-hours advance notice of such visit to Owner or to Owner's management agent.

4. Term of Agreement.

4.1 Term of Restrictions. This Agreement shall remain in effect through the fifty-fifth (55th) anniversary of the issuance of a certificate of occupancy (or its equivalent) for the Project.

4.2 Effectiveness Succeeds Conveyance of Property. This Agreement is effective and fully binding for the full term of fifty-five (55) years regardless of any sale, assignment, transfer, or conveyance of the Property or the Project or any part thereof or interest therein unless this Agreement is terminated earlier by City in a recorded writing.

4.3 Reconveyance. Upon the termination of this Agreement, the Parties agree to execute and record appropriate instruments to release and discharge the terms of this Agreement; provided, however, the execution and recordation of such instruments are not necessary or a prerequisite to the termination of this Agreement in accordance with its terms.

5. Binding Upon Successors; Covenants to Run with the Land. Owner hereby subjects its interest in the Property and the Project to the covenants and restrictions set forth in this Agreement. The City and Owner hereby declare their express intent that the covenants and restrictions set forth herein are covenants running with the land and are binding upon and inure to the benefit of the heirs, administrators, executors, successors in interest, transferees, and assigns of Owner and City, regardless of any sale, assignment, conveyance or transfer of the Property, the Project or any part thereof or interest therein. Any successor-in-interest to Owner, including without limitation any purchaser, transferee or lessee of the Property or the Project (other than the tenants of the individual dwelling units within the Project) will be subject to all of the duties and obligations imposed hereby for the full term of this Agreement. Each and every contract, deed, ground lease or other instrument affecting or conveying the Property or the Project or any part thereof, shall conclusively be held to have been executed, delivered and accepted subject to the covenants, restrictions, duties and obligations set forth herein, regardless of whether such covenants, restrictions, duties and obligations are set forth in such contract, deed, ground lease or other instrument. If any such contract, deed, ground lease or other instrument has been executed prior to the date hereof, Owner hereby covenants to obtain and deliver to City an instrument in recordable form signed by the parties to such contract, deed, ground lease or other instrument pursuant to which such parties acknowledge and accept this Agreement and agree to be bound hereby.

Owner agrees for itself and for its successors that in the event that a court of competent jurisdiction determines that the covenants herein do not run with the land, such covenants shall be enforced as equitable servitudes against the Property and the Project in favor of City.

6. Property Management; Repair and Maintenance; Marketing.

6.1 Management Responsibilities. Owner shall be responsible for all management functions with respect to the Property, the Project and the Restricted Units including without limitation the selection of tenants, certification and recertification of household income and eligibility, evictions, collection of rents and deposits, maintenance, landscaping, routine and extraordinary repairs, replacement of capital items, and security. Except as City may otherwise agree in writing, City shall have no responsibility for management or maintenance of the Property or the Project.

6.2 Management Entity. City has the right to review the qualifications of the management entity proposed by Owner for the Project. The contracting of management services to a management entity shall not relieve Owner of its primary responsibility for proper performance of management duties.

6.3 Repair, Maintenance and Security. Throughout the term of this Agreement, Owner shall at its own expense, maintain the Property and the Project in good physical condition, in good repair, and in decent, safe, sanitary, habitable and tenantable living conditions in conformity with all applicable state, federal, and local laws, ordinances, codes, and regulations. Without limiting the foregoing, Owner agrees to maintain the Project and the Property (including without limitation, the residential units, common meeting rooms, common areas, landscaping, driveways and walkways) in a condition free of all waste, nuisance, debris, unmaintained landscaping, graffiti, disrepair, abandoned vehicles/appliances, and illegal activity, and shall take all reasonable steps to prevent the same from occurring on the Property or at the Project. Owner shall prevent and/or rectify any physical deterioration of the Property and the Project and shall make all repairs, renewals and replacements necessary to keep the Property and the improvements located thereon in good condition and repair. Owner shall provide adequate security services for occupants of the Project.

6.3.1 City's Right to Perform Maintenance. In the event that Owner breaches any of the covenants contained in Section 6.3, and such default continues for a period of ten (10) days after written notice from City (with respect to graffiti, debris, and waste material) or thirty (30) days after written notice from City (with respect to landscaping, building improvements and general maintenance) or such longer period as is reasonably necessary to remedy the condition, then City, in addition to any other remedy it may have under this Agreement or at law or in equity, shall have the right, but not the obligation, to enter upon the Property and perform all acts and work necessary to protect, maintain, and preserve the improvements and the landscaped areas on the Property. All costs expended by City in connection with the foregoing, constitute an indebtedness, and must be paid by Owner to City upon demand. All such sums remaining unpaid thirty (30) days following delivery of City's invoice therefor will bear interest at the rate of 10% per annum and may be collected by the City by recording a lien on the property.

6.4 Marketing and Management Plan. Not later than 180 calendar days following the issuance of the first building permit for the Project, Owner shall submit for City review and approval, a plan for marketing and managing the Property ("**Marketing and Management Plan**"). The Marketing and Management Plan should address in detail how Owner plans to market the Restricted Units to prospective Eligible Households in accordance with fair housing laws and this Agreement, Owner's tenant selection criteria, and how Owner plans to certify the eligibility of

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Eligible Households. The Plan must describe the management team and address how the Owner and the management entity plan to manage and maintain the Property and the Project. The Plan must include the proposed management agreement and the form of rental agreement that Owner proposes to enter into with Project tenants. Owner shall abide by the terms of the Marketing and Management Plan in marketing, managing, and maintaining the Property and the Project, and throughout the term of this Agreement, shall submit proposed modifications to City for its review and approval.

6.5 Approval of Amendments. If City has not responded to any submission of the Management and Marketing Plan, the proposed management entity, or a proposed amendment or change to any of the foregoing within 30 days following City's receipt of such plan, proposal or amendment, the plan, proposal or amendment will be deemed approved by City.

6.6 Fees, Taxes, and Other Levies. Owner shall be responsible for payment of all fees, assessments, taxes, charges, liens and levies, including without limitation possessory interest taxes, if applicable, imposed by any public or utility entity with respect to the Property or the Project, and shall pay such charges prior to delinquency. However, Owner shall not be required to pay any such charge as long as (a) Owner is contesting such charge in good faith and by appropriate proceedings, (b) Owner maintains reserves adequate to pay any contested liabilities, and (c) on final determination of the proceeding or contest, Owner immediately pays or discharges any decision or judgment rendered against it, together with all costs, charges and interest. Nothing contained in the foregoing shall prevent Owner from applying for any applicable exemption.

6.7 Insurance Coverage. Prior to the initial final inspection of any portion of the Project, and continuing throughout the term of this Agreement Owner shall comply with the requirements set forth in Exhibit C, and shall, at Owner's expense, maintain in full force and effect insurance coverage as specified in Exhibit C; provided however, during such time that lenders or low-income housing tax credit investors providing financing for the Project impose insurance requirements that are inconsistent with the requirements set forth in Exhibit C, Owner may satisfy the requirements of this Section by meeting the requirements of such lenders or investors. Notwithstanding the foregoing, throughout the term hereof, Owner shall comply with the provisions of Exhibit C pertaining to (i) provision to City of proof of insurance for the Project, (ii) naming of City as additional insured, and (iii) provision to City of notice of cancellation or reduction in coverage.

6.8 Property Damage or Destruction. If any part of the Project is damaged or destroyed, Owner shall repair or restore the same, consistent with the occupancy and rent restriction requirements set forth in this Agreement to the extent insurance proceeds are available for such restoration. Such work must be commenced within 180 days after the damage or loss occurs and shall be completed within one year thereafter or such longer period as may be reasonably necessary to effect the restoration, provided that insurance proceeds are available to be applied to such repairs or restoration within such period and the repair or restoration is financially feasible. During such time that lenders or low-income housing tax credit investors providing financing for the Project impose requirements that differ from the requirements of this Section the requirements of such lenders and investors will prevail.

7. Recordation; No Subordination. This Agreement shall be recorded in the Official Records of Sacramento County. Owner hereby represents, warrants and covenants that with the exception

of the easements of record, absent the written consent of City, this Agreement shall not be subordinated in priority to any monetary lien or encumbrance (other than those pertaining to taxes or assessments) in the Property or the Project. If at the time this Agreement is recorded, any monetary lien or encumbrance has been recorded against the Project in position superior to this Agreement, upon the request of City, Owner hereby covenants and agrees to promptly undertake all action necessary to clear such matter from title or to subordinate such interest to this Agreement consistent with the intent of and in accordance with this Section 7, and to provide such evidence thereof as City may reasonably request.

8. Transfer and Encumbrance.

8.1 Restrictions on Transfer and Encumbrance. During the term of this Agreement, Owner shall not make or permit the occurrence of any transfer of the Project or the Property ("**Transfer**") without the prior written consent of the City.

8.2 Prerequisites to Transfers. The City shall require, as a prerequisite to any **Transfer**, (a) a copy of the proposed transferee's organizational documents and the final form of the agreement effectuating such transfer, (b) adequate evidence that the Project is and shall continue to be operated in compliance with this Agreement, (c) adequate evidence of the proposed transferee's financials to demonstrate its ability to meet all the requirements of this Agreement, and (d) the transferee executes all documents reasonably requested by the City with respect to the assumption of the Owner's obligations under this Agreement, and upon reasonable request of City, delivers to the City an opinion of transferee's counsel to the effect that this Agreement is the valid, binding and enforceable obligation of such transferee.

8.3 Encumbrances. Owner agrees to use best efforts to ensure that any deed of trust secured by the Project for the benefit of a lender ("Third-Party Lender") contain a provision that the Third-Party Lender shall use its best efforts to provide to City a copy of any notice of default issued to Owner concurrently with provision of such notice to Owner (provided however, the failure to do so shall not impair such Third-Party Lender's rights and remedies).

8.4 Mortgagee Protection. No violation of any provision contained herein shall defeat or render invalid the lien of any mortgage or deed of trust made in good faith and for value upon all or any portion of the Project or the Property, and the purchaser at any trustee's sale or foreclosure sale shall not be liable for any violation of any provision hereof occurring prior to the acquisition of title by such purchaser. Such purchaser shall be bound by and subject to this Agreement from and after such trustee's sale or foreclosure sale. Promptly upon determining that a violation of this Agreement has occurred, City shall give written notice to the holders of record of any mortgages or deeds of trust encumbering the Project or the Property that such violation has occurred.

9. Default and Remedies.

9.1 Events of Default. The occurrence of any one or more of the following events shall constitute an event of default hereunder ("**Event of Default**"):

(a) The occurrence of a Transfer in violation of Section 8 hereof;

(b) Owner's failure to maintain insurance on the Property and the Project as required hereunder, and the failure of Owner to cure such default within 10 days after receipt of written notice from City.

(c) Subject to Owner's right to contest the following charges, Owner's failure to pay taxes or assessments due on the Property or the Project prior to the delinquency date or failure to pay any other charge that may result in a lien on the Property or the Project, and Owner's failure to cure such default within 10 days after receipt of written notice from City.

(d) Owner's default in the performance of any term, provision or covenant under this Agreement (other than an obligation enumerated in this Subsection 9.1), and unless such provision specifies a shorter cure period for such default, the continuation of such default for ten (10) days in the event of a monetary default or thirty (30) days in the event of a non-monetary default following the date upon which City provides written notice of the default to Owner, or if the nature of any such non-monetary default is such that it cannot be cured within 30 days, Owner's failure to commence to cure the default within thirty (30) days and thereafter prosecute the curing of such default with due diligence and in good faith, but in no event longer than 120 days from receipt of the notice of default.

The City will provide concurrent notice of any such default to Owner's limited partner and to any lender with a deed of trust encumbering the Project who provides the City with a written request for notice. The City will accept the tender of any cure by any such limited partner or lender as if such cure were tendered by Owner.

9.2 Remedies. If within the applicable cure period, Owner fails to cure a default or fails to commence to cure and diligently pursue completion of a cure, as applicable, or if a cure is not possible, City may proceed with any of the following remedies:

(a) Bring an action for equitable relief seeking the specific performance of the terms and conditions of this Agreement, and enjoining, abating, or preventing any violation of such terms and conditions, and seeking declaratory relief; and

(b) For violations of obligations with respect to rents for Restricted Units, impose as liquidated damages a charge in an amount equal to the actual amount collected in excess of the Qualifying Rent; and

(c) Pursue any other remedy allowed at law or inequity.

9.3 Remedies Cumulative. Each of the remedies provided herein is cumulative and not exclusive. The City may exercise from time to time any rights and remedies available to it under applicable law or in equity, in addition to, and not in lieu of, any rights and remedies expressly provided in this Agreement.

10. Indemnification. Notwithstanding the insurance coverage required hereunder, Owner shall defend (with counsel approved by City), indemnify and hold the City and its officials, officers, directors, employees, and agents (collectively, the "**Indemnified Parties**") harmless from and against any and all losses, damages, liabilities, claims, demands, judgments, actions, court costs, and legal or other expenses (including reasonable attorneys' fees) which an Indemnified Party may

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incur as a result of (1) Owner's failure to perform any obligation as and when required by this Agreement; (2) any failure of Owner's representations or warranties to be true and complete in all material respects when made; or (3) any act or omission by Owner, or any of Owner's contractors, subcontractors, agents, employees, licensees or suppliers with respect to the Project or the Property, except to the extent that such losses are caused by the sole or gross negligence or willful misconduct of such Indemnified Party. Owner shall pay immediately upon an Indemnified Party's demand any amounts owing under the indemnity provided under this Section. The duty of Owner to indemnify includes the duty to defend the Indemnified Party in any court action, administrative action, or other proceeding brought by any third party arising in connection with the Project or the Property with counsel reasonably approved by City. Owner's duty to indemnify the Indemnified Parties shall survive the expiration or earlier termination of this Agreement.

11. Miscellaneous.

11.1 Amendments. This Agreement may be amended or modified only by a written instrument signed by both Parties.

11.2 No Waiver. Any waiver by City of any term or provision of this Agreement must be in writing. No waiver shall be implied from any delay or failure by City to take action on any breach or default hereunder or to pursue any remedy allowed under this Agreement or applicable law. No failure or delay by City at any time to require strict performance by Owner of any provision of this Agreement or to exercise any election contained herein or any right, power or remedy hereunder shall be construed as a waiver of any other provision or any succeeding breach of the same or any other provision hereof or a relinquishment for the future of such election.

11.3 Notices. Except as otherwise specified herein, all notices to be sent pursuant to this Agreement shall be made in writing, and sent to the Parties at their respective addresses specified below or to such other address as a Party may designate by written notice delivered to the other parties in accordance with this Section. All such notices shall be sent by:

(a) personal delivery, in which case notice is effective upon delivery;

(b) certified or registered mail, return receipt requested, in which case notice shall be deemed delivered upon receipt if delivery is confirmed by a return receipt;

(c) nationally recognized overnight courier, with charges prepaid or charged to the sender's account, in which case notice is effective on delivery if delivery is confirmed by the delivery service;

(d) facsimile transmission, in which case notice shall be deemed delivered upon transmittal, provided that (a) a duplicate copy of the notice is promptly delivered by first-class or certified mail or by overnight delivery, or (b) a transmission report is generated reflecting the accurate transmission thereof. Any notice given by facsimile shall be considered to have been received on the next business day if it is received after 5:00 p.m. recipient's time or on a nonbusiness day.

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City:

City of Citrus Heights
6360 Fountain Square Dr.
Citrus Heights, CA 95621
Attention: City Manager

Owner:

Paul Stamas
Ionic Enterprises
3007 Douglas Blvd #170
Roseville, CA 95661

11.4 Further Assurances. The Parties shall execute, acknowledge and deliver to the other such other documents and instruments, and take such other actions, as either shall reasonably request as may be necessary to carry out the intent of this Agreement.

11.5 Parties Not Co-Venturers. Nothing in this Agreement is intended to or shall establish the Parties as partners, co-venturers, or principal and agent with one another.

11.6 Action by the City. Except as may be otherwise specifically provided herein, whenever any approval, notice, direction, consent or request by the City is required or permitted under this Agreement, such action shall be in writing, such consent or approval will not be unreasonably withheld, conditioned or delayed, and such action may be given, made or taken by the City Manager or by any person who shall have been designated by the City Manager, without further approval by the City Council.

11.7 Non-Liability of City and City Officials, Employees and Agents. No member, official, employee or agent of the City shall be personally liable to Owner or any successor in interest, in the event of any default or breach by the City, or for any amount of money which may become due to Owner or its successor or for any obligation of City under this Agreement.

11.8 Headings; Construction. The headings of the sections and paragraphs of this Agreement are for convenience only and shall not be used to interpret this Agreement. The language of this Agreement shall be construed as a whole according to its fair meaning and not strictly for or against any Party.

11.9 Time is of the Essence. Time is of the essence in the performance of this Agreement.

11.10 Governing Law. This Agreement shall be construed in accordance with the laws of the State of California without regard to principles of conflicts of law. Venue for any litigation shall lie in Sacramento County courts.

11.11 Attorneys' Fees and Costs. If any legal or administrative action is brought to interpret or enforce the terms of this Agreement, the prevailing party shall be entitled to recover all reasonable attorneys' fees and costs incurred in such action.

11.12 Severability. If any provision of this Agreement is held invalid, illegal, or unenforceable by a court of competent jurisdiction, the validity, legality, and enforceability of the remaining provisions shall not be affected or impaired thereby.

11.13 Entire Agreement; Exhibits. This Agreement and the Exhibits attached hereto contain the entire agreement of Parties with respect to the subject matter hereof, and supersedes all prior oral or written agreements between the Parties with respect thereto. The Exhibits attached hereto are incorporated herein by this reference. Notwithstanding, nothing in this Agreement shall be construed to lessen the requirements and conditions set forth in City rules, regulations and ordinances or the conditions imposed upon the Project by the City.

11.14 Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be an original and all of which together shall constitute one agreement.

11.15 Incorporation of Recitals. The Recitals set forth above are incorporated herein as if fully set forth here.

11.16 Assignment. Owner may assign this Agreement only with the prior written consent of the City, which shall not be reasonably withheld. As a prerequisite to the City considering Owner's request, City may require the proposed assignee of Owner to provide written assurances, to the reasonable satisfaction to the City, as to the proposed assignee's financial and related ability to accept the assignment from Owner.

SIGNATURES ON FOLLOWING PAGE.

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IN WITNESS WHEREOF, the Parties have executed this Agreement effective as of the date first written above.

OWNER

Paul Stamas
Ionic Enterprises, LLC

_____

_____

CITY OF CITRUS HEIGHTS

By:_____
City Manager

Attest:_____
City Clerk

Approved as to form:

_____
City Attorney

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Exhibit A

PROPERTY DESCRIPTION

Real property in the City of Citrus Heights, County of Sacramento, State of California, described as follows:

(Attach legal description)

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Exhibit B

UNIT MIX, RENT AND OCCUPANCY RESTRICTIONS

Restricted Unit Type	**Number of Restricted Units**	**Maximum Initial Income Limit**
1- Bedroom	11 Very Low Income	50% of AMI
1- Bedroom	31 Low Income	60% of AMI
2- Bedroom	67 Low Income	60% of AMI
Total Restricted Units	109 Low Income	60% of AMI
Total Non-Restricted Units	1	N/A
Total Units	110	

AMI = Area Median Income

Maximum Initial Income Limit = maximum income for a household to qualify for initial occupancy in the specified Restricted Unit.

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Exhibit C

INSURANCE REQUIREMENTS
[IONIC TO REVIEW]

Prior to issuance of building permits for the Project and throughout the term of this Agreement, Owner shall obtain and maintain, at Owner's expense, the following policies of insurance.

A. Property Insurance. Insurance for the risks of direct physical loss, with minimum coverage being the perils insured under the standard Causes of Loss - Special form (ISO Form CP 10 30) or its equivalent, covering all improvements, all fixtures, equipment and personal property, located on or in, or constituting a part of, the Property ("**Improvements**"), in an amount equal to one hundred percent (100%) of the full replacement cost of all such property. The insurance shall (a) cover explosion of steam and pressure boilers and similar apparatus, if any, located on the Property, and (b) cover floods if the Property is in a Special Hazard Area, as determined by the Federal Emergency Management City or as shown on a National Flood Insurance Program flood map. The insurance required hereunder shall be in amounts sufficient to prevent Owner from becoming a co-insurer under the terms of the applicable policies, with not more than a fifty thousand dollars ($50,000) deductible (or such higher deductible approved by the City, which approval shall not be unreasonably withheld) from the loss payable for any casualty. The policies of insurance carried in accordance with this Paragraph A shall contain a "replacement cost endorsement" and an "increased cost of construction endorsement."

B. Liability Insurance. Commercial general liability insurance on an "occurrence basis" covering all claims with respect to injury or damage to persons or property occurring on, in or about the Property and the Improvements. The limits of liability under this Paragraph B shall be not less than two million dollars ($2,000,000) combined single limit per occurrence, with a deductible no greater than fifty thousand dollars ($50,000) or such higher deductible as may be approved by City, which approval shall not be unreasonably withheld.

The insurance shall also include coverage for:

(i) liability for bodily injury or property damage arising out of the use, by or on behalf of Owner, of any owned, non-owned, leased or hired automotive equipment in the conduct of any and all operations conducted in connection with the Project or the Property;

(ii) premises and operations including, without limitation, bodily injury, personal injury, death or property damage occurring upon, in or about the Property or the Improvements on any elevators or any escalators therein and on, in or about the adjoining sidewalks, streets and passageways;

(iii) broad form property damage liability;

(iv) additional insured and primary insured endorsements protecting the City and its respective elected and appointed officials, officers, employees and agents;

(v) personal injury endorsement.

C. Worker's Compensation Insurance. Worker's compensation insurance, in the amount required under then applicable state law, covering Owner's employees, if any, at work in or upon the Property or engaged in services or operations in connection with the Project or the Property. Owner shall require that any contract entered into by Owner with regard to work to be undertaken on the Property include a contractual undertaking by the contractor to provide worker's compensation insurance for its employees in compliance with applicable state law.

D. Course of Construction Insurance. Course of construction insurance in the same amount as required in Paragraph A above for property insurance, covering all construction activities on the Property.

E. General Insurance Provisions. All policies of insurance provided for in this Exhibit shall be provided under valid and enforceable policies, in such forms and amounts as hereinbefore specified, issued by insurers licensed to do business in the State of California (or approved to do business in California and listed on the California Department of Insurance list of Eligible Surplus Lines Insurers or successor listing) and having a rating of A-VII or better in Best Insurance Guide or, if Best Insurance Guide is no longer in existence, a comparable rating from a comparable rating service. Prior to the issuance of building permits for the Project, and thereafter, not less than thirty (30) days prior to the expiration date of each policy furnished pursuant to this Exhibit D, Owner shall deliver to City certificates evidencing the insurance required to be carried by Owner under this Exhibit D. If requested by City, Owner shall deliver within ten (10) days following such request, certified, complete copies of the insurance policies required hereunder. Insurance policies to be provided hereunder shall meet the following requirements:

(a) Each policy of insurance obtained pursuant to this Agreement, other than worker's compensation insurance, shall contain endorsements which provide (i) a waiver by the insurer of the right of subrogation against City, Owner or any tenant of the Project for negligence of any such person, (ii) a statement that the insurance shall not be invalidated should any insured waive in writing prior to the loss any or all right of recovery against any party for loss accruing to the property described in the insurance policy, and (iii) a provision that no act or omission of Owner which would otherwise result in forfeiture or reduction of the insurance therein provided shall affect or limit the obligation of the insurance company to pay the amount of any loss sustained.

(b) By endorsements, City and its respective elected and appointed officials, officers, employees and agents shall be named as additional insured under the liability insurance required to be maintained by Owner hereunder.

(c) Each policy required hereunder shall include a Notice of Cancellation or Change in Coverage Endorsement which shall provide that such policy shall not be cancelled or materially changed without at least thirty (30) days' prior written notice (ten (10) days for nonpayment of premium) by registered or certified mail to City.

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(d) All insurance policies shall provide that there shall be no exclusion from coverage for cross liability among the listed insureds.

(e) Any certificate of insurance applicable to course of construction insurance to be maintained shall be deposited with City prior to commencement of construction of any Improvements.

(f) Each policy shall contain an endorsement that provides that the insurance applies separately to each insured that is seeking coverage or against whom a claim is made, except with respect to the limits of liability.

(g) Each policy shall be written as a primary policy not contributing with and not in excess of coverage that City may carry.

(h) Each policy shall expressly provide that City shall not be required to give notice of accidents or claims and that City shall have no liability for premiums.

F. Blanket Policies. Any insurance provided for in this Exhibit D may be placed by a policy or policies of blanket insurance; provided, however, that such policy or policies provide that the amount of the total insurance allocated to the Property and the Project shall be such as to furnish protection the equivalent of separate policies in the amounts herein required, and provided further that in all other respects any such policy or policies shall comply with the other provisions of this Agreement.

G. Waiver of Subrogation. To the extent permitted by law and the policies of insurance required to be maintained hereunder, and without affecting such insurance coverage, City and Owner each waive any right to recover against the other (a) damages for injury or death of persons, (b) damage to property, (c) damage to the Property or the Improvements or any part thereof, or (d) claims arising by reason of any of the foregoing, to the extent that such damages and/or claims are covered (and only to the extent of such coverage) by insurance actually carried by either City or Owner. This provision is intended to restrict each party (as permitted by law) to recover against insurance carriers to the extent of such coverage, and waive fully, and for the benefit of each, any rights and/or claims which might give rise to a right of subrogation in any insurance carrier.

H. Compliance with Policy Requirements. Owner shall observe and comply with the requirements of all policies of public liability, fire and other policies of insurance at any time in force with respect to the Property, and Owner shall so perform and satisfy the requirements of the companies writing such policies that at all times companies of good standing s**hall be willing to write or to continue such insurance.**

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ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Sacramento)

On_____before me,_____, Notary Public, personally appeared, _____, proved to me the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under penalty of perjury under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature_____

3082715.2

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Attachment 5

Traffic Impact Study

Fair Oaks Senior Apartments
Sacramento, California

September 27, 2019

Prepared for:

City of Citrus Heights

Prepared by:

Kimley»Horn
555 Capitol Mall, Suite 300
Sacramento, California 95814

Phone: (916) 858-5800

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INTRODUCTION

Purpose

This report documents the results of a traffic impact analysis completed for the proposed Fair Oaks Senior Apartments project (the "Proposed Project"), located along Fair Oaks Boulevard, directly west of the Fair Oaks Boulevard intersection with Walnut Hills Way in Citrus Heights, California. The purpose of this impact analysis is to identify potential environmental impacts to transportation facilities as required by the California Environmental Quality Act (CEQA). This study was performed in accordance with the City of Citrus Heights' Transportation Impact Study Guidelines[1].

The remaining sections of this report document the Proposed Project, analysis methodologies, impacts and mitigation, and general study conclusions.

Proposed Project Description

Kimley-Horn understands the project applicant proposes to construct senior apartment buildings along Fair Oaks Boulevard, directly west of the Fair Oaks Boulevard intersection with Walnut Hills Way in Citrus Heights. The Proposed Project is located at 12057 Fair Oaks Boulevard. The project applicant proposes to construct 110 senior apartment units on the vacant 5.07-acre site.

The Proposed Project location is shown in **Figure 1**. Access to the Project site is proposed to be from an existing full-access driveway along Fair Oaks Boulevard which is proposed to be improved by the Project, as well as a new, full-access driveway connected to the existing Celine Drive. The two driveways are depicted in the site plan in **Figure 2**.

Study Area

Figure 3 illustrates the study facilities, existing traffic control, and existing lane configurations. The following transportation facilities are included in this evaluation:

Intersections

1. Fair Oaks Boulevard @ Greenback Lane
2. Fair Oaks Boulevard @ Sunrise East Way
3. Fair Oaks Boulevard @ Walnut Hills Way
4. Fair Oaks Boulevard @ Treecrest Avenue
5. Fair Oaks Boulevard @ Madison Avenue (Sacramento County)
6. Sunrise Boulevard @ Kingswood Drive
7. Kingswood Drive @ Celine Drive

Roadway Segments

1. Fair Oaks Boulevard, between Sunrise East Way and Greenback Lane
2. Fair Oaks Boulevard, between Treecrest Avenue and Madison Avenue
3. Kingswood Drive, between Sunrise Boulevard and Celine Drive

This traffic impact analysis was conducted for the above-listed study facilities for the following scenarios:

A. Baseline (2019) Conditions
B. Baseline (2019) plus Proposed Project Conditions
C. Baseline plus Approved Projects Conditions
D. Baseline plus Approved Projects plus Proposed Project Conditions
E. Cumulative Conditions
F. Cumulative plus Proposed Project Conditions

[1] *Transportation Impact Study Guidelines,* City of Citrus Heights, February 2013.

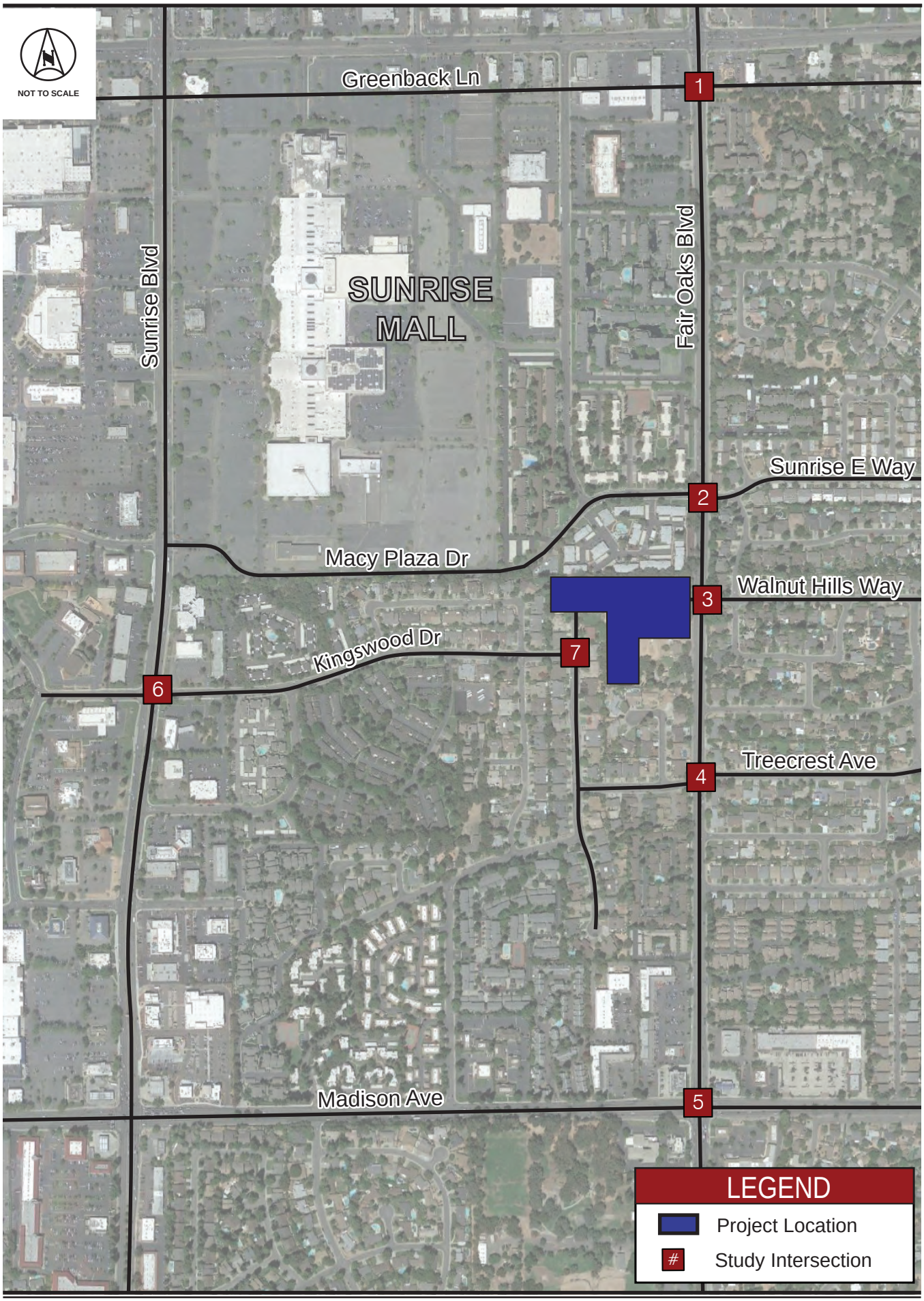

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Figure 1
Project Vicinity Map

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ARCHITECTURAL

P1	PROPOSED SITE PLAN
P2	TYPICAL APARTMENT UNITS
P3	TYPE A + B UNIT LAYOUT
P4A	TYPE A ELEVATIONS
P4B	TYPE B ELEVATIONS
P5	TYPE C + D UNIT LAYOUT
P6A	TYPE C + C1 ELEVATIONS
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P7	TYPE E UNIT LAYOUT
P8	TYPE E ELEVATIONS
P9	TYPE F (CLUB HOUSE) PLAN AND ELEVATIONS
P10	ROOF PLANS
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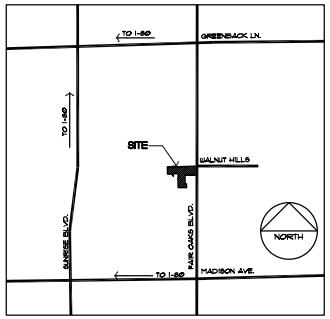
L1	PRELIMINARY LANDSCAPE PLAN
L2	LANDSCAPE ILLUSTRATIONS

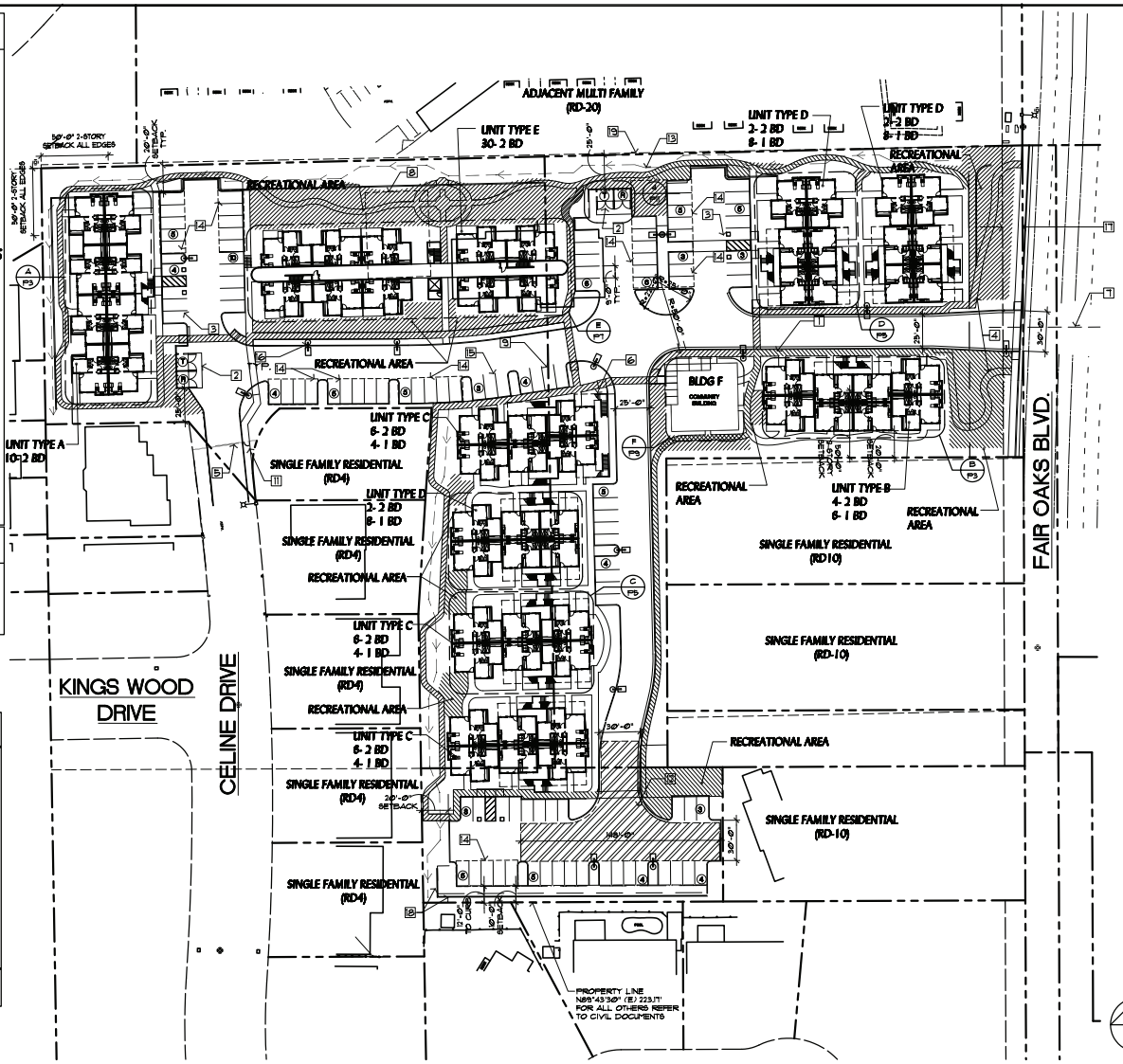
RECREATIONAL AREA

REQUIRED 110 X 200 = 22,000 SF

PROVIDED = 34,465 SF



VICINITY MAP



APARTMENT UNIT MATRIX

APN. 233-0430-002/ 233-0430-041/ 233-0430-007

LOT SIZE 220,705 SF (5.06 AC.)

LOT SIZE (NET AREA) 215,814 SF (4.95 AC.)

ZONING RD-10 (PROPOSED RD-20)

LOT COVERAGE 23.1%

42	ONE BEDROOM
68	TWO BEDROOMS
110	TOTAL

PARKING

6	ACCESSIBLE
0	COMPACT
101	STANDARD

107	TOTAL
121	REQUIRED

KEYNOTES

1. PROPOSED SIDEWALK
2. TRASH ENCLOSURES, CONCRETE MASONRY UNTS TYP.
3. ACCESSIBLE PARKING, TYP.
4. SIDEWALK CONNECTION TO CITY RIGHT OF WAY, TYP.
5. PROPOSED GATE FOR EGRESS OF EMERGENCY VEHICLES AND SANITATION COLLECTION TRUCKS AND RESIDENT ACCESS TO SUNRISE PLACE. FIRE/ DESIGN OPERATION TO BE WORKED WITH CITY OF CITRUS HEIGHTS
6. LANDSCAPE AREAS, REFER TO LANDSCAPE PLANS
7. CENTERLINE OF ENTRANCE TO ALIGN W/ CENTERLINE OF WALNUT HILLSWAY (STREET ACCESS FAIR OAKS BLVD)
8. (E) HOUSE TO BE RELOCATED OFF OF PROPERTY OR DEMOLISHED
9. LOT LINE TO BE ABANDONED
10. FIRE CONTROL ROOMS W/ FIRE ALARM PANEL LOCATIONS TO BE DETERMINED TYP.
11. PEDESTRIAN GATE
12. EMERGENCY VEHICLE ACCESS HAMMERHEAD
    RECREATION AREA (RA)
13. BIO FILTER/ RETENTION GRASSY SWALE, REFER TO CIVIL
14. COVERED PARKING, TYP.
15. STANDARD PARKING 9X19, TYP.
16. AREA POST LIGHT, LED FULL CUT OFF W/ HOUSE SIDE SHIELD, 15' HIGH ON ROUND POLE
17. (E) 15'-0" PUBLIC RIGHT OF WAY @ PARK OAKS BLVD.
18. MASONRY FENCE TO BE INSTALLED @ ALL PROPERTY LINES ABUTTING SINGLE FAMILY RESIDENCES, REFER TO P11 TYP.
19. WROUGHT IRON OR MASONRY FENCE TO BE USED ADJACENT TO MULTIFAMILY RECIDENCE

NORTH

0 20' 40' 80'

SCALE: 1/40"=1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

for ICON Enterprises

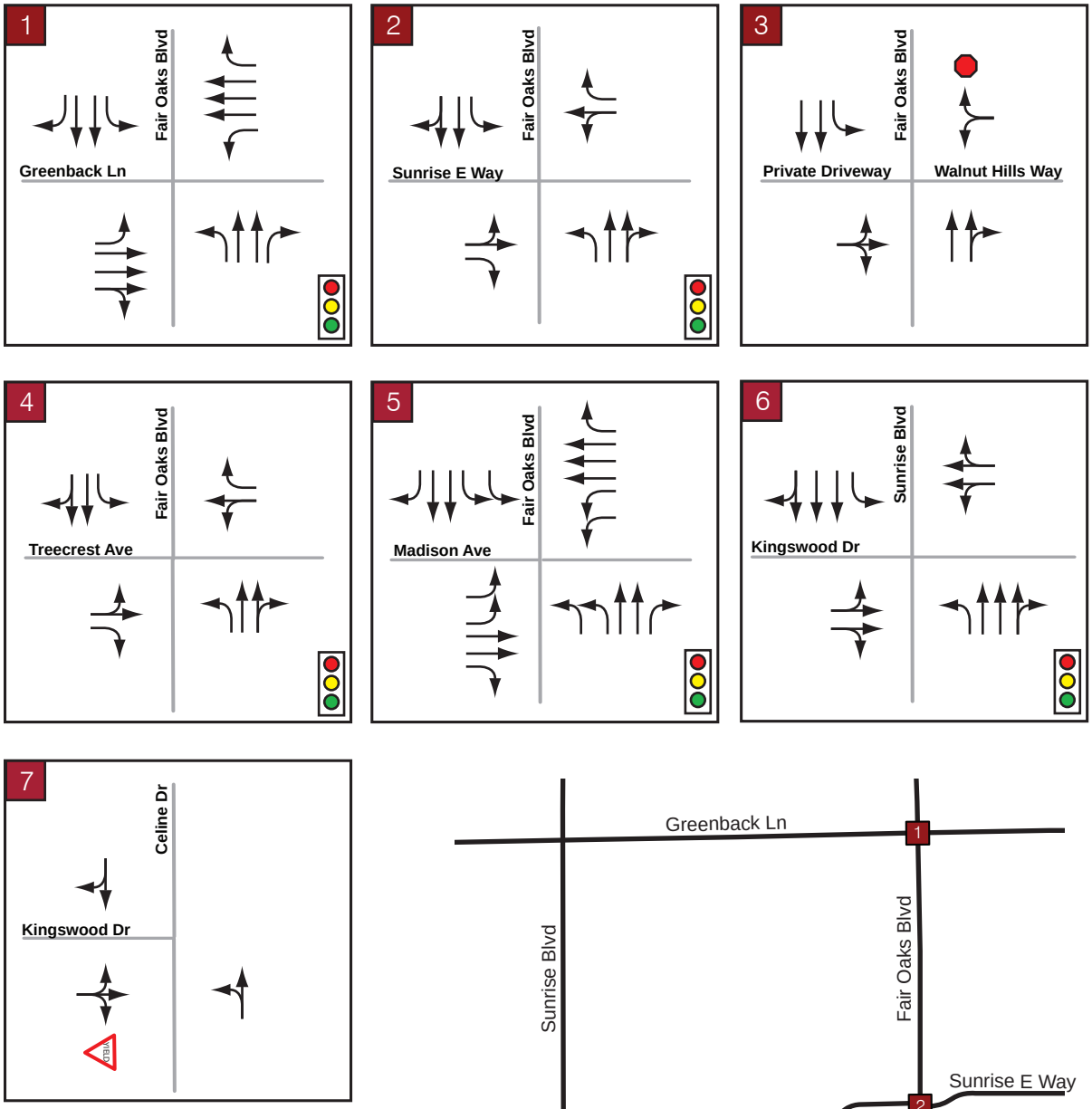
~~February 12 2019~~
March 25 2019

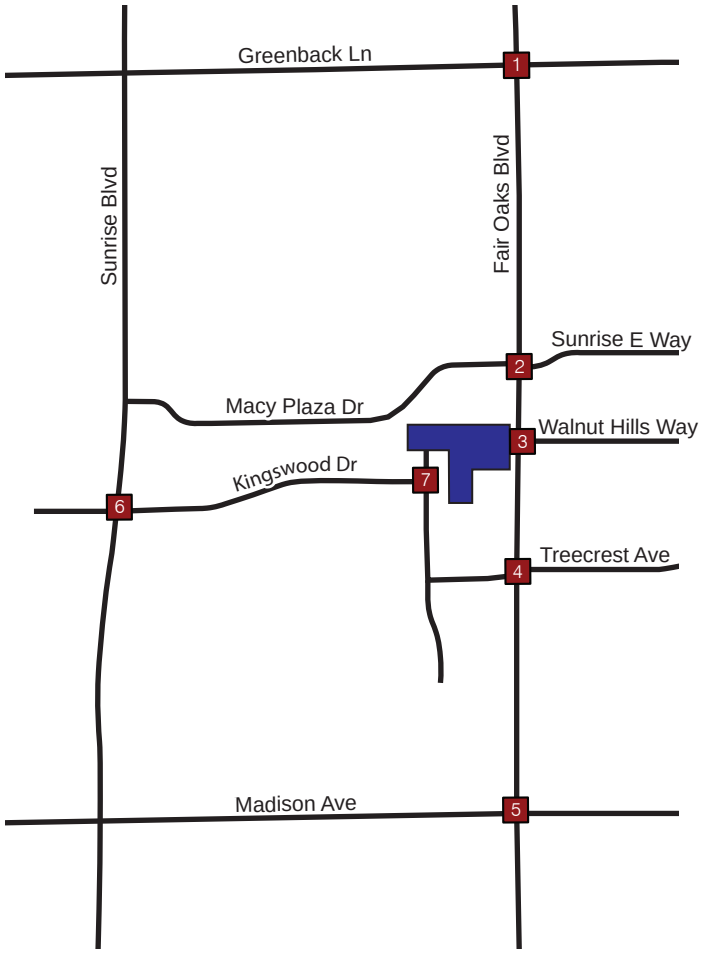
craig MIERS + george SCOTT ARCHITECTS

PROPOSED SITE PLAN P1

Kimley»Horn

Figure 2
Proposed Project Site Plan





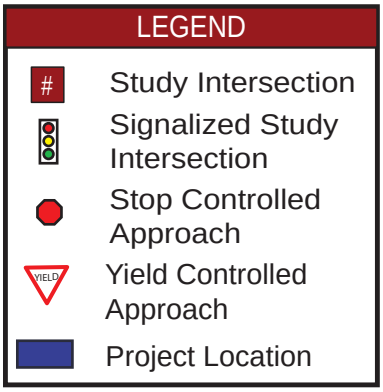


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Figure 3

Existing Study Intersections, Traffic Control, and Lane Geometries

PROJECT AREA ROADWAYS

The following are descriptions of the primary roadways near the Project site.

Fair Oaks Boulevard is north-south arterial bordering the eastern edge of the Project site. Fair Oaks Boulevard connects residential areas with commercial areas to the north and south. Along the Project frontage, Fair Oaks Boulevard has two lanes in each direction as a center two-way left-turn lane (TWLTL). There are currently sidewalks and Class II bicycle facilities along the Project frontage.

Greenback Lane is an east-west arterial north of the Project site. Residential and commercial development are located along Greenback Lane. Greenback Lane connects to Interstate 80.

Madison Avenue is an east-west arterial south of the Project site. Madison Avenue contains smaller commercial land uses and various residential densities land uses.

Sunrise Boulevard is north-south arterial west of the Project site. The portion of Sunrise Boulevard in the vicinity of the Project site mainly contains commercial development, along with residential areas.

Kingswood Drive is a local street west of the Project site and south of Sunrise Mall. Kingswood Drive connects residential areas to the west of the site with Sunrise Boulevard.

Celine Drive is a local street directly west of the Project site that serves as local access for residential areas. South of the Project area, this roadway is named Mike Arthur Court. There are currently sidewalks and Class II bicycle facilities along the Project frontage.

ASSESSMENT OF PROPOSED PROJECT

Proposed Project Trip Generation

The number of trips anticipated to be generated by the Proposed Project was approximated using data included in the *Trip Generation Manual, 10th Edition*, published by the Institute of Transportation Engineers (ITE). ITE Land Use Code 252 (Senior Adult Housing – Attached) was used to represent the senior adult apartments. This land use is summarized in the Trip Generation Manual as housing which consists of "attached independent living developments, including retirement communities, age-restricted housing, and active adult communities." Other potential attached residential land uses in the Trip Generation Manual are not age restricted and therefore, not used for this analysis. The trips anticipated to be generated by the Proposed Project are presented in Table 1.

Table 1 – Proposed Project Trip Generation

Land Use (ITE Code)	Size (Dwelling Units)	Daily Trips	AM Peak-Hour					PM Peak-Hour				
			Total Trips	In		Out		Total Trips	In		Out	
				%	Trips	%	Trips		%	Trips	%	Trips
Senior Adult Housing - Attached (252)	110	418	22	35%	8	65%	14	29	55%	16	45%	13
New Project Trips	**418**		**22**		**8**		**14**	**29**		**16**		**13**

Source: Trip Generation Manual, 10th Edition.

As shown in Table 1, the Proposed Project is estimated to generate 418 new daily trips, with 22 and 29 trips occurring during the AM and PM peak-hours, respectively.

Proposed Project Trip Distribution

The distribution of Proposed Project trips was based on general knowledge of area's traffic patterns, the Proposed Project layout, and engineering judgement. The Proposed Project trip distribution patterns are reflected in Figure 4. The resulting AM and PM peak-hour traffic volumes attributed to the Proposed Project are provided in Figure 5.

TRAFFIC IMPACT ANALYSIS METHODOLOGY

Analysis of transportation facility significant environmental impacts is based on the concept of Level of Service (LOS). The LOS of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity.

Intersection Analysis

Intersection Levels of Service for this study were determined using methods defined in the Highway Capacity Manual, 6th Edition (HCM) and appropriate traffic analysis software. The HCM includes procedures for analyzing side-street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. Table 2 presents intersection LOS definitions as defined in the HCM.

Roadway Segment Analysis

The roadway segment analysis was performed in accordance with the Citrus Height's traffic impact analysis guidelines[1]. While the LOS thresholds provided in the City's guidelines were used to determine whether the project impacted a roadway segment, the analysis of roadway segments involved the comparison of daily segment volumes to the volume thresholds provided in Sacramento County's traffic impact analysis guidelines[2]. This was due to the fact that the City's guidelines do not provide specific volume thresholds.

[2] Traffic Impact Analysis Guidelines, County of Sacramento Department of Transportation, July 2004.

The criteria provide maximum volumes for given service levels for various facility types. Table 3 replicates the applicable County roadway segment LOS criteria.

Table 2 – Intersection Level of Service Criteria

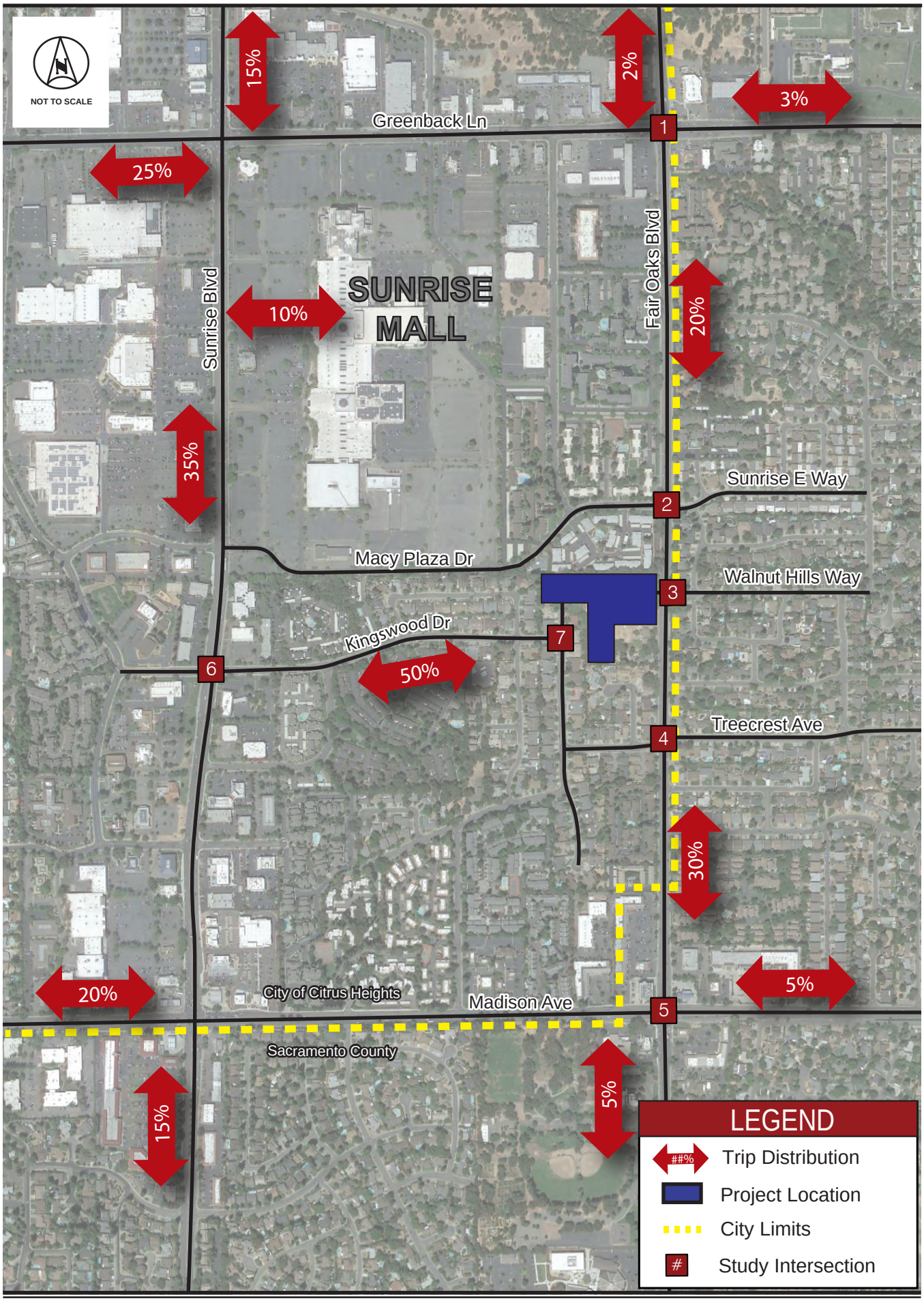
Level of Service (LOS)	Unsignalized	Signalized
	Average Control Delay (sec/veh)	Control Delay per Vehicle (sec/veh)
A	≤ 10	≤ 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Source: Highway Capacity Manual, 2016
Note: SSSC delay is based on the worst approach movement.

Table 3 – Roadway Segment Level of Service Criteria

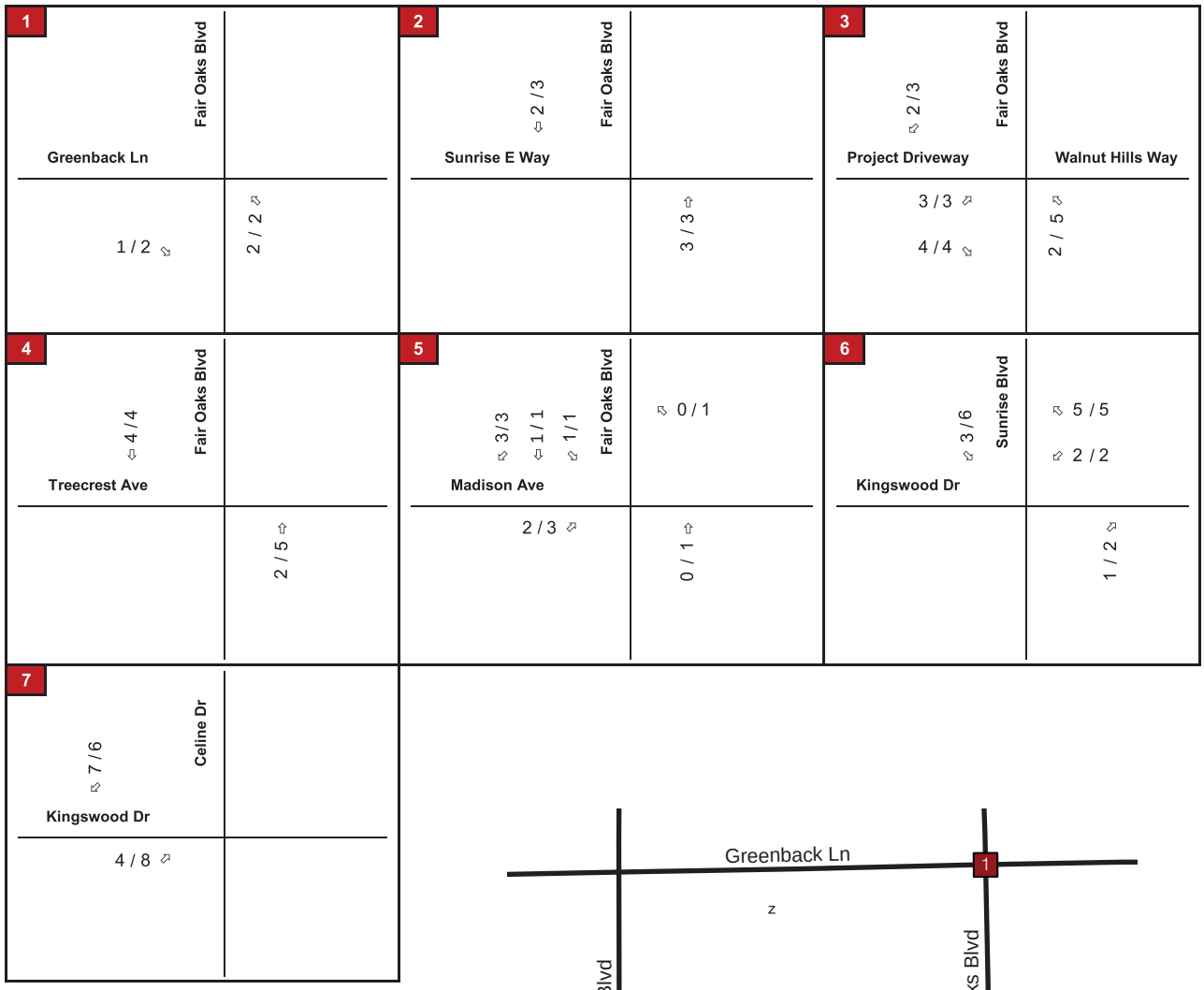
Facility Type	# of Lanes	Maximum Volume for Given Service Level				
		A	B	C	D	E
Residential Collector with Frontage	2	1,600	3,200	4,800	6,400	8,000
Arterial, Moderate Access Control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000

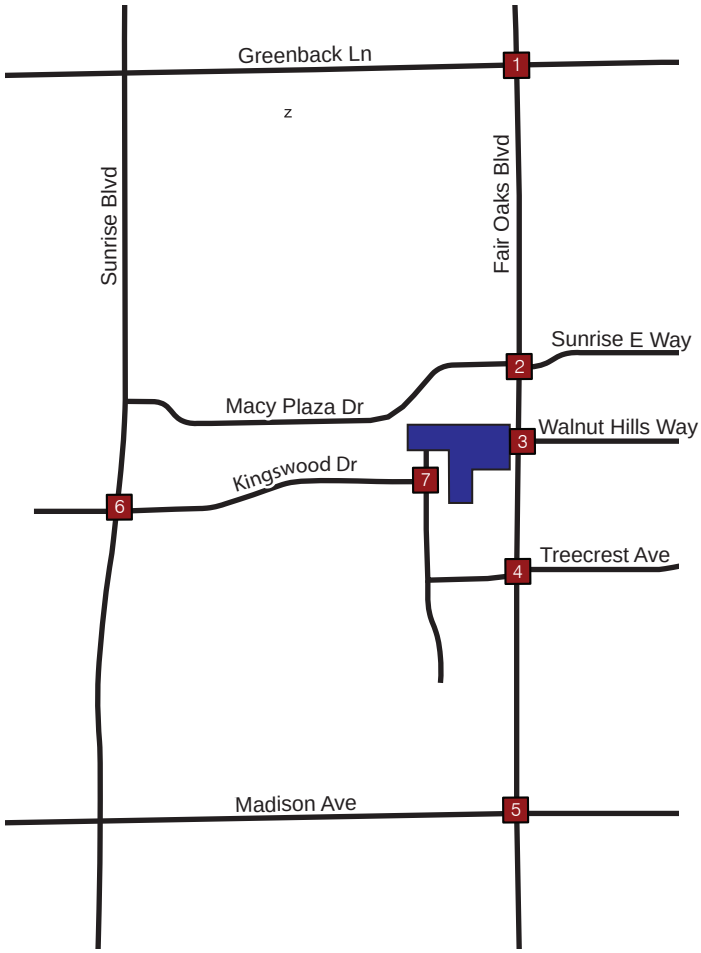
Source: Traffic Impact Analysis Guidelines, Table 1.2, County of Sacramento Department of Transportation, July 2004.



Kimley»Horn

Figure 4
Proposed Project Trip Distribution





LEGEND	
XX/YY	AM/PM Volumes
#	Study Intersection
	Project Location

Kimley»Horn

Figure 5
Project Trip Assignment

BASELINE (2019) CONDITIONS

New weekday AM and PM peak-period turning movement volume traffic counts were collected on February 5, 2019. These counts were conducted between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m. New weekday, 72-hour roadway segment counts were collected between February 5 and February 7, 2019. Baseline (2019) peak-hour turning movement volumes are presented in **Figure 6**, and the traffic count data sheets are provided in **Appendix A**. Analysis worksheets for this scenario are provided in **Appendix B**.

Intersections

Table 4 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in **Table 4**, the study intersections operate between LOS A and LOS D during the AM and PM peak-hours.

Table 4 – Baseline (2019) Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Baseline (2019)	
				Delay	LOS
1	Fair Oaks Boulevard @ Greenback Lane	Signal	AM	51.2	D
			PM	54.8	D
2	Fair Oaks Boulevard @ Sunrise East Way	Signal	AM	14.3	B
			PM	15.1	B
3	Fair Oaks Boulevard @ Walnut Hills Way	SSSC*	AM	0.3 (14.5 WBL)	B
			PM	0.3 (18.1 WBL)	C
4	Fair Oaks Boulevard @ Treecrest Avenue	Signal	AM	13.0	B
			PM	13.4	B
5	Fair Oaks Boulevard @ Madison Avenue	Signal	AM	36.8	D
			PM	36.4	D
6	Sunrise Boulevard @ Kingswood Drive	Signal	AM	12.6	B
			PM	19.5	B
7	Kingswood Drive @ Celine Drive	Yield**	AM	7.8 (8.5 EBL)	A
			PM	8.0 (8.7 EBL)	A

*Unsignalized intersections are reported with the overall intersection delay and LOS followed by the worst movement/approach delay and LOS.
**HCM 6 expects at least one 'Stop' controlled approach at the intersection. As such, Intersection #7 was modeled as a SSSC intersection to obtain HCM 6 results.

Roadway Segments

Table 5 presents the roadway segment operating conditions for this analysis scenario. As indicated in **Table 5**, the roadway segments operate at LOS A or LOS C.

Table 5 – Baseline (2019) Roadway Segment Levels of Service

Scenario	Location	Facility Type	Volume (veh/day)	LOS
Baseline (2019)	Fair Oaks Blvd, between Sunrise E Wy and Greenback Ln	4-Lane Arterial (Moderate Access Control)	18,211	A
	Fair Oaks Blvd, between Treecrest Ave and Madison Ave	4-Lane Arterial (Moderate Access Control)	18,973	A
	Kingswood Dr, between Sunrise Blvd and Celine Dr	Residential Collector with Frontage	3,283	C

1

Fair Oaks Blvd

⇨ 187 / 180	⇦ 104 / 206	
⇩ 508 / 365	⇦ 990 / 1010	
⇘ 187 / 143	⇙ 230 / 164	

Greenback Ln

80 / 186 (19) ⇗	⇖ 172 ⇧ 590 ⇗	
925 / 968 ⇨	114 / 299 / 212 / 235	
153 / 180 ⇘		

2

Fair Oaks Blvd

⇨ 20 / 35	⇦ 20 / 22	
⇩ 849 / 608	⇦ 6 / 7	
⇘ 14 / 25	⇙ 18 / 11	

Sunrise E Way

29 / 38 ⇗	⇖ 96 ⇧ 868 ⇗	
4 / 12 ⇨	38 / 528 / 11 / 29	
70 / 83 ⇘		

3

Fair Oaks Blvd

⇨ 930 / 694	⇦ 8 / 7	
⇩ 6 / 11	⇙ 11 / 8	

Private Driveway

Walnut Hills Way

1 / 0 ⇘	⇖ 1 ⇧ 1000 ⇗	
	0 / 576 / 2 / 12	

4

Fair Oaks Blvd

⇨ 37 / 57	⇦ 16 / 8	
⇩ 874 / 635	⇦ 1 / 0	
⇘ 10 / 8	⇙ 18 / 10	

Treecrest Ave

34 / 77 ⇗	⇖ 46 ⇧ 921 ⇗	
8 / 4 ⇨	28 / 520 / 5 / 11	
63 / 57 ⇘		

5

Fair Oaks Blvd

⇨ 250 / 187	⇦ 133 / 247	
⇩ 464 / 328	⇦ 1077 / 1200	
⇘ 208 / 174	⇙ 123 / 135 (25)	

Madison Ave

153 (30) / 270 (41) ⇗	⇖ 156 ⇧ 491 ⇗	
1034 / 1194 ⇨	141 / 272 / 112 / 114	
137 / 162 ⇘		

6

Sunrise Blvd

⇨ 28 / 37	⇦ 19 / 59	
⇩ 1144 / 1228	⇦ 14 / 20	
⇘ 31 / 81	⇙ 32 / 44	

Kingswood Dr

13 / 38 ⇗	⇖ 21 / 56 (18) ⇧ 1631 ⇗	
19 / 31 ⇨	887 / 26 / 60	
49 / 57 ⇘		

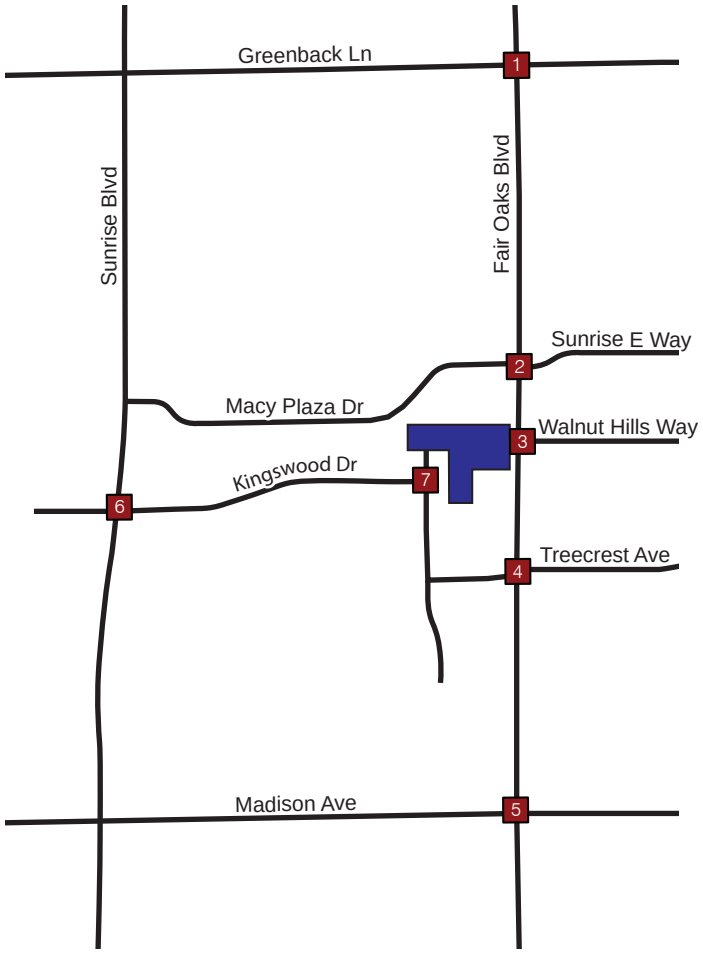
7

Celine Dr

⇦ 1 / 1	⇦ 0 / 1	
⇩ 1	⇙ 1 / 0	

Kingswood Dr

1 / 1 ⇨	⇖ 49 ⇧ 2 ⇗	
48 / 96 ⇘	49 / 0 / 0 / 1	



LEGEND	
XX/YY	AM/PM Volumes
(ZZ)	(U-turn) Volume
	Study Intersection
	Project Location

Kimley»Horn

Figure 6

Baseline (2019) Peak-Hour Traffic Volumes

BASELINE (2019) PLUS PROPOSED PROJECT CONDITIONS

Peak-hour traffic associated with the Proposed Project was added to the Baseline (2019) traffic volumes and levels of service were determined at the study facilities. **Figure 7** provides the AM and PM peak-hour traffic volumes at the study facilities for this analysis scenario. The analysis worksheets for this scenario are provided in **Appendix C**.

Intersections

Table 6 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in **Table 6**, the study intersections operate between LOS A and LOS D with the addition of Proposed Project traffic during the AM and PM peak-hours.

Table 6 – Baseline (2019) and Baseline (2019) plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Baseline (2019)		Baseline plus Project (2019)	
				Delay	LOS	Delay	LOS
1	Fair Oaks Boulevard @ Greenback Lane	Signal	AM	51.2	D	51.4	D
			PM	54.8	D	54.6	D
2	Fair Oaks Boulevard @ Sunrise East Way	Signal	AM	14.3	B	14.3	B
			PM	15.1	B	15.2	B
3	Fair Oaks Boulevard @ Walnut Hills Way	SSSC*	AM	0.3 (14.5 WBL)	B	0.4 (20.4 WBL)	C
			PM	0.3 (18.1 WBL)	C	0.3 (18.1 WBL)	C
4	Fair Oaks Boulevard @ Treecrest Avenue	Signal	AM	13	B	13.0	B
			PM	13.4	B	13.4	B
5	Fair Oaks Boulevard @ Madison Avenue	Signal	AM	36.8	D	36.9	D
			PM	36.4	D	36.6	D
6	Sunrise Boulevard @ Kingswood Drive	Signal	AM	12.6	B	12.8	B
			PM	19.5	B	20.0	C
7	Kingswood Drive @ Celine Drive	Yield**	AM	7.8 (8.5 EBL)	A	7.4 (8.7 EBL)	A
			PM	8.0 (8.7 EBL)	A	7.8 (8.9 EBL)	A

*Unsignalized intersections are reported with the overall intersection delay and LOS followed by the worst movement/approach delay and LOS.

**HCM 6 expects at least one 'Stop' controlled approach at the intersection. As such, Intersection #7 was modeled as a SSSC intersection to obtain HCM 6 results.

Roadway Segments

Table 7 presents the roadway segment operating conditions for this analysis scenario. As indicated in **Table 7**, the roadway segments operate at LOS A or LOS C.

Table 7 – Baseline (2019) plus Proposed Project Roadway Segments Levels of Service

Scenario	Location	Facility Type	Volume (veh/day)	LOS
Baseline (2019) plus Proposed Project	Fair Oaks Blvd, between Sunrise E Wy and Greenback Ln	4-Lane Arterial (Moderate Access Control)	18,295	A
	Fair Oaks Blvd, between Treecrest Ave and Madison Ave	4-Lane Arterial (Moderate Access Control)	19,098	A
	Kingswood Dr, between Sunrise Blvd and Celine Dr	Residential Collector with Frontage	3,492	C

1

Fair Oaks Blvd

⇨ 187 / 180	⇦ 508 / 365	⇨ 187 / 143

Greenback Ln

⇨ 104 / 206	⇦ 990 / 1010	⇨ 230 / 164

80 / 186 (19) ⇨	925 / 968 ⇨	154 / 182 ⇨

⇨ 174 / 116	⇧ 590 / 299	⇨ 235 / 212

2

Fair Oaks Blvd

⇨ 20 / 35	⇦ 851 / 611	⇨ 14 / 25

Sunrise E Way

⇨ 20 / 22	⇦ 6 / 7	⇨ 18 / 11

29 / 38 ⇨	4 / 12 ⇨	70 / 83 ⇨

⇨ 96 / 38	⇧ 871 / 531	⇨ 29 / 11

3

Fair Oaks Blvd

⇨ 2 / 3	⇦ 930 / 694	⇨ 6 / 11

Project Driveway

⇨ 8 / 7	⇨ 11 / 8	

Walnut Hills Way

3 / 3 ⇨	5 / 4 ⇨	

⇨ 6 / 2	⇧ 1000 / 576	⇨ 12 / 2

4

Fair Oaks Blvd

⇨ 37 / 57	⇦ 878 / 639	⇨ 10 / 8

Treecrest Ave

⇨ 16 / 8	⇦ 1 / 0	⇨ 18 / 10

34 / 77 ⇨	8 / 4 ⇨	63 / 57 ⇨

⇨ 46 / 28	⇧ 926 / 522	⇨ 11 / 5

5

Fair Oaks Blvd

⇨ 253 / 190	⇦ 465 / 329	⇨ 209 / 175

Madison Ave

⇨ 133 / 248	⇦ 1077 / 1200	⇨ 123 / 135 (25)

155 (30) / 273 (41) ⇨	1034 / 1194 ⇨	137 / 162 ⇨

⇨ 156 / 141	⇧ 492 / 272	⇨ 114 / 112

6

Sunrise Blvd

⇨ 28 / 37	⇦ 1144 / 1228	⇨ 34 / 87

Kingswood Dr

⇨ 24 / 64	⇦ 14 / 20	⇨ 34 / 46

13 / 38 ⇨	19 / 31 ⇨	49 / 57 ⇨

⇨ 21 / 56 (18)	⇧ 1631 / 887	⇨ 62 / 27

7

Celine Dr

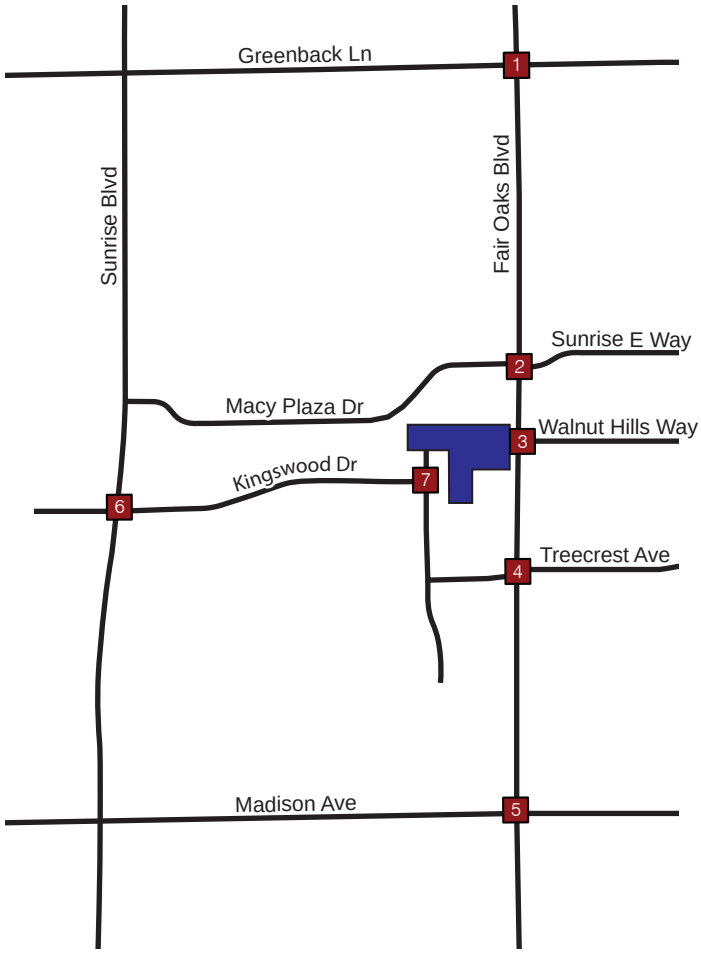
⇨ 7 / 6	⇦ 1 / 1	

Kingswood Dr

⇦ 0 / 1	⇨ 1 / 0	

4 / 8 ⇨	1 / 1 ⇨	48 / 96 ⇨

⇨ 49 / 49	⇧ 2 / 0	⇨ 1 / 0



LEGEND	
XX/YY	AM/PM Volumes
(ZZ)	(U-turn) Volume
	Study Intersection
	Project Location

Kimley»Horn

Figure 7

Baseline (2019) plus Project Peak-Hour Traffic Volumes

BASELINE (2019) PLUS APPROVED PROJECTS CONDITIONS

This scenario analyzes the addition of approved/pending projects in the general Proposed Project vicinity to the Baseline (2019) traffic volumes. Baseline (2019) plus Approved Projects volumes were established by growing Baseline (2019) volumes by five years to account for increases in traffic volume in the Proposed Project vicinity. **Figure 8** provides the AM and PM peak-hour traffic volumes at the study facilities for this analysis scenario. The analysis worksheets for this scenario are provided in **Appendix D**.

Intersections

Table 8 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in **Table 8**, the study intersections operate between LOS A and LOS E with the addition of the approved projects during the AM and PM peak-hours.

Table 8 – Baseline (2019) plus Approved Projects Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Baseline (2019) plus Approved Projects	
				Delay	LOS
1	Fair Oaks Boulevard @ Greenback Lane	Signal	AM	60.2	E
			PM	56.7	E
2	Fair Oaks Boulevard @ Sunrise East Way	Signal	AM	15.8	B
			PM	15.9	B
3	Fair Oaks Boulevard @ Walnut Hills Way	SSSC*	AM	0.4 (17.6 WBL)	C
			PM	0.3 (19.0 WBL)	C
4	Fair Oaks Boulevard @ Treecrest Avenue	Signal	AM	13.5	B
			PM	14.2	B
5	Fair Oaks Boulevard @ Madison Avenue	Signal	AM	40.0	D
			PM	39.6	D
6	Sunrise Boulevard @ Kingswood Drive	Signal	AM	14.2	B
			PM	20.4	C
7	Kingswood Drive @ Celine Drive	Yield**	AM	7.3 (8.6 EBL)	A
			PM	7.7 (8.7 EBL)	A

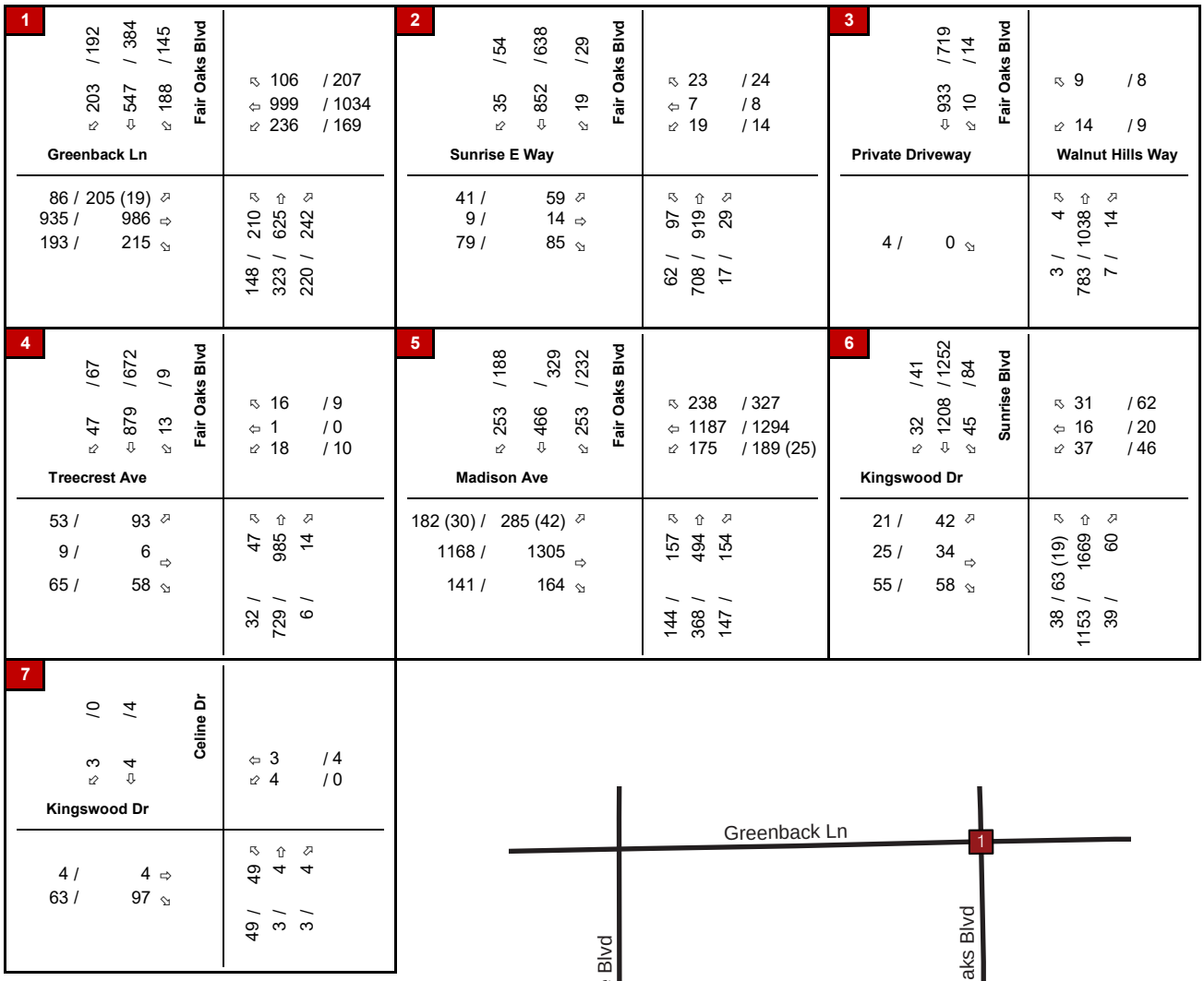
*Unsignalized intersections are reported with the overall intersection delay and LOS followed by the worst movement/approach delay and LOS.
**HCM 6 expects at least one 'Stop' controlled approach at the intersection. As such, Intersection #7 was modeled as a SSSC intersection to obtain HCM 6 results.

Roadway Segments

Table 9 presents the roadway segment operating conditions for this analysis scenario. As indicated in **Table 9**, the roadway segments operate at LOS A or LOS C.

Table 9 – Baseline (2019) plus Approved Projects Roadway Segments Levels of Service

Scenario	Location	Facility Type	Volume (veh/day)	LOS
Baseline (2019) plus Approved Projects	Fair Oaks Blvd, between Sunrise E Wy and Greenback Ln	4-Lane Arterial (Moderate Access Control)	20,448	A
	Fair Oaks Blvd, between Treecrest Ave and Madison Ave	4-Lane Arterial (Moderate Access Control)	20,370	A
	Kingswood Dr, between Sunrise Blvd and Celine Dr	Residential Collector with Frontage	3,956	C



Kimley»Horn

Figure 8

Baseline (2019) plus Approved Projects Peak-Hour Traffic Volumes

BASELINE (2019) PLUS APPROVED PROJECTS PLUS PROPOSED PROJECT CONDITIONS

Peak-hour traffic associated with the Proposed Project was added to the Baseline (2019) plus Approved Project traffic volumes described above and levels of service were determined at the study facilities. **Figure 9** provides the AM and PM peak-hour traffic volumes at the study facilities for this analysis scenario. The analysis worksheets for this scenario are provided in **Appendix E**.

Intersections

Table 10 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in **Table 10**, the study intersections operate between LOS A and LOS E with the addition of the approved projects and the Proposed Project during the AM and PM peak-hours.

Table 10 – Baseline (2019) plus Approved Projects and Baseline (2019) plus Approved Projects plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Baseline (2019) plus Approved Projects		Baseline (2019) plus Approved Projects plus Proposed Project	
				Delay	LOS	Delay	LOS
1	Fair Oaks Boulevard @ Greenback Lane	Signal	AM	60.2	E	60.6	E
			PM	56.7	E	56.9	E
2	Fair Oaks Boulevard @ Sunrise East Way	Signal	AM	15.8	B	15.8	B
			PM	15.9	B	15.9	B
3	Fair Oaks Boulevard @ Walnut Hills Way	SSSC*	AM	0.4 (17.6 WBL)	C	0.6 (30.3 WBL)	D
			PM	0.3 (19.0 WBL)	C	0.3 (19.0 WBL)	C
4	Fair Oaks Boulevard @ Treecrest Avenue	Signal	AM	13.5	B	13.5	B
			PM	14.2	B	14.2	B
5	Fair Oaks Boulevard @ Madison Avenue	Signal	AM	40.0	D	40.2	D
			PM	39.6	D	39.7	D
6	Sunrise Boulevard @ Kingswood Drive	Signal	AM	14.2	B	14.5	B
			PM	20.4	C	21.0	C
7	Kingswood Drive @ Celine Drive	Yield**	AM	7.3 (8.6 EBL)	A	7.1 (8.8 EBL)	A
			PM	7.7 (8.7 EBL)	A	7.5 (8.9 EBL)	A

*Unsignalized intersections are reported with the overall intersection delay and LOS followed by the worst movement/approach delay and LOS.
**HCM 6 expects at least one 'Stop' controlled approach at the intersection. As such, Intersection #7 was modeled as a SSSC intersection to obtain HCM 6 results.

Roadway Segments

Table 11 presents the roadway segment operating conditions for this analysis scenario. As indicated in **Table 11**, the roadway segments operate at LOS A or LOS C.

Table 11 – Baseline (2019) plus Approved Projects plus Proposed Project Roadway Segment LOS

Scenario	Location	Facility Type	Volume (veh/day)	LOS
Baseline (2019) plus Approved Projects plus Proposed Project	Fair Oaks Blvd, between Sunrise E Wy and Greenback Ln	4-Lane Arterial (Moderate Access Control)	20,532	A
	Fair Oaks Blvd, between Treecrest Ave and Madison Ave	4-Lane Arterial (Moderate Access Control)	20,495	A
	Kingswood Dr, between Sunrise Blvd and Celine Dr	Residential Collector with Frontage	4,165	C

1

Fair Oaks Blvd

⇨ 203 / 192	⇩ 547 / 384	⇘ 188 / 145

Greenback Ln

⇨ 106 / 207	⇦ 999 / 1034	⇙ 236 / 169

86 / 205 (19) ⇗	935 / 986 ⇨	194 / 217 ⇘

⇨ 212 / 150	⇧ 625 / 323	⇗ 242 / 220

2

Fair Oaks Blvd

⇨ 35 / 54	⇩ 854 / 641	⇘ 19 / 29

Sunrise E Way

⇨ 23 / 24	⇦ 7 / 8	⇙ 19 / 14

41 / 59 ⇗	9 / 14 ⇨	79 / 85 ⇘

⇨ 97 / 62	⇧ 922 / 711	⇗ 29 / 17

3

Fair Oaks Blvd

⇨ 2 / 3	⇩ 933 / 719	⇘ 10 / 14

Project Driveway

⇨ 9 / 8	⇙ 14 / 9	

Walnut Hills Way

3 / 3 ⇗	8 / 4 ⇘	

⇨ 9 / 5	⇧ 1038 / 783	⇗ 14 / 7

4

Fair Oaks Blvd

⇨ 47 / 67	⇩ 883 / 676	⇘ 13 / 9

Treecrest Ave

⇨ 16 / 9	⇦ 1 / 0	⇙ 18 / 10

53 / 93 ⇗	9 / 6 ⇨	65 / 58 ⇘

⇨ 47 / 32	⇧ 990 / 731	⇗ 14 / 6

5

Fair Oaks Blvd

⇨ 256 / 191	⇩ 467 / 330	⇘ 254 / 233

Madison Ave

⇨ 238 / 328	⇦ 1187 / 1294	⇙ 175 / 189 (25)

184 (30) / 288 (42) ⇗	1168 / 1305 ⇨	141 / 164 ⇘

⇨ 157 / 144	⇧ 495 / 368	⇗ 154 / 147

6

Sunrise Blvd

⇨ 32 / 41	⇩ 1208 / 1252	⇘ 48 / 90

Kingswood Dr

⇨ 36 / 67	⇦ 16 / 20	⇙ 39 / 48

21 / 42 ⇗	25 / 34 ⇨	55 / 58 ⇘

⇨ 38 / 63 (19)	⇧ 1669 / 1153	⇗ 62 / 40

7

Celine Dr

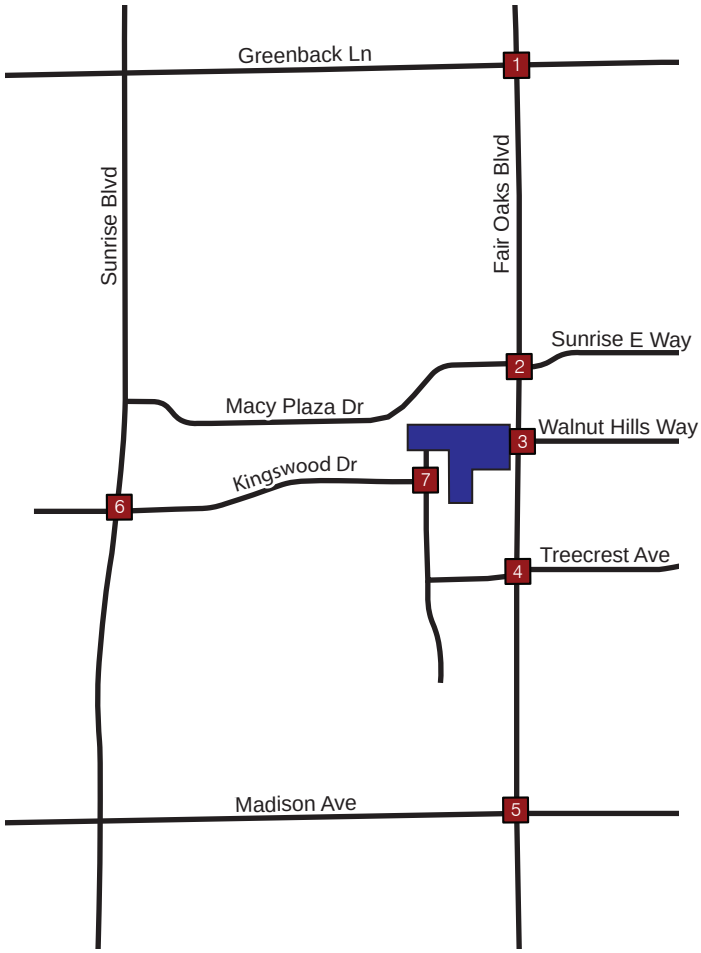
⇨ 10 / 6	⇩ 4 / 4	

Kingswood Dr

⇦ 3 / 4	⇙ 4 / 0	

4 / 8 ⇗	4 / 4 ⇨	63 / 97 ⇘

⇨ 49 / 49	⇧ 4 / 3	⇗ 4 / 3



LEGEND	
XX/YY	AM/PM Volumes
(ZZ)	(U-turn) Volume
	Study Intersection
	Project Location

Kimley»Horn

Figure 9

Baseline (2019) plus Approved Projects plus Project Peak-Hour Traffic Volumes

CUMULATIVE (2036) CONDITIONS

Future traffic estimates were obtained using the current version of SACOG's SACSIM MTP/SCS travel demand model (TDM). The differences between the base year (2012) and future year (2036) model results (the growth) were added to Baseline (2019) traffic volumes to establish Cumulative (2036) traffic estimates for this study. **Figure 10** provides the AM and PM peak-hour traffic volumes at the study facilities for Cumulative (2036) Conditions. The analysis worksheets for this scenario are provided in **Appendix F**.

Intersections

Table 12 presents the peak-hour intersection operation conditions for this analysis scenario. As indicated in **Table 12**, the study intersections operate between LOS A and LOS F for Cumulative (2036) Conditions.

Table 12 – Cumulative (2036) Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Cumulative (2036)	
				Delay	LOS
1	Fair Oaks Boulevard @ Greenback Lane	Signal	AM	82.2	F
			PM	82.0	F
2	Fair Oaks Boulevard @ Sunrise East Way	Signal	AM	18.5	B
			PM	18.5	B
3	Fair Oaks Boulevard @ Walnut Hills Way	SSSC*	AM	0.5 (31.7 WBL)	D
			PM	0.3 (21.6 WBL)	C
4	Fair Oaks Boulevard @ Treecrest Avenue	Signal	AM	14.6	B
			PM	15.6	B
5	Fair Oaks Boulevard @ Madison Avenue	Signal	AM	68.5	E
			PM	70.0	E
6	Sunrise Boulevard @ Kingswood Drive	Signal	AM	18.6	B
			PM	20.7	C
7	Kingswood Drive @ Celine Drive	Yield**	AM	6.9 (8.8 EBL)	A
			PM	7.3 (8.8 EBL)	A

*Unsignalized intersections are reported with the overall intersection delay and LOS followed by the worst movement/approach delay and LOS.
**HCM 6 expects at least one 'Stop' controlled approach at the intersection. As such, Intersection #7 was modeled as a SSSC intersection to obtain HCM 6 results.

Roadway Segments

Table 13 presents the roadway segment operating conditions for this analysis scenario. As indicated in **Table 13**, the roadway segments operate between LOS C and LOS E.

Table 13 – Cumulative (2036) Roadway Segment Levels of Service

Scenario	Location	Facility Type	Volume (veh/day)	LOS
Cumulative (2036)	Fair Oaks Blvd, between Sunrise E Wy and Greenback Ln	4-Lane Arterial (Moderate Access Control)	25,816	C
	Fair Oaks Blvd, between Treecrest Ave and Madison Ave	4-Lane Arterial (Moderate Access Control)	23,724	B
	Kingswood Dr, between Sunrise Blvd and Celine Dr	Residential Collector with Frontage	6,512	E

1

Fair Oaks Blvd

⇗ 240 / 220	⇩ 640 / 430	⇘ 190 / 150

Greenback Ln

⇖ 110 / 210	⇦ 1020 / 1090	⇙ 250 / 180

100 / 250 (20) ⇗	960 / 1030 ⇨	290 / 300 ⇘

⇖ 230 / 300	⇧ 380 / 710	⇗ 240 / 260

2

Fair Oaks Blvd

⇗ 70 / 100	⇩ 860 / 710	⇘ 30 / 40

Sunrise E Way

⇖ 30 / 30	⇦ 10 / 10	⇙ 20 / 20

70 / 110 ⇗	20 / 20 ⇨	100 / 90 ⇘

⇖ 120 / 100	⇧ 1140 / 1040	⇗ 30 / 30

3

Fair Oaks Blvd

⇩ 940 / 780	⇘ 20 / 20	

Private Driveway

⇖ 10 / 10	⇙ 20 / 10	

Walnut Hills Way

10 / 0 ⇘		

⇖ 10 / 10	⇧ 1280 / 1130	⇗ 20 / 20

4

Fair Oaks Blvd

⇗ 70 / 90	⇩ 890 / 760	⇘ 20 / 10

Treecrest Ave

⇖ 10 / 10	⇙ 10 / 10	

100 / 130 ⇗	10 / 10 ⇨	70 / 60 ⇘

⇖ 40 / 50	⇧ 1230 / 1140	⇗ 10 / 20

5

Fair Oaks Blvd

⇗ 260 / 190	⇩ 470 / 330	⇘ 360 / 370

Madison Ave

⇖ 490 / 520	⇦ 1450 / 1520	⇙ 300 / 320 (25)

250 (30) / 320 (45) ⇗	1490 / 1570 ⇨	150 / 170 ⇘

⇖ 150 / 160	⇧ 600 / 500	⇗ 230 / 250

6

Sunrise Blvd

⇗ 40 / 50	⇩ 1360 / 1310	⇘ 80 / 90

Kingswood Dr

⇖ 60 / 70	⇦ 20 / 20	⇙ 50 / 50

40 / 50 ⇗	40 / 40 ⇨	70 / 60 ⇘

⇖ 80 / 80 (20)	⇧ 1790 / 1760	⇗ 70 / 60

7

Celine Dr

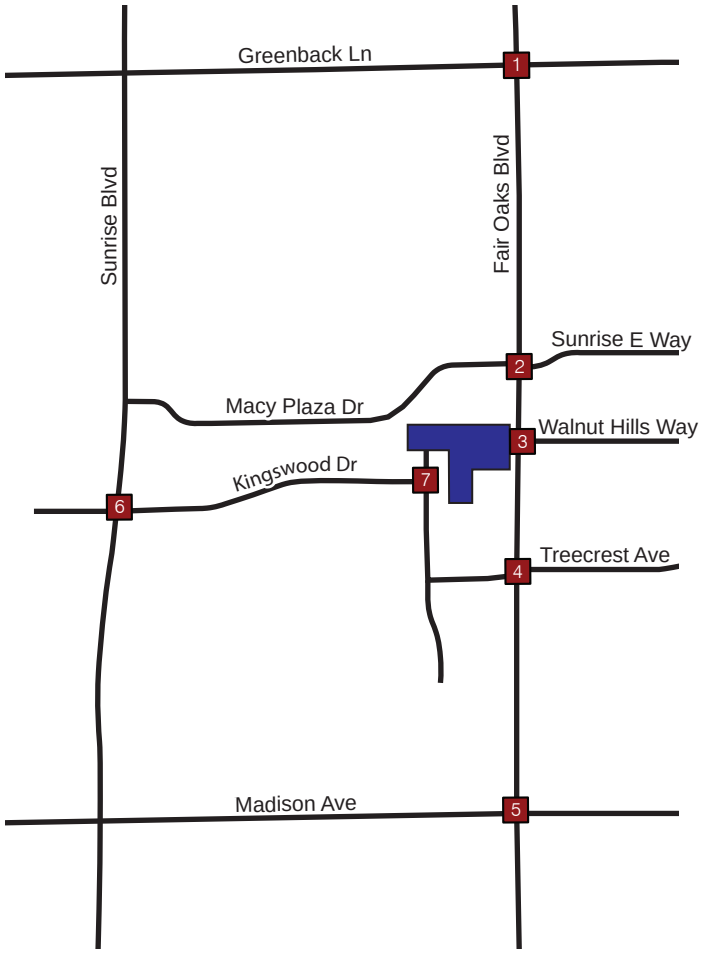
⇗ 10 / 0	⇩ 10 / 10	

Kingswood Dr

⇦ 10 / 10	⇙ 10 / 0	

10 / 10 ⇨	100 / 100 ⇘	

⇖ 50 / 50	⇧ 10 / 10	⇗ 10 / 10



LEGEND	
XX/YY	AM/PM Volumes
(ZZ)	(U-turn) Volume
	Study Intersection
	Project Location

Kimley»Horn

Figure 10
Cumulative (2036) Peak-Hour Traffic Volumes

CUMULATIVE (2036) PLUS PROJECT CONDITIONS

Peak-hour traffic associated with the Proposed Project was added to the Cumulative (2036) traffic volumes described above and levels of service were determined at the study facilities. **Figure 11** provides the AM and PM peak-hour traffic volumes at the study facilities for this analysis scenario. The analysis worksheets for this scenario are provided in **Appendix G**.

Intersections

Table 14 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in **Table 14**, the study intersections operate between LOS A and LOS F with the addition of the Proposed Project to the 2036 forecast volumes during the AM and PM peak-hours.

Table 14 – Cumulative (2036) and Cumulative (2036) plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Cumulative (2036)		Cumulative (2036) plus Project Conditions	
				Delay	LOS	Delay	LOS
1	Fair Oaks Boulevard @ Greenback Lane	Signal	AM	82.2	F	82.4	F
			PM	82.0	F	82.3	F
2	Fair Oaks Boulevard @ Sunrise East Way	Signal	AM	18.5	B	18.5	B
			PM	18.5	B	18.5	B
3	Fair Oaks Boulevard @ Walnut Hills Way	SSSC*	AM	0.5 (31.7 WBL)	D	0.5 (31.7 WBL)	D
			PM	0.3 (21.6 WBL)	C	0.3 (21.6 WBL)	C
4	Fair Oaks Boulevard @ Treecrest Avenue	Signal	AM	14.6	B	14.6	B
			PM	15.6	B	15.6	B
5	Fair Oaks Boulevard @ Madison Avenue	Signal	AM	68.5	E	68.6	E
			PM	70.0	E	70.2	E
6	Sunrise Boulevard @ Kingswood Drive	Signal	AM	18.6	B	19.0	B
			PM	20.7	C	21.3	C
7	Kingswood Drive @ Celine Drive	Yield**	AM	6.9 (8.8 EBL)	A	6.8 (8.9 EBL)	A
			PM	7.3 (8.8 EBL)	A	7.2 (8.9 EBL)	A

*Unsignalized intersections are reported with the overall intersection delay and LOS followed by the worst movement/approach delay and LOS.

**HCM 6 expects at least one 'Stop' controlled approach at the intersection. As such, Intersection #7 was modeled as a SSSC intersection to obtain HCM 6 results.

Roadway Segments

Table 15 presents the roadway segment operating conditions for this analysis scenario. As indicated in **Table 15**, the study intersections operate between LOS B and LOS E.

Table 15 – Cumulative (2036) plus Proposed Project Roadway Segment Levels of Service

Scenario	Location	Facility Type	Volume (veh/day)	LOS
Cumulative (2036) plus Proposed Project	Fair Oaks Blvd, between Sunrise E Wy and Greenback Ln	4-Lane Arterial (Moderate Access Control)	25,900	C
	Fair Oaks Blvd, between Treecrest Ave and Madison Ave	4-Lane Arterial (Moderate Access Control)	23,849	B
	Kingswood Dr, between Sunrise Blvd and Celine Dr	Residential Collector with Frontage	6,721	E

1

Greenback Ln	Fair Oaks Blvd
⇨ 240 / 220	⇨ 110 / 210
⇩ 640 / 430	⇦ 1020 / 1090
⇘ 190 / 150	⇙ 250 / 180
100 / 250 (20) ⇗	⇨ 232 / 302 ⇧ 380 / 710 ⇗ 240 / 260
960 / 1030 ⇨	
291 / 302 ⇘	

2

Sunrise E Way	Fair Oaks Blvd
⇨ 70 / 100	⇨ 30 / 30
⇩ 862 / 713	⇦ 10 / 10
⇘ 30 / 40	⇙ 20 / 20
70 / 110 ⇗	⇨ 120 / 100 ⇧ 1143 / 1043 ⇗ 30 / 30
20 / 20 ⇨	
100 / 90 ⇘	

3

Project Driveway	Fair Oaks Blvd
⇨ 2 / 3	⇨ 10 / 10
⇩ 940 / 780	⇙ 20 / 10
⇘ 20 / 20	
3 / 3 ⇗	⇨ 12 / 15 ⇧ 1280 / 1130 ⇗ 20 / 20
14 / 4 ⇘	

4

Treecrest Ave	Fair Oaks Blvd
⇨ 70 / 90	⇨ 10 / 10
⇩ 894 / 764	⇙ 10 / 10
⇘ 20 / 10	
100 / 130 ⇗	⇨ 40 / 50 ⇧ 1232 / 1145 ⇗ 10 / 20
10 / 10 ⇨	
70 / 60 ⇘	

5

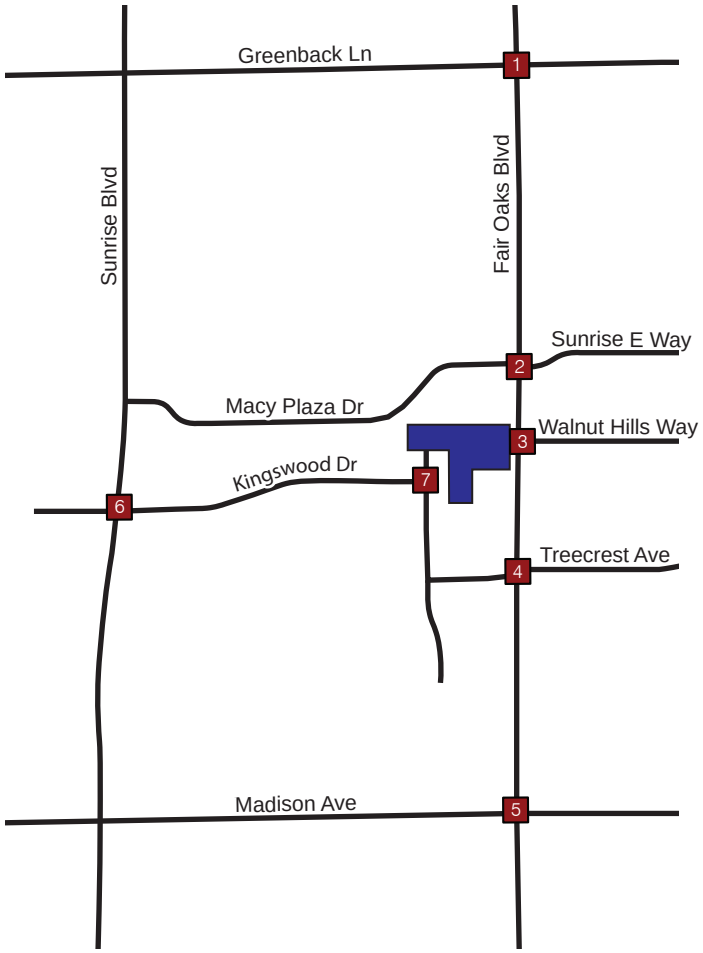
Madison Ave	Fair Oaks Blvd
⇨ 263 / 193	⇨ 490 / 521
⇩ 471 / 331	⇦ 1450 / 1520
⇘ 361 / 371	⇙ 300 / 320 (25)
252 (30) / 323 (45) ⇗	⇨ 150 / 160 ⇧ 600 / 501 ⇗ 230 / 250
1490 / 1570 ⇨	
150 / 170 ⇘	

6

Kingswood Dr	Sunrise Blvd
⇨ 40 / 50	⇨ 65 / 75
⇩ 1360 / 1310	⇦ 20 / 20
⇘ 83 / 96	⇙ 52 / 52
40 / 50 ⇗	⇨ 80 / 80 (20) ⇧ 1790 / 1760 ⇗ 71 / 62
40 / 40 ⇨	
70 / 60 ⇘	

7

Kingswood Dr	Celine Dr
⇨ 17 / 6	⇦ 10 / 10
⇩ 10 / 10	⇙ 10 / 0
4 / 8 ⇗	⇨ 50 / 50 ⇧ 10 / 10 ⇗ 10 / 10
10 / 10 ⇨	
100 / 100 ⇘	



LEGEND	
XX/YY	AM/PM Volumes
(ZZ)	(U-turn) Volume
	Study Intersection
	Project Location

Kimley»Horn

Figure 11

Cumulative (2036) plus Project Peak-Hour Traffic Volumes

IMPACTS AND MITIGATION

Standards of Significance

Proposed Project impacts were determined by comparing conditions with the Proposed Project to those without the Proposed Project. Impacts for intersections are created when traffic from the Proposed Project forces the LOS to fall below a specific threshold.

City of Citrus Heights

The City of Citrus Heights' standards[1] specify the following:

> "The City will *strive to achieve LOS E or better conditions* for City roadways and intersections during peak hours." The study roadway segments and intersections #1-#4 and #6-#7 are located within the City of Citrus Heights.
>
> According to the Citrus Height General Plan Policy 29.2[3], "Exceptions to LOS E are allowed for both roadway segments and intersections along the following streets:
>
> - Sunrise Boulevard – south City limits to north City limits
> - Greenback Lane – west City limits to east City limits
> - Old Auburn Road – Sylvan Road to Fair Oaks Boulevard
> - Antelope Road – I-80 to Auburn Boulevard
> - Auburn Boulevard – Old Auburn Road to northern City limits"
>
> Finally, the City has also established[1] that if "a roadway segment or intersection operates unacceptably according to Policy 29.2 under a no project scenario and the project contributes more than five percent of the total peak hour traffic volume on the roadway segment or entering the intersection", this would result in a significant impact.

County of Sacramento

Intersection #5 falls under the jurisdiction of the County of Sacramento. The Circulation Element of the latest County of Sacramento General Plan[4] includes the following relevant provisions:

> ***CI-9.*** *Plan and design the roadway system in a manner that meets Level of Service (LOS) D on rural roadways and LOS E on urban roadways, unless it is infeasible to implement project alternatives or mitigation measures that would achieve LOS D on rural roadways or LOS E on urban roadways. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural.*
>
> ***CI-35.*** *The applicant/developer of land development projects shall be responsible to install bicycle and pedestrian facilities in accordance with Sacramento County Improvement Standards and may be responsible to participate in the fair share funding of regional multi-use trails identified in the Sacramento County Bicycle Master Plan.*

Sacramento County's traffic study guidelines[5] provide guidelines for the implementation of the General Plan provisions: "The County defines the minimum acceptable operation level for its roadways and

[3] Citrus Heights General Plan, Community Development, August 2011.
[4] *Sacramento County General Plan of 2005-2030,* Sacramento County Community Planning & Development Department, November 9, 2011.

intersections to be LOS D for rural areas and LOS E for urban areas. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural."

Impacts and Mitigations

Intersections

The addition of the Proposed Project does not result in any significant impacts to the study intersections according to the standards set by the City of Citrus Heights or the County of Sacramento, respectively. The impact of the Proposed Project is considered to be ***less than significant***. Accordingly, no mitigation is required.

Mitigation: No mitigation is required.

Roadway Segments

The addition of the Proposed Project does not result in any significant impacts to the study roadway segments according to the standards set by the City of Citrus Heights. The impact of the Proposed Project is considered to be ***less than significant***. Accordingly, no mitigation is required.

Mitigation: No mitigation is required.

OTHER CONSIDERATIONS

Vehicle Queuing at Intersections

Off-site vehicle queuing was considered for the critical movements at the study intersections. The calculated 95th percentile vehicle queues were compared to actual vehicle storage/segment lengths. As presented in Table 16, the northbound left queue at Intersection #1 exceeds the available storage for multiple scenarios. Additionally, the southbound left queue at Intersection #5, exceeds the available storage in all Cumulative scenarios. It is important to note that ninety-five percent of the time during peak hours the vehicle queuing will be less than or equal to those reported. Analysis sheets that include the anticipated vehicle queues are presented in Appendices B-G.

Table 16 – Intersection Queuing Evaluation Results

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
#1, Fair Oaks Blvd @ Greenback Ln	NBL				
Baseline (2019)		180	177	180	288
Baseline (2019) plus Project			179		293
Baseline (2019) plus Approved Projects			248		374
Baseline (2019) plus Approved Projects plus Project			252		380
Cumulative (2036)			459		609
Cumulative (2036) plus Project			465		613
#5, Fair Oaks Blvd @ Madison Ave	SBL				
Baseline (2019)		175	138	175	118
Baseline (2019) plus Project			139		118
Baseline (2019) plus Approved Projects			164		108
Baseline (2019) plus Approved Projects plus Project			165		171
Cumulative (2036)			259		338
Cumulative (2036) plus Project			260		340
#5, Fair Oaks Blvd @ Madison Ave	EBL				
Baseline (2019)		225	122	225	186
Baseline (2019) plus Project			123		188
Baseline (2019) plus Approved Projects			138		188
Baseline (2019) plus Approved Projects plus Project			140		197
Cumulative (2036)			198		223
Cumulative (2036) plus Project			201		225
#6, Sunrise Blvd @ Kingswood Dr	SBL				
Baseline (2019)		170	55	170	133
Baseline (2019) plus Project			59		141
Baseline (2019) plus Approved Projects			71		118
Baseline (2019) plus Approved Projects plus Project			75		146
Cumulative (2036)			109		146
Cumulative (2036) plus Project			110		152

Note: Shaded cells indicate 95th percentile queue lengths exceed available storage capacity.

Bicycle, Pedestrian, and Transit Evaluation

There are currently on-street bicycle facilities directly adjacent to the Proposed Project location. According to the City's Bikeway Master Plan[6], there are Class II bicycle lanes located along Fair Oaks Boulevard and Celine Drive. There are currently sidewalks and streetlights located along Fair Oaks Boulevard and Celine Drive. The two intersections closest to the Project site, the unsignalized intersection of Fair Oaks Boulevard and Walnut Hills Way (Intersection #3) and the unsignalized intersection of Kingswood Drive with Celine

[6] Bikeway Master Plan, City of Citrus Heights. December 2015.

Drive (Intersection #7) do not have striped crosswalks provided for pedestrians. The Proposed Project will not result in removal of any existing pedestrian facility or bikeway/bike lane. The Proposed Project would not add noticeable demand for pedestrian or bicycle facilities. The Proposed Project would not adversely affect existing or planned bicycle or pedestrian facilities.

Sacramento Regional Transit District (RT) provides transit service in the greater Sacramento metropolitan area. The Proposed Project is directly adjacent to one public transit route[7]. The nearest transit stops are located on Fair Oaks Boulevard less than a quarter mile away from the Project site. The stops are served by RT Route 28. There are additional public transit stops on Sunrise Boulevard, Greenback Lane, and Madison Avenue which are served by RT Routes 1, 21, 23, 24, 25, 27, and 95, approximately a half mile away from the Proposed Project. The Proposed Project would not adversely affect existing or planned transit operations. The Proposed Project would not add noticeable transit demand. Any additional demand is anticipated to be adequately accommodated by the existing/planned transit system.

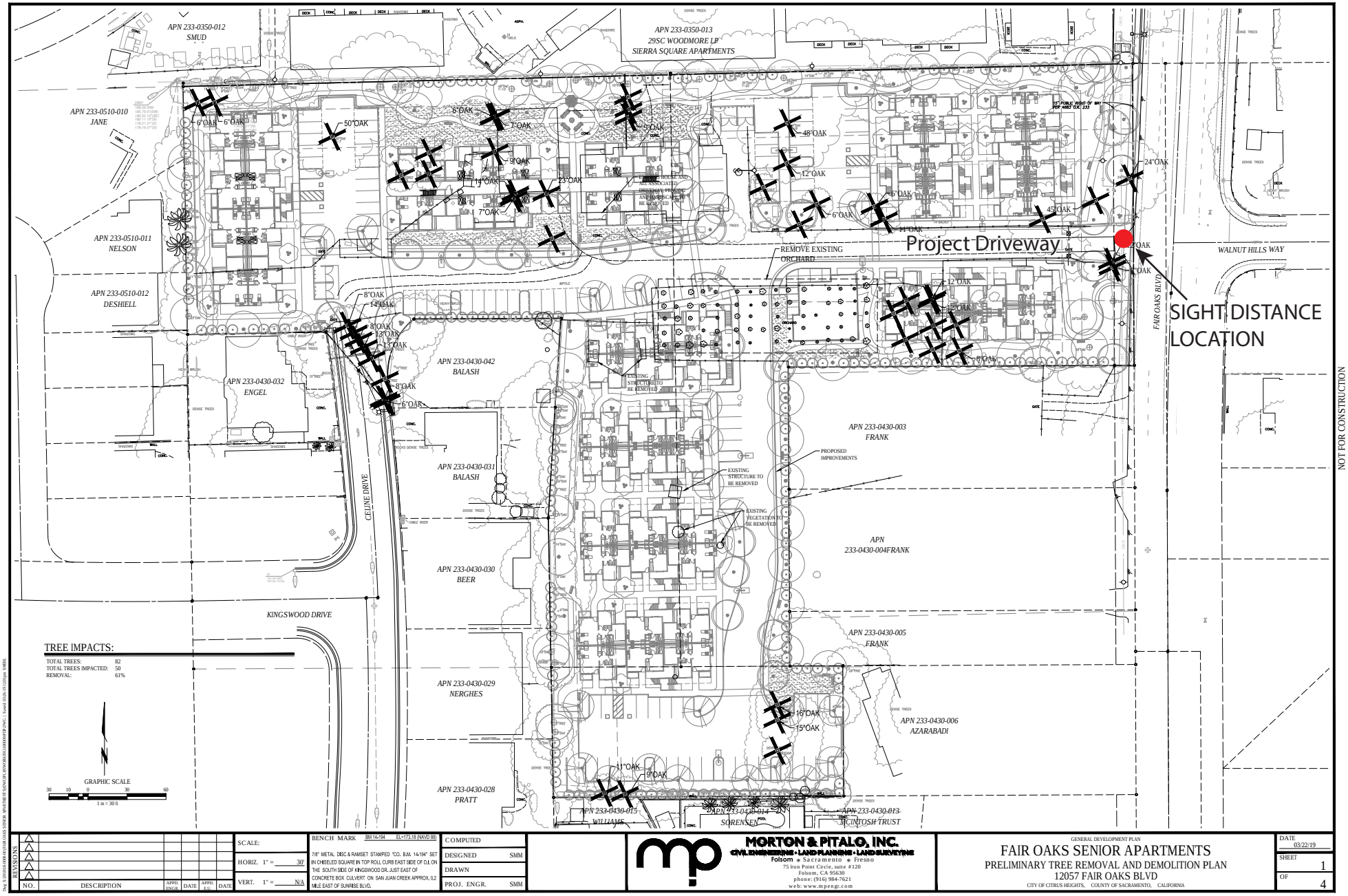
Site Plan, Access, and Circulation Evaluation

The site plan for the Proposed Project in Figure 2 was qualitatively reviewed for general access and on-site circulation. The site plan depicts two access points to the Project site, one full-access along Fair Oaks Boulevard and one new, full-access driveway connected to Celine Drive. These two access points, as well as the on-site circulation system, provide adequate access to/from the surrounding roadway network. In accordance with the City's standard design guidelines[8], the site access and internal circulation is designed in a straightforward and efficient manner that minimizes conflicts between vehicles and pedestrians. There is sufficient driveway throat depth as specified by the City's standard design guidelines.

Delivery vehicles will use the same access as passenger vehicles and there is adequate accessibility provided for these vehicles. Additionally, emergency vehicle access and maneuverability (during construction and normal operation) should be confirmed at all drive aisle locations. Based on the site plan, the Project site includes adequate access to accommodate emergency fire vehicles.

Sight distance at the proposed Fair Oaks Boulevard full-access driveway location was evaluated based on American Association of State Highway Transportation Officials (AASHTO) guidelines[9]. According to AASHTO guidelines, the time gap for a left turn out of the driveway onto Fair Oaks Boulevard would be 8.0 seconds and the corresponding intersection sight distance that should be provided is 590 feet. The sight distance calculation is based on the assumption that vehicles attempting to turn left would do so in two stages, the first into the two-way, left-turn lane (TWLTL), and then the vehicle would merge into the northbound travel way. The sight distance calculation is also based on the assumption that on only one additional lane would need to be crossed by the turning vehicle and the design speed of the roadway is 50 mph as the posted speed limit on Fair Oaks Boulevard is 45 miles per hour. The time gap for a right turn out of the driveway onto Fair Oaks Boulevard would be 6.5 seconds, and the corresponding intersection sight distance that should be provided is 480 feet. Time gaps observed in the field confirmed the assumed time gaps, and therefore intersection sight distances. Roadside vegetation should be maintained to ensure the necessary sight triangle is provided for vehicles exiting the project. Per Figure 12, removing the specified trees adjacent to Fair Oaks Boulevard is necessary to provide adequate intersection sight distance.

[7] Sacramento Regional Transit District, http://www.sacrt.com/systemmap/A2.stm.
[8] City of Citrus Heights, *Zoning Code Article 3: Site Planning & Project Design Standards* (2019).
[9] AASHTO, "A Policy on Geometric Design of Highways and Streets", 7th Edition (2018).



Kimley»Horn

Figure 12
Proposed Project Tree Removal Plan

Adjacent Neighborhood Traffic

Intersection #6, Intersection #7, and Roadway Segment #3 were included in this traffic analysis to assist with identifying the anticipated effect of project traffic on adjacent neighborhood roadways. As shown in Tables 6, 8, 10, 12, and 14, the additional delay incurred at Intersections #6 and #7 with the addition of the proposed project is less than one second, and the LOS remains acceptable in all scenarios. Roadway Segment #3 (Kingswood Drive between Sunrise Boulevard and Celine Drive) also operates acceptably in all scenarios with and without the proposed project. Although Roadway Segment #3 LOS worsens from LOS C to LOS E between Baseline (2019) Conditions and Cumulative (2036) Conditions, this change in operations is primarily due to forecasted background growth in the network and not solely due to the addition of the proposed project.

Regarding the potential for the project to result in "cut-through" traffic, it should be noted that Celine Drive includes a gate that will allow only residents to use this access location. As a result, through traffic from non-residents is not anticipated to occur. In terms of project-specific traffic, there are approximately a dozen trips during the AM peak-hour and 15 trips during the PM peak-hour that would access Sunrise Boulevard via the Celine Drive gate using Kingswood Drive. As the number of new project trips using Kingswood Drive is relatively low (approximately 209 daily, a dozen AM, and 15 PM), the proposed project is not anticipated to result in significant impacts to the adjacent neighborhood roadways and intersections.

CONCLUSIONS

Based upon the analysis documented in this report, the following conclusions are offered:

- The Proposed Project is estimated to generate 418 total new daily trips, with 22 new trips occurring during the AM peak-hour, and 29 new trips occurring during the PM peak-hour.
- The Proposed Project's potential environmental impacts to transportation facilities are considered to be *less than significant*.
- The Proposed Project is anticipated to have a *less than significant* effect on existing and planned bicycle, pedestrian, and transit facilities.
- The proposed project is not anticipated to result in "cut-through" traffic significant impacts to the adjacent neighborhood roadways and intersections.

Appendix A

Traffic Count Data Sheets

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fair Oaks Blvd & Greenback Ln
City: Citrus Heights
Control: Signalized

Project ID: 19-07045-001
Date: 2/5/2019

Total

NS/EW Streets:	Fair Oaks Blvd				Fair Oaks Blvd				Greenback Ln				Greenback Ln				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	21	48	30	1	41	111	41	0	9	220	23	0	43	197	15	2	802
7:15 AM	26	67	43	1	59	110	51	0	13	238	25	0	36	214	21	1	905
7:30 AM	36	71	56	0	46	154	37	0	14	238	36	0	59	241	19	0	1007
7:45 AM	22	84	55	0	46	131	47	0	14	235	56	1	49	299	32	2	1073
8:00 AM	38	72	58	1	53	99	47	0	15	196	30	1	58	238	25	0	931
8:15 AM	17	72	43	0	42	124	56	0	31	256	31	4	61	212	28	1	978
8:30 AM	24	75	39	0	38	90	46	0	23	195	26	1	46	214	34	1	852
8:45 AM	32	63	39	2	37	111	37	0	19	175	18	1	40	176	26	0	776
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	216	552	363	5	362	930	362	0	138	1753	245	8	392	1791	200	7	7324
APPROACH %'s :	19.01%	48.59%	31.95%	0.44%	21.89%	56.23%	21.89%	0.00%	6.44%	81.76%	11.43%	0.37%	16.40%	74.94%	8.37%	0.29%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	113	299	212	1	187	508	187	0	74	925	153	6	227	990	104	3	3989
PEAK HR FACTOR :	0.743	0.890	0.914	0.250	0.882	0.825	0.835	0.000	0.597	0.903	0.683	0.375	0.930	0.828	0.813	0.375	0.929
	0.925				0.930				0.899				0.866				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	44	99	50	1	28	78	34	1	50	263	39	3	37	287	40	0	1054
4:15 PM	44	142	57	0	34	95	45	0	52	221	34	2	46	231	45	4	1052
4:30 PM	39	113	62	1	28	84	48	0	47	223	35	2	45	285	40	0	1052
4:45 PM	43	152	52	2	35	79	41	0	42	245	57	3	44	239	49	1	1084
5:00 PM	40	155	59	3	28	96	52	0	39	221	28	6	41	250	66	1	1085
5:15 PM	39	127	69	0	34	87	42	0	57	272	47	7	44	303	52	2	1182
5:30 PM	45	156	55	0	46	103	45	0	48	230	48	3	30	218	39	1	1067
5:45 PM	30	114	53	3	25	56	47	0	56	250	48	3	31	266	63	0	1045
6:00 PM	46	115	50	1	41	91	42	0	53	212	33	2	40	220	59	4	1009
6:15 PM	44	124	48	0	27	76	40	0	45	206	38	2	30	184	49	1	914
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	414	1297	555	11	326	845	436	1	489	2343	407	33	388	2483	502	14	10544
APPROACH %'s :	18.18%	56.96%	24.37%	0.48%	20.27%	52.55%	27.11%	0.06%	14.94%	71.61%	12.44%	1.01%	11.46%	73.31%	14.82%	0.41%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	167	590	235	5	143	365	180	0	186	968	180	19	159	1010	206	5	4418
PEAK HR FACTOR :	0.928	0.946	0.851	0.417	0.777	0.886	0.865	0.000	0.816	0.890	0.789	0.679	0.903	0.833	0.780	0.625	0.934
	0.970				0.887				0.883				0.860				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fair Oaks Blvd & Sunrise E Way
City: Citrus Heights
Control: Signalized

Project ID: 19-07045-002
Date: 2/5/2019

Total

NS/EW Streets:	Fair Oaks Blvd				Fair Oaks Blvd				Sunrise E Way				Sunrise E Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	1	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	82	4	0	1	198	0	0	3	0	15	0	8	2	5	0	322
7:15 AM	1	90	0	0	4	173	2	0	8	0	9	0	14	0	9	0	310
7:30 AM	5	114	1	0	3	231	2	0	14	1	18	0	5	2	6	0	402
7:45 AM	10	143	1	0	4	236	10	0	3	1	16	0	6	1	12	0	443
8:00 AM	12	156	4	0	1	170	6	0	9	2	17	0	4	3	0	0	384
8:15 AM	12	120	5	0	7	219	4	0	3	0	20	0	4	0	2	0	396
8:30 AM	18	119	1	0	2	156	5	0	6	0	27	0	10	0	5	0	349
8:45 AM	21	124	3	0	4	156	2	0	3	1	14	0	4	1	2	0	335
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	83	948	19	0	26	1539	31	0	49	5	136	0	55	9	41	0	2941
APPROACH %'s :	7.90%	90.29%	1.81%	0.00%	1.63%	96.43%	1.94%	0.00%	25.79%	2.63%	71.58%	0.00%	52.38%	8.57%	39.05%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	39	533	11	0	15	856	22	0	29	4	71	0	19	6	20	0	1625
PEAK HR FACTOR :	0.813	0.854	0.550	0.000	0.536	0.907	0.550	0.000	0.518	0.500	0.888	0.000	0.792	0.500	0.417	0.000	0.917
	0.847				0.893				0.788				0.592				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	1	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	23	189	6	0	1	150	9	0	4	3	28	0	2	0	3	0	418
4:15 PM	21	210	9	0	2	136	12	0	11	1	26	0	2	0	3	0	433
4:30 PM	21	204	8	0	8	155	12	0	10	4	19	0	3	2	7	0	453
4:45 PM	27	210	6	0	4	155	9	0	9	2	26	0	2	3	5	0	458
5:00 PM	21	225	8	0	4	135	9	0	10	5	22	0	3	0	5	0	447
5:15 PM	27	234	7	0	9	168	5	0	9	1	16	0	3	2	5	0	486
5:30 PM	23	219	6	0	1	161	9	0	7	1	13	0	0	1	3	0	444
5:45 PM	13	173	7	0	5	118	10	0	8	1	21	0	3	0	4	0	363
6:00 PM	16	206	2	0	2	136	5	0	8	4	17	0	3	1	5	0	405
6:15 PM	11	182	2	0	7	122	9	0	13	1	14	0	1	0	5	0	367
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	203	2052	61	0	43	1436	89	0	89	23	202	0	22	9	45	0	4274
APPROACH %'s :	8.77%	88.60%	2.63%	0.00%	2.74%	91.58%	5.68%	0.00%	28.34%	7.32%	64.33%	0.00%	28.95%	11.84%	59.21%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	96	873	29	0	25	613	35	0	38	12	83	0	11	7	22	0	1844
PEAK HR FACTOR :	0.889	0.933	0.906	0.000	0.694	0.912	0.729	0.000	0.950	0.600	0.798	0.000	0.917	0.583	0.786	0.000	0.949
	0.931				0.924				0.899				0.833				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fair Oaks Blvd & Walnut Hills Way
City: Citrus Heights
Control: 1-Way Stop (WB)

Project ID: 19-07045-003
Date: 2/5/2019

Total

NS/EW Streets:	Fair Oaks Blvd				Fair Oaks Blvd				Walnut Hills Way				Walnut Hills Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	86	0	0	1	218	0	0	0	0	0	0	1	0	2	0	308
7:15 AM	0	89	1	0	0	193	0	0	0	0	0	0	2	0	2	0	287
7:30 AM	0	118	0	0	2	255	0	0	0	0	1	0	1	0	4	0	381
7:45 AM	0	161	0	0	2	257	0	0	0	0	0	0	5	0	0	0	425
8:00 AM	0	161	2	0	2	190	0	0	0	0	0	0	3	0	4	0	362
8:15 AM	0	142	0	0	0	237	0	0	0	0	0	0	2	0	0	0	381
8:30 AM	0	140	2	0	0	197	0	0	0	0	0	0	0	0	0	0	339
8:45 AM	0	142	3	0	1	174	0	0	0	0	0	0	3	0	1	0	324
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1039	8	0	8	1721	0	0	0	0	1	0	17	0	13	0	2807
APPROACH %'s :	0.00%	99.24%	0.76%	0.00%	0.46%	99.54%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	56.67%	0.00%	43.33%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	582	2	0	6	939	0	0	0	0	1	0	11	0	8	0	1549
PEAK HR FACTOR :	0.000	0.904	0.250	0.000	0.750	0.913	0.000	0.000	0.000	0.000	0.250	0.000	0.550	0.000	0.500	0.000	0.911
	0.896				0.912				0.250				0.679				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	218	4	0	1	180	0	0	0	0	0	0	0	0	2	0	405
4:15 PM	0	232	7	0	2	163	0	0	0	0	1	0	1	0	2	0	408
4:30 PM	0	225	5	0	3	169	0	0	0	0	0	0	4	0	3	0	409
4:45 PM	0	237	3	0	4	181	0	0	0	0	0	0	1	0	2	0	428
5:00 PM	0	265	3	0	3	161	0	0	0	0	0	0	2	0	2	0	436
5:15 PM	0	255	2	0	1	184	0	0	0	0	0	0	0	0	2	0	444
5:30 PM	1	247	4	0	3	171	0	0	0	0	0	0	5	0	1	0	432
5:45 PM	0	194	4	0	0	142	0	0	0	0	0	0	1	0	3	0	344
6:00 PM	0	222	2	0	2	151	0	0	0	0	0	0	2	0	1	0	380
6:15 PM	0	192	1	0	1	141	0	0	0	0	0	0	0	0	0	0	335
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	2287	35	0	20	1643	0	0	0	0	1	0	16	0	18	0	4021
APPROACH %'s :	0.04%	98.45%	1.51%	0.00%	1.20%	98.80%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	47.06%	0.00%	52.94%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	1	1004	12	0	11	697	0	0	0	0	0	0	8	0	7	0	1740
PEAK HR FACTOR :	0.250	0.947	0.750	0.000	0.688	0.947	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.000	0.875	0.000	0.980
	0.949				0.957								0.625				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fair Oaks Blvd & Treecrest Ave
City: Citrus Heights
Control: Signalized

Project ID: 19-07045-004
Date: 2/5/2019

Total

NS/EW Streets:	Fair Oaks Blvd				Fair Oaks Blvd				Treecrest Ave				Treecrest Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	1	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	6	71	1	0	3	213	3	0	9	1	12	0	11	1	5	0	336
7:15 AM	3	75	1	0	0	188	5	0	10	0	22	0	8	0	2	0	314
7:30 AM	2	110	1	0	0	244	8	0	6	2	19	0	1	0	1	0	394
7:45 AM	12	152	2	0	9	239	13	0	8	2	19	0	9	1	3	0	469
8:00 AM	10	134	0	0	2	192	10	0	10	4	15	0	5	0	11	0	393
8:15 AM	5	130	2	0	0	209	6	0	10	0	11	0	5	0	1	0	379
8:30 AM	9	127	4	0	3	203	5	0	8	0	12	0	6	0	0	0	377
8:45 AM	8	143	1	0	4	161	13	0	6	0	10	0	3	1	1	0	351
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	55	942	12	0	21	1649	63	0	67	9	120	0	48	3	24	0	3013
APPROACH %'s :	5.45%	93.36%	1.19%	0.00%	1.21%	95.15%	3.64%	0.00%	34.18%	4.59%	61.22%	0.00%	64.00%	4.00%	32.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	29	526	5	0	11	884	37	0	34	8	64	0	20	1	16	0	1635
PEAK HR FACTOR :	0.604	0.865	0.625	0.000	0.306	0.906	0.712	0.000	0.850	0.500	0.842	0.000	0.556	0.250	0.364	0.000	0.872
	0.843				0.893				0.914				0.578				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	1	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	12	199	3	0	2	165	13	0	19	2	15	0	1	0	3	0	434
4:15 PM	12	216	3	0	2	150	9	0	26	0	12	0	3	0	0	0	433
4:30 PM	6	210	4	0	4	152	11	0	23	5	9	0	3	1	3	0	431
4:45 PM	10	218	6	0	4	162	14	0	23	1	12	0	3	0	1	0	454
5:00 PM	13	253	3	0	0	147	17	0	19	0	13	0	3	0	0	0	468
5:15 PM	12	224	2	0	2	172	11	0	21	1	19	0	2	0	5	0	471
5:30 PM	11	229	0	0	2	157	15	0	14	2	13	0	2	0	2	0	447
5:45 PM	10	189	4	0	3	128	12	0	6	2	16	0	5	1	3	0	379
6:00 PM	7	202	5	0	2	142	10	0	15	2	5	0	4	0	2	0	396
6:15 PM	13	177	7	0	2	123	8	0	12	0	7	0	3	0	0	0	352
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	106	2117	37	0	23	1498	120	0	178	15	121	0	29	2	19	0	4265
APPROACH %'s :	4.69%	93.67%	1.64%	0.00%	1.40%	91.29%	7.31%	0.00%	56.69%	4.78%	38.54%	0.00%	58.00%	4.00%	38.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	46	924	11	0	8	638	57	0	77	4	57	0	10	0	8	0	1840
PEAK HR FACTOR :	0.885	0.913	0.458	0.000	0.500	0.927	0.838	0.000	0.837	0.500	0.750	0.000	0.833	0.000	0.400	0.000	0.977
	0.912				0.950				0.841				0.643				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fair Oaks Blvd & Madison Ave
City: Citrus Heights
Control: Signalized

Project ID: 19-07045-005
Date: 2/5/2019

Total

NS/EW Streets:	Fair Oaks Blvd				Fair Oaks Blvd				Madison Ave				Madison Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	1	0	2	2	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	25	32	8	0	39	99	81	1	16	198	16	4	24	226	29	2	800
7:15 AM	24	51	31	0	48	105	84	0	16	252	19	4	22	277	9	4	946
7:30 AM	40	60	36	0	78	104	71	0	31	289	29	4	20	243	19	2	1026
7:45 AM	28	69	27	0	42	119	61	0	50	324	31	10	29	261	49	2	1102
8:00 AM	30	62	21	0	43	103	56	1	37	195	35	6	45	312	48	2	996
8:15 AM	43	85	29	0	44	141	69	1	36	245	46	10	24	268	18	0	1059
8:30 AM	45	86	27	1	35	100	65	0	34	225	45	5	25	268	25	3	989
8:45 AM	55	94	22	0	37	101	54	1	48	217	29	10	33	221	25	1	948
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	290	539	201	1	366	872	541	4	268	1945	250	53	222	2076	222	16	7866
APPROACH %'s :	28.13%	52.28%	19.50%	0.10%	20.53%	48.91%	30.34%	0.22%	10.65%	77.31%	9.94%	2.11%	8.75%	81.86%	8.75%	0.63%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	141	276	113	0	207	467	257	2	154	1053	141	30	118	1084	134	6	4183
PEAK HR FACTOR :	0.820	0.812	0.785	0.000	0.663	0.828	0.905	0.500	0.770	0.813	0.766	0.750	0.656	0.869	0.684	0.750	0.949
	0.844				0.915				0.830				0.824				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	1	0	2	2	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	32	110	24	2	50	86	40	2	63	278	43	13	29	240	51	6	1069
4:15 PM	38	106	25	0	37	89	34	1	66	268	50	12	29	289	62	1	1107
4:30 PM	48	108	22	2	36	70	48	2	81	354	39	8	29	263	36	2	1148
4:45 PM	42	138	25	0	34	85	44	0	59	297	44	14	28	306	65	3	1184
5:00 PM	40	110	36	0	42	77	45	2	86	307	39	11	42	307	59	11	1214
5:15 PM	34	128	34	0	53	83	46	0	65	287	43	9	34	297	64	6	1183
5:30 PM	40	118	19	0	43	84	52	1	60	307	36	7	31	296	59	5	1158
5:45 PM	44	111	44	0	51	65	35	3	67	275	31	11	37	316	55	6	1151
6:00 PM	44	107	28	1	32	70	48	0	69	251	32	10	47	253	48	3	1043
6:15 PM	74	105	46	0	33	57	47	3	69	230	31	4	31	215	49	5	999
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	436	1141	303	5	411	766	439	14	685	2854	388	99	337	2782	548	48	11256
APPROACH %'s :	23.13%	60.53%	16.07%	0.27%	25.21%	46.99%	26.93%	0.86%	17.01%	70.89%	9.64%	2.46%	9.07%	74.89%	14.75%	1.29%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	156	494	114	0	172	329	187	3	270	1198	162	41	135	1206	247	25	4739
PEAK HR FACTOR :	0.929	0.895	0.792	0.000	0.811	0.968	0.899	0.375	0.785	0.976	0.920	0.732	0.804	0.982	0.950	0.568	0.976
	0.932				0.949				0.943				0.962				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sunrise Blvd & Kingswood Dr
City: Citrus Heights
Control: Signalized

Project ID: 19-07045-006
Date: 2/5/2019

Total

NS/EW Streets:	Sunrise Blvd				Sunrise Blvd				Kingswood Dr				Kingswood Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	0.5	1	0.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	183	4	0	1	325	0	0	0	2	5	0	18	2	7	0	552
7:15 AM	4	201	2	1	7	306	2	0	1	1	6	0	7	0	9	0	547
7:30 AM	5	265	5	0	4	341	5	0	2	2	11	0	11	0	6	0	657
7:45 AM	4	246	11	1	12	254	5	0	2	10	14	0	11	5	4	0	579
8:00 AM	7	186	6	1	9	272	11	0	5	5	12	0	6	10	3	0	533
8:15 AM	4	224	4	0	7	308	7	0	4	2	12	0	4	0	6	0	582
8:30 AM	4	266	14	1	11	255	6	0	3	1	12	0	2	5	6	0	586
8:45 AM	9	249	8	0	7	221	4	0	2	3	5	0	4	1	9	0	522
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	42	1820	54	4	58	2282	40	0	19	26	77	0	63	23	50	0	4558
APPROACH %'s :	2.19%	94.79%	2.81%	0.21%	2.44%	95.88%	1.68%	0.00%	15.57%	21.31%	63.11%	0.00%	46.32%	16.91%	36.76%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	20	921	26	2	32	1175	28	0	13	19	49	0	32	15	19	0	2351
PEAK HR FACTOR :	0.714	0.869	0.591	0.500	0.667	0.861	0.636	0.000	0.650	0.475	0.875	0.000	0.727	0.375	0.792	0.000	0.895
	0.881				0.882				0.779				0.825				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	0.5	1	0.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	16	406	12	4	29	330	6	0	9	8	11	0	12	2	11	0	856
4:15 PM	19	404	17	4	19	306	14	1	7	8	9	0	11	8	19	0	846
4:30 PM	7	414	17	2	18	299	9	0	13	13	27	0	8	3	16	0	846
4:45 PM	15	417	14	8	14	301	8	0	9	4	10	0	13	7	14	0	834
5:00 PM	7	424	11	1	9	335	4	0	11	3	13	0	4	4	11	0	837
5:15 PM	9	385	6	3	16	293	8	0	9	6	8	0	7	5	23	0	778
5:30 PM	14	414	10	3	7	317	7	0	4	3	13	0	5	8	8	0	813
5:45 PM	13	357	11	5	9	291	9	0	9	6	8	0	6	1	8	0	733
6:00 PM	18	407	9	7	12	302	4	1	8	5	7	0	11	9	8	0	808
6:15 PM	17	370	13	3	4	288	8	0	6	4	14	0	6	1	7	0	741
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	135	3998	120	40	137	3062	77	2	85	60	120	0	83	48	125	0	8092
APPROACH %'s :	3.14%	93.13%	2.80%	0.93%	4.18%	93.41%	2.35%	0.06%	32.08%	22.64%	45.28%	0.00%	32.42%	18.75%	48.83%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	57	1641	60	18	80	1236	37	1	38	33	57	0	44	20	60	0	3382
PEAK HR FACTOR :	0.750	0.984	0.882	0.563	0.690	0.936	0.661	0.250	0.731	0.635	0.528	0.000	0.846	0.625	0.789	0.000	0.988
	0.978				0.927				0.604				0.816				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Celine Dr & Kingswood Dr
City: Citrus Heights
Control: 1-Way Yield (EB)

Project ID: 19-07045-007
Date: 2/5/2019

Total

NS/EW Streets:	Celine Dr				Celine Dr				Kingswood Dr				Kingswood Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	11
7:15 AM	4	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	12
7:30 AM	3	0	0	0	0	0	1	0	0	0	9	0	0	1	0	0	14
7:45 AM	13	0	0	0	0	1	0	0	0	0	17	0	0	0	0	0	31
8:00 AM	19	0	0	0	0	0	0	0	0	0	13	0	1	0	0	0	33
8:15 AM	8	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	19
8:30 AM	10	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	19
8:45 AM	14	0	0	0	0	1	0	0	0	0	9	0	0	0	0	0	24
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	76	0	0	0	0	2	1	0	0	1	81	0	1	1	0	0	163
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	0.00%	66.67%	33.33%	0.00%	0.00%	1.22%	98.78%	0.00%	50.00%	50.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	50	0	0	0	0	1	0	0	0	1	49	0	1	0	0	0	102
PEAK HR FACTOR :	0.658	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.721	0.000	0.250	0.000	0.000	0.000	0.773
	0.658				0.250				0.735				0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	12	0	0	0	0	0	0	0	0	0	26	0	0	0	0	0	38
4:15 PM	13	0	0	0	0	0	0	0	1	0	18	0	0	0	0	0	32
4:30 PM	11	0	0	0	0	0	0	0	0	0	28	0	0	0	0	0	39
4:45 PM	10	1	0	0	0	0	0	0	0	0	23	0	0	1	0	0	35
5:00 PM	16	1	1	0	0	0	0	0	0	0	20	0	0	0	0	0	38
5:15 PM	12	0	0	0	0	1	0	0	0	1	26	0	0	0	0	0	40
5:30 PM	13	0	0	0	0	1	0	0	0	0	15	0	0	0	0	0	29
5:45 PM	14	0	0	0	0	0	0	0	1	0	19	0	0	0	0	0	34
6:00 PM	10	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	16
6:15 PM	8	0	0	1	0	1	0	0	0	1	10	0	0	0	0	0	21
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	119	2	1	1	0	3	0	0	2	2	191	0	0	1	0	0	322
APPROACH %'s :	96.75%	1.63%	0.81%	0.81%	0.00%	100.00%	0.00%	0.00%	1.03%	1.03%	97.95%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	49	2	1	0	0	1	0	0	0	1	97	0	0	1	0	0	152
PEAK HR FACTOR :	0.766	0.500	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.866	0.000	0.000	0.250	0.000	0.000	0.950
	0.722				0.250				0.875				0.250				

Prepared by NDS/ATD

VOLUME

Fair Oaks Blvd Bet. Sunrise E Way & Greenback Ln

Day: Tuesday
Date: 2/5/2019

City: Citrus Heights
Project #: CA19_7046_001

DAILY TOTALS	NB	SB	EB	WB	Total
	8,829	8,988	0	0	17,817

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	11		9						20		12:00	123		117						240	
00:15	10		11						21		12:15	161		145						306	
00:30	10		11						21		12:30	134		139						273	
00:45	7	38	11	42					18	80	12:45	128	546	131	532					259	1078
01:00	6		4						10		13:00	143		134						277	
01:15	7		5						12		13:15	146		132						278	
01:30	5		5						10		13:30	148		131						279	
01:45	6	24	10	24					16	48	13:45	153	590	158	555					311	1145
02:00	4		2						6		14:00	147		156						303	
02:15	5		5						10		14:15	159		153						312	
02:30	6		4						10		14:30	170		168						338	
02:45	3	18	6	17					9	35	14:45	146	622	209	686					355	1308
03:00	3		6						9		15:00	182		187						369	
03:15	8		3						11		15:15	221		184						405	
03:30	4		8						12		15:30	229		196						425	
03:45	4	19	7	24					11	43	15:45	225	857	166	733					391	1590
04:00	7		10						17		16:00	189		168						357	
04:15	10		9						19		16:15	229		158						387	
04:30	8		18						26		16:30	196		182						378	
04:45	8	33	15	52					23	85	16:45	228	842	178	686					406	1528
05:00	11		21						32		17:00	231		151						382	
05:15	12		41						53		17:15	224		186						410	
05:30	26		43						69		17:30	232		177						409	
05:45	21	70	68	173					89	243	17:45	195	882	140	654					335	1536
06:00	30		92						122		18:00	201		143						344	
06:15	44		134						178		18:15	210		146						356	
06:30	61		129						190		18:30	169		126						295	
06:45	71	206	151	506					222	712	18:45	101	681	115	530					216	1211
07:00	106		178						284		19:00	115		83						198	
07:15	126		164						290		19:15	90		95						185	
07:30	145		216						361		19:30	77		68						145	
07:45	161	538	234	792					395	1330	19:45	75	357	68	314					143	671
08:00	171		173						344		20:00	59		70						129	
08:15	125		210						335		20:15	58		67						125	
08:30	140		153						293		20:30	82		59						141	
08:45	136	572	152	688					288	1260	20:45	52	251	53	249					105	500
09:00	99		112						211		21:00	56		76						132	
09:15	98		92						190		21:15	54		53						107	
09:30	92		98						190		21:30	51		55						106	
09:45	82	371	126	428					208	799	21:45	51	212	52	236					103	448
10:00	119		97						216		22:00	32		25						57	
10:15	89		102						191		22:15	22		34						56	
10:30	107		109						216		22:30	29		23						52	
10:45	116	431	94	402					210	833	22:45	23	106	20	102					43	208
11:00	117		120						237		23:00	21		29						50	
11:15	124		121						245		23:15	21		29						50	
11:30	130		113						243		23:30	9		17						26	
11:45	132	503	126	480					258	983	23:45	9	60	8	83					17	143
TOTALS		2823		3628						6451	TOTALS		6006		5360						11366
SPLIT %		43.8%		56.2%						36.2%	SPLIT %		52.8%		47.2%						63.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	8,829	8,988	0	0	17,817

AM Peak Hour	07:15	07:30			07:30	PM Peak Hour	16:45	14:45			16:45
AM Pk Volume	603	833			1435	PM Pk Volume	915	776			1607
Pk Hr Factor	0.882	0.890			0.908	Pk Hr Factor	0.986	0.928			0.980
7 - 9 Volume	1110	1480	0	0	2590	4 - 6 Volume	1724	1340	0	0	3064
7 - 9 Peak Hour	07:15	07:30			07:30	4 - 6 Peak Hour	16:45	16:30			16:45
7 - 9 Pk Volume	603	833	0	0	1435	4 - 6 Pk Volume	915	697	0	0	1607
Pk Hr Factor	0.882	0.890	0.000	0.000	0.908	Pk Hr Factor	0.986	0.937	0.000	0.000	0.980

Prepared by NDS/ATD

VOLUME

Fair Oaks Blvd Bet. Sunrise E Way & Greenback Ln

Day: Wednesday
Date: 2/6/2019

City: Citrus Heights
Project #: CA19_7046_001

DAILY TOTALS	NB	SB	EB	WB	Total
	9,318	9,392	0	0	18,710

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	9		5						14		12:00	155		132						287	
00:15	13		12						25		12:15	161		121						282	
00:30	6		7						13		12:30	154		156						310	
00:45	8	36	9	33					17	69	12:45	146	616	137	546					283	1162
01:00	11		5						16		13:00	138		140						278	
01:15	1		9						10		13:15	126		111						237	
01:30	2		5						7		13:30	118		132						250	
01:45	4	18	4	23					8	41	13:45	130	512	149	532					279	1044
02:00	1		6						7		14:00	165		142						307	
02:15	6		7						13		14:15	183		149						332	
02:30	5		6						11		14:30	167		137						304	
02:45	1	13	4	23					5	36	14:45	159	674	211	639					370	1313
03:00	3		2						5		15:00	172		185						357	
03:15	2		2						4		15:15	236		191						427	
03:30	5		9						14		15:30	269		193						462	
03:45	5	15	7	20					12	35	15:45	220	897	179	748					399	1645
04:00	5		7						12		16:00	214		166						380	
04:15	5		11						16		16:15	230		168						398	
04:30	12		11						23		16:30	234		137						371	
04:45	11	33	23	52					34	85	16:45	214	892	169	640					383	1532
05:00	7		20						27		17:00	256		179						435	
05:15	10		29						39		17:15	245		190						435	
05:30	18		47						65		17:30	233		191						424	
05:45	23	58	61	157					84	215	17:45	214	948	152	712					366	1660
06:00	28		85						113		18:00	186		163						349	
06:15	33		124						157		18:15	160		186						346	
06:30	55		119						174		18:30	162		154						316	
06:45	84	200	167	495					251	695	18:45	133	641	144	647					277	1288
07:00	124		174						298		19:00	119		83						202	
07:15	119		205						324		19:15	102		106						208	
07:30	134		203						337		19:30	94		85						179	
07:45	174	551	271	853					445	1404	19:45	82	397	80	354					162	751
08:00	187		171						358		20:00	57		87						144	
08:15	137		198						335		20:15	75		93						168	
08:30	134		186						320		20:30	114		66						180	
08:45	155	613	175	730					330	1343	20:45	87	333	54	300					141	633
09:00	121		103						224		21:00	91		68						159	
09:15	100		120						220		21:15	57		69						126	
09:30	89		124						213		21:30	49		66						115	
09:45	108	418	122	469					230	887	21:45	42	239	43	246					85	485
10:00	119		114						233		22:00	47		44						91	
10:15	107		113						220		22:15	34		40						74	
10:30	104		104						208		22:30	33		31						64	
10:45	123	453	128	459					251	912	22:45	21	135	20	135					41	270
11:00	154		125						279		23:00	20		17						37	
11:15	130		121						251		23:15	21		28						49	
11:30	138		137						275		23:30	12		18						30	
11:45	139	561	116	499					255	1060	23:45	12	65	17	80					29	145
TOTALS		2969		3813						6782	TOTALS		6349		5579						11928
SPLIT %		43.8%		56.2%						36.2%	SPLIT %		53.2%		46.8%						63.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	9,318	9,392	0	0	18,710

AM Peak Hour	07:30	07:00			07:30	PM Peak Hour	16:30	14:45			16:45
AM Pk Volume	632	853			1475	PM Pk Volume	949	780			1677
Pk Hr Factor	0.845	0.787			0.829	Pk Hr Factor	0.927	0.924			0.964
7 - 9 Volume	1164	1583	0	0	2747	4 - 6 Volume	1840	1352	0	0	3192
7 - 9 Peak Hour	07:30	07:00			07:30	4 - 6 Peak Hour	16:30	16:45			16:45
7 - 9 Pk Volume	632	853	0	0	1475	4 - 6 Pk Volume	949	729	0	0	1677
Pk Hr Factor	0.845	0.787	0.000	0.000	0.829	Pk Hr Factor	0.927	0.954	0.000	0.000	0.964

Prepared by NDS/ATD

VOLUME

Fair Oaks Blvd Bet. Sunrise E Way & Greenback Ln

Day: Thursday
Date: 2/7/2019

City: Citrus Heights
Project #: CA19_7046_001

DAILY TOTALS	NB	SB	EB	WB	Total
	8,866	9,242	0	0	18,108

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	13		10						23		12:00	166		129						295	
00:15	8		14						22		12:15	140		159						299	
00:30	9		5						14		12:30	170		158						328	
00:45	6	36	9	38					15	74	12:45	169	645	132	578					301	1223
01:00	13		11						24		13:00	161		154						315	
01:15	5		8						13		13:15	138		141						279	
01:30	7		4						11		13:30	130		174						304	
01:45	4	29	6	29					10	58	13:45	169	598	181	650					350	1248
02:00	3		3						6		14:00	217		180						397	
02:15	5		6						11		14:15	185		144						329	
02:30	8		5						13		14:30	204		165						369	
02:45	3	19	3	17					6	36	14:45	164	770	167	656					331	1426
03:00	4		2						6		15:00	196		155						351	
03:15	3		4						7		15:15	186		162						348	
03:30	9		8						17		15:30	156		169						325	
03:45	6	22	14	28					20	50	15:45	182	720	162	648					344	1368
04:00	5		9						14		16:00	219		163						382	
04:15	9		7						16		16:15	193		176						369	
04:30	7		16						23		16:30	213		148						361	
04:45	7	28	19	51					26	79	16:45	221	846	180	667					401	1513
05:00	8		25						33		17:00	218		182						400	
05:15	11		49						60		17:15	214		183						397	
05:30	21		50						71		17:30	212		160						372	
05:45	26	66	56	180					82	246	17:45	197	841	160	685					357	1526
06:00	30		57						87		18:00	172		134						306	
06:15	43		132						175		18:15	162		164						326	
06:30	63		130						193		18:30	154		123						277	
06:45	72	208	150	469					222	677	18:45	101	589	131	552					232	1141
07:00	121		158						279		19:00	118		104						222	
07:15	116		184						300		19:15	106		96						202	
07:30	135		199						334		19:30	97		103						200	
07:45	156	528	245	786					401	1314	19:45	71	392	74	377					145	769
08:00	166		200						366		20:00	60		80						140	
08:15	121		178						299		20:15	51		86						137	
08:30	134		180						314		20:30	67		68						135	
08:45	131	552	143	701					274	1253	20:45	68	246	44	278					112	524
09:00	108		133						241		21:00	64		55						119	
09:15	105		103						208		21:15	57		63						120	
09:30	98		108						206		21:30	55		53						108	
09:45	118	429	124	468					242	897	21:45	42	218	40	211					82	429
10:00	87		111						198		22:00	29		41						70	
10:15	97		127						224		22:15	39		39						78	
10:30	113		94						207		22:30	18		25						43	
10:45	99	396	125	457					224	853	22:45	25	111	29	134					54	245
11:00	107		110						217		23:00	27		24						51	
11:15	127		129						256		23:15	21		26						47	
11:30	130		128						258		23:30	16		27						43	
11:45	133	497	125	492					258	989	23:45	16	80	13	90					29	170
TOTALS		2810		3716						6526	TOTALS		6056		5526						11582
SPLIT %		43.1%		56.9%						36.0%	SPLIT %		52.3%		47.7%						64.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	8,866	9,242	0	0	18,108

AM Peak Hour	11:45	07:15			07:15	PM Peak Hour	16:30	16:45			16:45
AM Pk Volume	609	828			1401	PM Pk Volume	866	705			1570
Pk Hr Factor	0.896	0.845			0.873	Pk Hr Factor	0.980	0.963			0.979
7 - 9 Volume	1080	1487	0	0	2567	4 - 6 Volume	1687	1352	0	0	3039
7 - 9 Peak Hour	07:30	07:15			07:15	4 - 6 Peak Hour	16:30	16:45			16:45
7 - 9 Pk Volume	578	828	0	0	1401	4 - 6 Pk Volume	866	705	0	0	1570
Pk Hr Factor	0.870	0.845	0.000	0.000	0.873	Pk Hr Factor	0.980	0.963	0.000	0.000	0.979

Prepared by NDS/ATD

VOLUME

Fair Oaks Blvd Bet. Treecrest Ave & Madison Ave

Day: Tuesday
Date: 2/5/2019

City: Citrus Heights
Project #: CA19_7046_002

DAILY TOTALS	NB	SB	EB	WB	Total
	8,941	9,665	0	0	18,606

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	11		6						17		12:00	124		144						268	
00:15	12		12						24		12:15	160		159						319	
00:30	12		7						19		12:30	123		139						262	
00:45	4	39	6	31					10	70	12:45	129	536	162	604					291	1140
01:00	7		7						14		13:00	140		132						272	
01:15	8		2						10		13:15	151		155						306	
01:30	5		6						11		13:30	150		133						283	
01:45	6	26	7	22					13	48	13:45	138	579	158	578					296	1157
02:00	5		0						5		14:00	157		169						326	
02:15	4		9						13		14:15	181		150						331	
02:30	6		4						10		14:30	160		179						339	
02:45	2	17	6	19					8	36	14:45	159	657	191	689					350	1346
03:00	6		6						12		15:00	167		222						389	
03:15	6		4						10		15:15	264		175						439	
03:30	2		8						10		15:30	251		190						441	
03:45	1	15	11	29					12	44	15:45	244	926	179	766					423	1692
04:00	7		11						18		16:00	213		165						378	
04:15	4		16						20		16:15	228		171						399	
04:30	8		26						34		16:30	228		153						381	
04:45	5	24	22	75					27	99	16:45	233	902	171	660					404	1562
05:00	6		28						34		17:00	268		153						421	
05:15	8		54						62		17:15	243		186						429	
05:30	13		68						81		17:30	231		171						402	
05:45	11	38	87	237					98	275	17:45	199	941	136	646					335	1587
06:00	19		111						130		18:00	228		154						382	
06:15	23		181						204		18:15	211		127						338	
06:30	47		160						207		18:30	189		121						310	
06:45	54	143	177	629					231	772	18:45	105	733	106	508					211	1241
07:00	78		210						288		19:00	121		87						208	
07:15	78		234						312		19:15	103		83						186	
07:30	99		262						361		19:30	97		62						159	
07:45	162	417	226	932					388	1349	19:45	69	390	63	295					132	685
08:00	147		208						355		20:00	74		53						127	
08:15	133		228						361		20:15	68		70						138	
08:30	142		215						357		20:30	93		56						149	
08:45	150	572	185	836					335	1408	20:45	55	290	43	222					98	512
09:00	96		132						228		21:00	59		60						119	
09:15	92		115						207		21:15	57		54						111	
09:30	107		125						232		21:30	64		53						117	
09:45	71	366	145	517					216	883	21:45	52	232	33	200					85	432
10:00	119		116						235		22:00	36		30						66	
10:15	96		114						210		22:15	28		28						56	
10:30	109		133						242		22:30	25		26						51	
10:45	114	438	120	483					234	921	22:45	21	110	16	100					37	210
11:00	116		127						243		23:00	21		23						44	
11:15	120		140						260		23:15	19		18						37	
11:30	123		132						255		23:30	11		10						21	
11:45	133	492	129	528					262	1020	23:45	7	58	8	59					15	117
TOTALS		2587		4338						**6925**	**TOTALS**		6354		5327						**11681**
SPLIT %		37.4%		62.6%						**37.2%**	**SPLIT %**		54.4%		45.6%						**62.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	8,941	9,665	0	0	18,606

AM Peak Hour	07:45	07:00			**07:30**	**PM Peak Hour**	16:45	14:45			**15:00**
AM Pk Volume	584	932			**1465**	**PM Pk Volume**	975	778			**1692**
Pk Hr Factor	0.901	0.889			**0.944**	**Pk Hr Factor**	0.910	0.876			**0.959**
7 - 9 Volume	989	1768	0	0	**2757**	**4 - 6 Volume**	1843	1306	0	0	**3149**
7 - 9 Peak Hour	07:45	07:00			**07:30**	**4 - 6 Peak Hour**	16:45	16:45			**16:45**
7 - 9 Pk Volume	584	932	0	0	**1465**	**4 - 6 Pk Volume**	975	681	0	0	**1656**
Pk Hr Factor	0.901	0.889	0.000	0.000	**0.944**	**Pk Hr Factor**	0.910	0.915	0.000	0.000	**0.965**

Prepared by NDS/ATD

VOLUME

Fair Oaks Blvd Bet. Treecrest Ave & Madison Ave

Day: Wednesday
Date: 2/6/2019

City: Citrus Heights
Project #: CA19_7046_002

DAILY TOTALS	NB	SB	EB	WB	Total
	9,414	10,006	0	0	19,420

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	11		1						12		12:00	162		141						303	
00:15	15		6						21		12:15	148		150						298	
00:30	9		5						14		12:30	145		165						310	
00:45	10	45	7	19					17	64	12:45	144	599	163	619					307	1218
01:00	10		5						15		13:00	158		139						297	
01:15	3		5						8		13:15	127		141						268	
01:30	2		4						6		13:30	141		146						287	
01:45	7	22	4	18					11	40	13:45	118	544	162	588					280	1132
02:00	0		4						4		14:00	163		152						315	
02:15	6		9						15		14:15	173		142						315	
02:30	2		5						7		14:30	153		155						308	
02:45	3	11	4	22					7	33	14:45	144	633	177	626					321	1259
03:00	3		5						8		15:00	175		201						376	
03:15	3		5						8		15:15	303		178						481	
03:30	1		5						6		15:30	282		194						476	
03:45	6	13	13	28					19	41	15:45	236	996	189	762					425	1758
04:00	4		7						11		16:00	228		171						399	
04:15	5		11						16		16:15	255		150						405	
04:30	3		26						29		16:30	247		159						406	
04:45	6	18	31	75					37	93	16:45	228	958	178	658					406	1616
05:00	5		32						37		17:00	272		190						462	
05:15	6		40						46		17:15	246		170						416	
05:30	11		63						74		17:30	259		194						453	
05:45	9	31	77	212					86	243	17:45	231	1008	156	710					387	1718
06:00	17		109						126		18:00	213		155						368	
06:15	22		146						168		18:15	179		160						339	
06:30	41		168						209		18:30	165		165						330	
06:45	58	138	179	602					237	740	18:45	132	689	117	597					249	1286
07:00	88		234						322		19:00	139		91						230	
07:15	78		229						307		19:15	104		88						192	
07:30	108		262						370		19:30	90		74						164	
07:45	144	418	254	979					398	1397	19:45	89	422	69	322					158	744
08:00	172		221						393		20:00	59		84						143	
08:15	122		214						336		20:15	82		86						168	
08:30	119		241						360		20:30	125		54						179	
08:45	160	573	197	873					357	1446	20:45	103	369	53	277					156	646
09:00	108		135						243		21:00	100		56						156	
09:15	102		138						240		21:15	64		49						113	
09:30	87		144						231		21:30	52		49						101	
09:45	120	417	143	560					263	977	21:45	39	255	35	189					74	444
10:00	114		144						258		22:00	64		31						95	
10:15	102		135						237		22:15	39		36						75	
10:30	108		126						234		22:30	36		25						61	
10:45	140	464	136	541					276	1005	22:45	25	164	17	109					42	273
11:00	139		134						273		23:00	19		18						37	
11:15	142		135						277		23:15	21		16						37	
11:30	131		160						291		23:30	13		19						32	
11:45	147	559	125	554					272	1113	23:45	15	68	13	66					28	134
TOTALS		2709		4483						**7192**	**TOTALS**		6705		5523						**12228**
SPLIT %		37.7%		62.3%						**37.0%**	**SPLIT %**		54.8%		45.2%						**63.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	9,414	10,006	0	0	19,420

AM Peak Hour	11:45	07:00			**07:30**	**PM Peak Hour**	15:15	15:00			**15:15**
AM Pk Volume	602	979			**1497**	**PM Pk Volume**	1049	762			**1781**
Pk Hr Factor	0.929	0.934			**0.940**	**Pk Hr Factor**	0.866	0.948			**0.926**
7 - 9 Volume	991	1852	0	0	**2843**	**4 - 6 Volume**	1966	1368	0	0	**3334**
7 - 9 Peak Hour	08:00	07:00			**07:30**	**4 - 6 Peak Hour**	17:00	16:45			**16:45**
7 - 9 Pk Volume	573	979	0	0	**1497**	**4 - 6 Pk Volume**	1008	732	0	0	**1737**
Pk Hr Factor	0.833	0.934	0.000	0.000	**0.940**	**Pk Hr Factor**	0.926	0.943	0.000	0.000	**0.940**

Prepared by NDS/ATD

VOLUME

Fair Oaks Blvd Bet. Treecrest Ave & Madison Ave

Day: Thursday
Date: 2/7/2019

City: Citrus Heights
Project #: CA19_7046_002

DAILY TOTALS	NB	SB	EB	WB	Total
	9,009	9,884	0	0	18,893

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	20		7						27		12:00	162		148						310	
00:15	9		12						21		12:15	145		188						333	
00:30	11		3						14		12:30	160		155						315	
00:45	7	47	7	29					14	76	12:45	152	619	157	648					309	1267
01:00	12		9						21		13:00	172		153						325	
01:15	5		7						12		13:15	125		162						287	
01:30	5		3						8		13:30	130		186						316	
01:45	6	28	2	21					8	49	13:45	163	590	189	690					352	1280
02:00	4		2						6		14:00	232		179						411	
02:15	4		5						9		14:15	207		162						369	
02:30	7		6						13		14:30	194		179						373	
02:45	6	21	4	17					10	38	14:45	193	826	162	682					355	1508
03:00	5		5						10		15:00	168		189						357	
03:15	3		4						7		15:15	217		155						372	
03:30	7		10						17		15:30	173		177						350	
03:45	5	20	18	37					23	57	15:45	203	761	154	675					357	1436
04:00	6		10						16		16:00	237		163						400	
04:15	6		12						18		16:15	199		176						375	
04:30	3		18						21		16:30	236		164						400	
04:45	6	21	28	68					34	89	16:45	255	927	189	692					444	1619
05:00	6		34						40		17:00	223		181						404	
05:15	6		61						67		17:15	228		186						414	
05:30	10		62						72		17:30	232		153						385	
05:45	12	34	82	239					94	273	17:45	209	892	151	671					360	1563
06:00	21		70						91		18:00	183		148						331	
06:15	24		170						194		18:15	182		153						335	
06:30	45		177						222		18:30	152		131						283	
06:45	65	155	157	574					222	729	18:45	116	633	118	550					234	1183
07:00	89		213						302		19:00	141		98						239	
07:15	79		222						301		19:15	108		95						203	
07:30	95		247						342		19:30	101		84						185	
07:45	143	406	235	917					378	1323	19:45	80	430	59	336					139	766
08:00	156		236						392		20:00	81		74						155	
08:15	122		201						323		20:15	64		80						144	
08:30	121		224						345		20:30	82		54						136	
08:45	131	530	173	834					304	1364	20:45	67	294	47	255					114	549
09:00	102		138						240		21:00	78		56						134	
09:15	102		119						221		21:15	64		49						113	
09:30	105		126						231		21:30	49		42						91	
09:45	113	422	128	511					241	933	21:45	48	239	34	181					82	420
10:00	81		127						208		22:00	43		35						78	
10:15	97		147						244		22:15	47		29						76	
10:30	102		123						225		22:30	23		15						38	
10:45	97	377	127	524					224	901	22:45	24	137	22	101					46	238
11:00	117		124						241		23:00	31		24						55	
11:15	121		130						251		23:15	19		23						42	
11:30	126		168						294		23:30	21		21						42	
11:45	147	511	131	553					278	1064	23:45	18	89	11	79					29	168
TOTALS		2572		4324						**6896**	**TOTALS**		6437		5560						**11997**
SPLIT %		37.3%		62.7%						**36.5%**	**SPLIT %**		53.7%		46.3%						**63.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	9,009	9,884	0	0	18,893

AM Peak Hour	11:45	07:15			**07:45**	**PM Peak Hour**	16:30	16:30			**16:30**
AM Pk Volume	614	940			**1438**	**PM Pk Volume**	942	720			**1662**
Pk Hr Factor	0.948	0.951			**0.917**	**Pk Hr Factor**	0.924	0.952			**0.936**
7 - 9 Volume	936	1751	0	0	**2687**	**4 - 6 Volume**	1819	1363	0	0	**3182**
7 - 9 Peak Hour	07:45	07:15			**07:45**	**4 - 6 Peak Hour**	16:30	16:30			**16:30**
7 - 9 Pk Volume	542	940	0	0	**1438**	**4 - 6 Pk Volume**	942	720	0	0	**1662**
Pk Hr Factor	0.869	0.951	0.000	0.000	**0.917**	**Pk Hr Factor**	0.924	0.952	0.000	0.000	**0.936**

Appendix B

Analysis Worksheets for Baseline (2019) Conditions

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	89	1198	264	1138	120	123	322	228	201	546	201
v/c Ratio	0.67	0.60	1.01	0.47	0.15	0.69	0.55	0.50	0.89	0.90	0.52
Control Delay	86.6	33.4	115.7	25.6	3.8	80.0	58.0	10.4	96.1	75.6	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.6	33.4	115.7	25.6	3.8	80.0	58.0	10.4	96.1	75.6	20.9
Queue Length 50th (ft)	80	304	~247	249	0	109	145	0	180	261	41
Queue Length 95th (ft)	136	353	#411	298	32	177	198	77	#305	#394	125
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	314	2009	262	2421	807	213	590	454	251	606	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.60	1.01	0.47	0.15	0.58	0.55	0.50	0.80	0.90	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	925	153	230	990	104	114	299	212	187	508	187
Future Volume (veh/h)	80	925	153	230	990	104	114	299	212	187	508	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	1028	170	264	1138	120	123	322	228	201	546	201
Peak Hour Factor	0.90	0.90	0.90	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	110	1770	292	264	2500	766	148	546	243	224	621	272
Arrive On Green	0.06	0.41	0.41	0.15	0.49	0.49	0.08	0.15	0.15	0.13	0.17	0.17
Sat Flow, veh/h	1767	4371	721	1767	5066	1552	1781	3554	1585	1781	3554	1559
Grp Volume(v), veh/h	89	794	404	264	1138	120	123	322	228	201	546	201
Grp Sat Flow(s),veh/h/ln	1767	1689	1715	1767	1689	1552	1781	1777	1585	1781	1777	1559
Q Serve(g_s), s	7.0	25.6	25.7	20.9	20.5	5.9	9.5	11.8	19.9	15.6	21.0	17.1
Cycle Q Clear(g_c), s	7.0	25.6	25.7	20.9	20.5	5.9	9.5	11.8	19.9	15.6	21.0	17.1
Prop In Lane	1.00		0.42	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	1368	695	264	2500	766	148	546	243	224	621	272
V/C Ratio(X)	0.81	0.58	0.58	1.00	0.46	0.16	0.83	0.59	0.94	0.90	0.88	0.74
Avail Cap(c_a), veh/h	317	1368	695	264	2500	766	215	546	243	253	621	272
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	32.4	32.4	59.6	23.2	19.5	63.2	55.1	58.6	60.3	56.3	54.7
Incr Delay (d2), s/veh	5.3	1.8	3.5	55.6	0.6	0.4	15.6	1.6	39.5	27.5	13.7	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	10.9	11.4	13.4	8.4	2.3	5.0	5.4	10.7	8.8	10.6	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.1	34.2	36.0	115.1	23.8	19.9	78.8	56.7	98.1	87.8	70.0	64.8
LnGrp LOS	E	C	D	F	C	B	E	E	F	F	E	E
Approach Vol, veh/h		1287			1522			673			948	
Approach Delay, s/veh		37.2			39.3			74.8			72.7	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	74.4	19.7	30.1	26.0	62.0	22.7	27.1
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	9.0	22.5	11.5	23.0	22.9	27.7	17.6	21.9
Green Ext Time (p_c), s	0.0	10.0	0.1	0.0	0.0	9.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	90	35	29	44	627	16	976
v/c Ratio	0.24	0.39	0.21	0.14	0.26	0.31	0.11	0.57
Control Delay	40.0	14.8	40.0	1.4	40.0	9.5	40.4	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	14.8	40.0	1.4	40.0	9.5	40.4	15.4
Queue Length 50th (ft)	18	0	15	0	19	58	7	162
Queue Length 95th (ft)	49	32	39	0	56	132	30	254
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	1095	987	1101	985	714	3224	714	3213
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.09	0.03	0.03	0.06	0.19	0.02	0.30

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	4	70	18	6	20	38	528	11	14	849	20
Future Volume (veh/h)	29	4	70	18	6	20	38	528	11	14	849	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	5	90	26	9	29	44	614	13	16	954	22
Peak Hour Factor	0.78	0.78	0.78	0.70	0.70	0.70	0.86	0.86	0.86	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	19	139	75	26	88	75	1812	38	34	1720	40
Arrive On Green	0.09	0.09	0.09	0.06	0.06	0.06	0.04	0.51	0.51	0.02	0.48	0.48
Sat Flow, veh/h	1578	213	1569	1340	464	1579	1781	3558	75	1781	3548	82
Grp Volume(v), veh/h	42	0	90	35	0	29	44	306	321	16	478	498
Grp Sat Flow(s),veh/h/ln	1791	0	1569	1803	0	1579	1781	1777	1857	1781	1777	1853
Q Serve(g_s), s	1.4	0.0	3.6	1.2	0.0	1.1	1.6	6.6	6.6	0.6	12.3	12.3
Cycle Q Clear(g_c), s	1.4	0.0	3.6	1.2	0.0	1.1	1.6	6.6	6.6	0.6	12.3	12.3
Prop In Lane	0.88		1.00	0.74		1.00	1.00		0.04	1.00		0.04
Lane Grp Cap(c), veh/h	158	0	139	101	0	88	75	905	945	34	861	898
V/C Ratio(X)	0.27	0.00	0.65	0.35	0.00	0.33	0.59	0.34	0.34	0.47	0.55	0.55
Avail Cap(c_a), veh/h	1106	0	969	1114	0	975	688	1920	2007	688	1920	2003
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	28.6	29.4	0.0	29.4	30.5	9.4	9.4	31.4	11.8	11.8
Incr Delay (d2), s/veh	0.3	0.0	1.9	0.8	0.0	0.8	2.7	0.4	0.4	3.6	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.4	0.5	0.0	0.4	0.7	2.3	2.4	0.3	4.4	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	0.0	30.4	30.2	0.0	30.2	33.1	9.9	9.9	35.0	12.9	12.9
LnGrp LOS	C	A	C	C	A	C	C	A	A	D	B	B
Approach Vol, veh/h		132			64			671			992	
Approach Delay, s/veh		29.6			30.2			11.4			13.2	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	36.7		8.7	6.7	38.3		11.1
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.6	14.3		3.2	2.6	8.6		5.6
Green Ext Time (p_c), s	0.0	17.1		0.1	0.0	9.2		0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	8	576	2	6	930
Future Vol, veh/h	11	8	576	2	6	930
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	11	633	2	7	1022

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1165	324	0	0	641	0
Stage 1	640	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	187	672	-	-	939	-
Stage 1	487	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	183	668	-	-	934	-
Mov Cap-2 Maneuver	316	-	-	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	558	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	406	934	-
HCM Lane V/C Ratio	-	-	0.067	0.007	-
HCM Control Delay (s)	-	-	14.5	8.9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	69	27	23	33	625	11	1024
v/c Ratio	0.23	0.30	0.15	0.10	0.18	0.26	0.06	0.48
Control Delay	39.4	14.0	39.9	0.9	39.8	7.9	39.7	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	14.0	39.9	0.9	39.8	7.9	39.7	12.8
Queue Length 50th (ft)	20	0	12	0	15	60	5	170
Queue Length 95th (ft)	62	40	33	0	46	127	23	260
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	1122	996	1114	1018	819	3209	819	3181
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.07	0.02	0.02	0.04	0.19	0.01	0.32

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	8	63	18	1	16	28	520	5	10	874	37
Future Volume (veh/h)	34	8	63	18	1	16	28	520	5	10	874	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	9	69	26	1	23	33	619	6	11	982	42
Peak Hour Factor	0.91	0.91	0.91	0.70	0.70	0.70	0.84	0.84	0.84	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	28	122	79	3	73	62	1921	19	25	1771	76
Arrive On Green	0.08	0.08	0.08	0.05	0.05	0.05	0.03	0.53	0.53	0.01	0.51	0.51
Sat Flow, veh/h	1446	352	1538	1718	66	1585	1781	3606	35	1781	3468	148
Grp Volume(v), veh/h	46	0	69	27	0	23	33	305	320	11	503	521
Grp Sat Flow(s),veh/h/ln	1798	0	1538	1784	0	1585	1781	1777	1864	1781	1777	1839
Q Serve(g_s), s	1.6	0.0	2.8	0.9	0.0	0.9	1.2	6.2	6.3	0.4	12.5	12.5
Cycle Q Clear(g_c), s	1.6	0.0	2.8	0.9	0.0	0.9	1.2	6.2	6.3	0.4	12.5	12.5
Prop In Lane	0.80		1.00	0.96		1.00	1.00		0.02	1.00		0.08
Lane Grp Cap(c), veh/h	142	0	122	82	0	73	62	947	993	25	907	939
V/C Ratio(X)	0.32	0.00	0.57	0.33	0.00	0.32	0.54	0.32	0.32	0.45	0.55	0.55
Avail Cap(c_a), veh/h	1114	0	953	1105	0	982	690	1926	2021	690	1926	1994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	0.0	28.7	29.8	0.0	29.8	30.7	8.5	8.5	31.6	10.8	10.8
Incr Delay (d2), s/veh	0.5	0.0	1.5	0.9	0.0	0.9	2.7	0.4	0.4	4.6	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.0	0.4	0.0	0.4	0.5	2.1	2.2	0.2	4.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	0.0	30.2	30.7	0.0	30.7	33.3	8.9	8.9	36.2	11.9	11.8
LnGrp LOS	C	A	C	C	A	C	C	A	A	D	B	B
Approach Vol, veh/h		115			50			658			1035	
Approach Delay, s/veh		29.6			30.7			10.1			12.1	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	38.3		8.6	5.6	39.7		10.7
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.2	14.5		2.9	2.4	8.3		4.8
Green Ext Time (p_c), s	0.0	18.5		0.1	0.0	9.1		0.1

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	220	1246	165	150	1313	162	168	324	133	229	510	275
v/c Ratio	0.71	0.70	0.19	0.63	0.54	0.20	0.65	0.56	0.37	0.72	0.78	0.65
Control Delay	70.1	29.5	5.2	70.2	26.4	8.8	70.2	53.1	9.7	70.0	58.9	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.1	29.5	5.2	70.2	26.4	8.8	70.2	53.1	9.7	70.0	58.9	24.9
Queue Length 50th (ft)	94	407	6	64	272	20	72	134	0	98	219	81
Queue Length 95th (ft)	122	559	43	89	362	63	100	154	42	138	254	161
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	385	1769	854	326	2435	801	435	903	495	435	917	530
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.70	0.19	0.46	0.54	0.20	0.39	0.36	0.27	0.53	0.56	0.52

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	30	153	1034	137	123	1077	133	141	272	112	208	464
Future Volume (veh/h)	30	153	1034	137	123	1077	133	141	272	112	208	464
Initial Q (Qb), veh		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		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		184	1246	165	150	1313	162	168	324	133	229	510
Peak Hour Factor		0.83	0.83	0.83	0.82	0.82	0.82	0.84	0.84	0.84	0.91	0.91
Percent Heavy Veh, %		3	3	3	3	3	3	2	2	2	2	2
Cap, veh/h		235	1784	795	201	2512	776	220	658	290	281	720
Arrive On Green		0.07	0.51	0.51	0.06	0.50	0.50	0.06	0.19	0.19	0.08	0.20
Sat Flow, veh/h		3428	3526	1571	3428	5066	1565	3456	3554	1567	3456	3554
Grp Volume(v), veh/h		184	1246	165	150	1313	162	168	324	133	229	510
Grp Sat Flow(s),veh/h/ln		1714	1763	1571	1714	1689	1565	1728	1777	1567	1728	1777
Q Serve(g_s), s		6.9	35.1	7.5	5.6	22.9	7.6	6.2	10.6	9.8	8.5	17.4
Cycle Q Clear(g_c), s		6.9	35.1	7.5	5.6	22.9	7.6	6.2	10.6	9.8	8.5	17.4
Prop In Lane		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		235	1784	795	201	2512	776	220	658	290	281	720
V/C Ratio(X)		0.78	0.70	0.21	0.75	0.52	0.21	0.76	0.49	0.46	0.82	0.71
Avail Cap(c_a), veh/h		382	1784	795	330	2512	776	439	908	400	439	918
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	0.88	0.88
Uniform Delay (d), s/veh		59.6	24.5	17.7	60.2	22.3	18.4	59.9	47.5	47.2	58.8	48.2
Incr Delay (d2), s/veh		2.1	2.3	0.6	2.1	0.8	0.6	2.1	0.2	0.4	2.9	1.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		3.1	15.0	2.9	2.5	9.2	2.9	2.8	4.7	3.9	3.8	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		61.7	26.8	18.3	62.3	23.1	19.0	62.0	47.7	47.6	61.7	49.2
LnGrp LOS		E	C	B	E	C	B	E	D	D	E	D
Approach Vol, veh/h			1595			1625			625			1014
Approach Delay, s/veh			30.0			26.3			51.5			55.0
Approach LOS			C			C			D			E

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	69.7	13.8	32.1	13.1	71.0	16.1	29.9
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	14.5	* 44	16.5	* 34	12.5	* 46	16.5	33.2
Max Q Clear Time (g_c+I1), s	8.9	24.9	8.2	23.8	7.6	37.1	10.5	12.6
Green Ext Time (p_c), s	0.1	15.7	0.1	1.2	0.0	7.3	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	250
Future Volume (veh/h)	250
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	275
Peak Hour Factor	0.91
Percent Heavy Veh, %	2
Cap, veh/h	320
Arrive On Green	0.20
Sat Flow, veh/h	1580
Grp Volume(v), veh/h	275
Grp Sat Flow(s),veh/h/ln	1580
Q Serve(g_s), s	21.8
Cycle Q Clear(g_c), s	21.8
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	320
V/C Ratio(X)	0.86
Avail Cap(c_a), veh/h	408
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.88
Uniform Delay (d), s/veh	50.0
Incr Delay (d2), s/veh	10.3
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	9.5
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	60.3
LnGrp LOS	E
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	104	76	24	1050	36	1347
v/c Ratio	0.43	0.36	0.24	0.31	0.33	0.39
Control Delay	28.2	40.9	55.1	8.7	56.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	40.9	55.1	8.7	56.7	9.0
Queue Length 50th (ft)	14	19	17	113	25	153
Queue Length 95th (ft)	33	40	42	161	55	211
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	610	568	192	3442	227	3478
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.13	0.13	0.31	0.16	0.39

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	19	49	32	14	19	21	887	26	31	1144	28
Future Volume (veh/h)	13	19	49	32	14	19	21	887	26	31	1144	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	17	24	63	38	16	22	24	1020	30	36	1315	32
Peak Hour Factor	0.78	0.78	0.78	0.85	0.85	0.85	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	3	3	3
Cap, veh/h	44	62	90	70	30	41	80	3361	99	80	3373	82
Arrive On Green	0.06	0.06	0.06	0.04	0.04	0.04	0.05	0.67	0.67	0.05	0.66	0.66
Sat Flow, veh/h	760	1073	1560	1695	733	1011	1767	5054	149	1767	5086	124
Grp Volume(v), veh/h	41	0	63	40	0	36	24	681	369	36	873	474
Grp Sat Flow(s),veh/h/ln	1832	0	1560	1786	0	1654	1767	1689	1825	1767	1689	1833
Q Serve(g_s), s	2.4	0.0	4.4	2.4	0.0	2.3	1.4	9.3	9.3	2.2	12.9	12.9
Cycle Q Clear(g_c), s	2.4	0.0	4.4	2.4	0.0	2.3	1.4	9.3	9.3	2.2	12.9	12.9
Prop In Lane	0.41		1.00	0.95		0.61	1.00		0.08	1.00		0.07
Lane Grp Cap(c), veh/h	106	0	90	73	0	68	80	2246	1214	80	2240	1216
V/C Ratio(X)	0.39	0.00	0.70	0.55	0.00	0.53	0.30	0.30	0.30	0.45	0.39	0.39
Avail Cap(c_a), veh/h	323	0	275	299	0	277	194	2246	1214	230	2240	1216
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	0.0	50.9	51.7	0.0	51.7	50.8	7.7	7.7	51.2	8.4	8.4
Incr Delay (d2), s/veh	0.9	0.0	3.7	2.4	0.0	2.4	0.8	0.0	0.1	1.5	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.8	1.1	0.0	1.0	0.7	3.1	3.4	1.0	4.5	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	0.0	54.6	54.1	0.0	54.1	51.6	7.8	7.8	52.6	8.9	9.4
LnGrp LOS	D	A	D	D	A	D	D	A	A	D	A	A
Approach Vol, veh/h		104			76			1074			1383	
Approach Delay, s/veh		53.1			54.1			8.7			10.2	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.9	78.1		10.1	9.7	78.3		11.9
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 12	* 39		18.4	* 14	36.9		19.4
Max Q Clear Time (g_c+I1), s	3.4	14.9		4.4	4.2	11.3		6.4
Green Ext Time (p_c), s	0.0	7.0		0.2	0.0	5.1		0.3

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	48	49	0	1	0
Future Vol, veh/h	0	48	49	0	1	0
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	62	70	0	1	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	142	3	2	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	140	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	851	1081	1620	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	813	1079	1618	-	-	-
Mov Cap-2 Maneuver	813	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	886	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1618	-	1079	-	-
HCM Lane V/C Ratio	0.043	-	0.058	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	233	1305	191	1174	240	177	608	242	161	410	202
v/c Ratio	0.88	0.62	0.82	0.57	0.32	0.86	0.93	0.51	0.82	0.74	0.49
Control Delay	88.3	32.7	85.2	34.2	7.7	95.7	78.0	12.4	90.5	65.3	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.3	32.7	85.2	34.2	7.7	95.7	78.0	12.4	90.5	65.3	11.5
Queue Length 50th (ft)	209	335	169	304	24	160	291	13	145	191	2
Queue Length 95th (ft)	292	379	243	345	74	#288	#458	97	218	247	73
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	317	2109	264	2059	750	213	652	475	251	556	411
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.62	0.72	0.57	0.32	0.83	0.93	0.51	0.64	0.74	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	19	186	968	180	164	1010	206	172	590	235	143	365
Future Volume (veh/h)	19	186	968	180	164	1010	206	172	590	235	143	365
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99	1.00		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		211	1100	205	191	1174	240	177	608	242	161	410
Peak Hour Factor		0.88	0.88	0.88	0.86	0.86	0.86	0.97	0.97	0.97	0.89	0.89
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		234	1747	325	215	2021	619	201	628	280	185	520
Arrive On Green		0.13	0.41	0.41	0.12	0.40	0.40	0.11	0.18	0.18	0.10	0.15
Sat Flow, veh/h		1781	4313	803	1781	5106	1564	1781	3554	1585	1781	3554
Grp Volume(v), veh/h		211	868	437	191	1174	240	177	608	242	161	410
Grp Sat Flow(s),veh/h/ln		1781	1702	1712	1781	1702	1564	1781	1777	1585	1781	1777
Q Serve(g_s), s		16.3	28.5	28.6	14.8	25.3	15.3	13.7	23.8	20.8	12.5	15.6
Cycle Q Clear(g_c), s		16.3	28.5	28.6	14.8	25.3	15.3	13.7	23.8	20.8	12.5	15.6
Prop In Lane		1.00		0.47	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		234	1379	693	215	2021	619	201	628	280	185	520
V/C Ratio(X)		0.90	0.63	0.63	0.89	0.58	0.39	0.88	0.97	0.86	0.87	0.79
Avail Cap(c_a), veh/h		319	1379	693	266	2021	619	215	628	280	253	543
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	0.86	0.86	0.86	1.00	1.00
Uniform Delay (d), s/veh		59.9	33.3	33.3	60.6	33.2	30.2	61.2	57.2	56.0	61.8	57.7
Incr Delay (d2), s/veh		18.6	2.2	4.3	23.7	1.2	1.8	27.5	25.6	20.6	17.0	7.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		8.6	12.2	12.7	8.1	10.7	6.2	7.7	12.9	9.9	6.5	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		78.6	35.5	37.6	84.3	34.4	32.0	88.8	82.9	76.6	78.8	65.0
LnGrp LOS		E	D	D	F	C	C	F	F	E	E	E
Approach Vol, veh/h			1516			1605			1027			773
Approach Delay, s/veh			42.1			40.0			82.4			73.8
Approach LOS			D			D			F			E

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.3	60.7	23.9	26.1	22.0	62.0	19.6	30.3
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	18.3	27.3	15.7	19.7	16.8	30.6	14.5	25.8
Green Ext Time (p_c), s	0.1	10.3	0.1	0.6	0.1	10.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	180
Future Volume (veh/h)	180
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	202
Peak Hour Factor	0.89
Percent Heavy Veh, %	2
Cap, veh/h	228
Arrive On Green	0.15
Sat Flow, veh/h	1562
Grp Volume(v), veh/h	202
Grp Sat Flow(s),veh/h/ln	1562
Q Serve(g_s), s	17.7
Cycle Q Clear(g_c), s	17.7
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	228
V/C Ratio(X)	0.88
Avail Cap(c_a), veh/h	239
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	58.6
Incr Delay (d2), s/veh	29.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	8.9
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	87.7
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	92	21	27	103	964	27	692
v/c Ratio	0.24	0.33	0.14	0.14	0.43	0.50	0.18	0.49
Control Delay	35.1	11.4	43.6	1.4	40.4	14.5	43.3	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	11.4	43.6	1.4	40.4	14.5	43.3	18.7
Queue Length 50th (ft)	23	0	9	0	42	153	11	113
Queue Length 95th (ft)	68	42	38	0	125	329	49	250
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	1147	1026	1156	1039	707	3183	707	3161
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.02	0.03	0.15	0.30	0.04	0.22

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	12	83	11	7	22	96	868	29	25	608	35
Future Volume (veh/h)	38	12	83	11	7	22	96	868	29	25	608	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	13	92	13	8	27	103	933	31	27	654	38
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	39	145	51	31	72	133	1719	57	53	1512	88
Arrive On Green	0.09	0.09	0.09	0.05	0.05	0.05	0.07	0.49	0.49	0.03	0.44	0.44
Sat Flow, veh/h	1376	426	1570	1123	691	1585	1781	3509	117	1781	3408	198
Grp Volume(v), veh/h	55	0	92	21	0	27	103	472	492	27	341	351
Grp Sat Flow(s),veh/h/ln	1802	0	1570	1814	0	1585	1781	1777	1849	1781	1777	1829
Q Serve(g_s), s	1.8	0.0	3.5	0.7	0.0	1.0	3.5	11.4	11.4	0.9	8.2	8.2
Cycle Q Clear(g_c), s	1.8	0.0	3.5	0.7	0.0	1.0	3.5	11.4	11.4	0.9	8.2	8.2
Prop In Lane	0.76		1.00	0.62		1.00	1.00		0.06	1.00		0.11
Lane Grp Cap(c), veh/h	166	0	145	82	0	72	133	870	906	53	788	811
V/C Ratio(X)	0.33	0.00	0.64	0.25	0.00	0.38	0.78	0.54	0.54	0.51	0.43	0.43
Avail Cap(c_a), veh/h	1165	0	1015	1173	0	1025	720	2010	2092	720	2010	2069
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	0.0	27.1	28.5	0.0	28.7	28.1	11.0	11.0	29.6	11.8	11.9
Incr Delay (d2), s/veh	0.4	0.0	1.7	0.6	0.0	1.2	3.6	1.1	1.0	2.7	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.3	0.3	0.0	0.4	1.6	4.0	4.2	0.4	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	0.0	28.8	29.1	0.0	29.9	31.8	12.1	12.0	32.3	12.6	12.6
LnGrp LOS	C	A	C	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		147			48			1067			719	
Approach Delay, s/veh		28.0			29.5			13.9			13.3	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.1	32.8		7.9	7.3	35.6		11.1
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	5.5	10.2		3.0	2.9	13.4		5.5
Green Ext Time (p_c), s	0.0	10.5		0.0	0.0	16.9		0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	7	1000	12	11	694
Future Vol, veh/h	8	7	1000	12	11	694
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	95	95	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	10	1053	13	11	723

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1450	539	0	0	1072	0
Stage 1	1066	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	122	487	-	-	646	-
Stage 1	292	-	-	-	-	-
Stage 2	658	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	118	484	-	-	642	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	282	-	-	-	-	-
Stage 2	658	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.1	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	297	642	-
HCM Lane V/C Ratio	-	-	0.072	0.018	-
HCM Control Delay (s)	-	-	18.1	10.7	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	97	68	14	11	51	1024	8	720
v/c Ratio	0.37	0.24	0.07	0.05	0.28	0.53	0.05	0.48
Control Delay	39.7	12.4	40.2	0.4	46.2	14.8	48.4	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	12.4	40.2	0.4	46.2	14.8	48.4	19.0
Queue Length 50th (ft)	37	0	5	0	20	127	3	116
Queue Length 95th (ft)	126	35	25	0	91	450	26	310
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	1169	1047	1163	1042	746	3159	746	3109
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06	0.01	0.01	0.07	0.32	0.01	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	4	57	10	0	8	46	921	11	8	635	57
Future Volume (veh/h)	77	4	57	10	0	8	46	921	11	8	635	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	5	68	14	0	11	51	1012	12	8	661	59
Peak Hour Factor	0.84	0.84	0.84	0.70	0.70	0.70	0.91	0.91	0.91	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	8	139	73	0	64	84	1865	22	18	1580	141
Arrive On Green	0.09	0.09	0.09	0.04	0.00	0.04	0.05	0.52	0.52	0.01	0.48	0.48
Sat Flow, veh/h	1694	92	1574	1781	0	1561	1781	3597	43	1781	3291	293
Grp Volume(v), veh/h	97	0	68	14	0	11	51	500	524	8	357	363
Grp Sat Flow(s),veh/h/ln	1786	0	1574	1781	0	1561	1781	1777	1862	1781	1777	1807
Q Serve(g_s), s	3.3	0.0	2.6	0.5	0.0	0.4	1.7	11.7	11.7	0.3	8.1	8.1
Cycle Q Clear(g_c), s	3.3	0.0	2.6	0.5	0.0	0.4	1.7	11.7	11.7	0.3	8.1	8.1
Prop In Lane	0.95		1.00	1.00		1.00	1.00		0.02	1.00		0.16
Lane Grp Cap(c), veh/h	158	0	139	73	0	64	84	921	966	18	853	868
V/C Ratio(X)	0.61	0.00	0.49	0.19	0.00	0.17	0.61	0.54	0.54	0.43	0.42	0.42
Avail Cap(c_a), veh/h	1150	0	1014	1148	0	1006	717	2003	2100	717	2003	2037
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	27.0	28.8	0.0	28.7	29.0	10.0	10.0	30.5	10.5	10.5
Incr Delay (d2), s/veh	1.4	0.0	1.0	0.5	0.0	0.5	2.6	1.0	1.0	5.8	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.9	0.2	0.0	0.2	0.8	4.0	4.2	0.1	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	0.0	27.9	29.2	0.0	29.2	31.6	11.0	11.0	36.4	11.2	11.2
LnGrp LOS	C	A	C	C	A	C	C	B	B	D	B	B
Approach Vol, veh/h		165			25			1075			728	
Approach Delay, s/veh		28.4			29.2			12.0			11.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	35.1		8.2	5.3	37.5		11.1
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.7	10.1		2.5	2.3	13.7		5.3
Green Ext Time (p_c), s	0.0	11.1		0.0	0.0	18.5		0.2

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	331	1270	172	165	1237	255	168	528	123	183	345	197
v/c Ratio	0.79	0.72	0.20	0.65	0.54	0.32	0.66	0.82	0.30	0.71	0.52	0.45
Control Delay	68.9	30.0	4.3	70.6	28.7	9.0	70.9	61.6	4.4	73.6	49.9	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	30.0	4.3	70.6	28.7	9.0	70.9	61.6	4.4	73.6	49.9	10.4
Queue Length 50th (ft)	141	426	3	71	271	32	72	228	0	78	140	8
Queue Length 95th (ft)	186	#630	48	106	389	110	108	268	26	118	176	71
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	541	1769	864	330	2290	805	330	876	503	303	860	517
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.72	0.20	0.50	0.54	0.32	0.51	0.60	0.24	0.60	0.40	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	41	270	1194	162	25	135	1200	247	156	491	114	174
Future Volume (veh/h)	41	270	1194	162	25	135	1200	247	156	491	114	174
Initial Q (Qb), veh		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		0.99	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
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		287	1270	172		139	1237	255	168	528	123	183
Peak Hour Factor		0.94	0.94	0.94		0.97	0.97	0.97	0.93	0.93	0.93	0.95
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		339	1877	837		190	2476	767	219	639	283	234
Arrive On Green		0.10	0.53	0.53		0.05	0.48	0.48	0.06	0.18	0.18	0.07
Sat Flow, veh/h		3456	3554	1584		3456	5106	1582	3456	3554	1574	3456
Grp Volume(v), veh/h		287	1270	172		139	1237	255	168	528	123	183
Grp Sat Flow(s),veh/h/ln		1728	1777	1584		1728	1702	1582	1728	1777	1574	1728
Q Serve(g_s), s		10.6	34.1	7.5		5.1	21.4	12.9	6.2	18.6	9.0	6.8
Cycle Q Clear(g_c), s		10.6	34.1	7.5		5.1	21.4	12.9	6.2	18.6	9.0	6.8
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		339	1877	837		190	2476	767	219	639	283	234
V/C Ratio(X)		0.85	0.68	0.21		0.73	0.50	0.33	0.77	0.83	0.43	0.78
Avail Cap(c_a), veh/h		545	1877	837		332	2476	767	332	880	390	306
HCM Platoon Ratio		1.00	1.00	1.00		1.00	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	1.00	1.00	1.00	0.89
Uniform Delay (d), s/veh		57.6	22.5	16.2		60.5	22.8	20.6	59.9	51.4	47.4	59.7
Incr Delay (d2), s/veh		3.6	2.0	0.6		2.0	0.7	1.2	2.4	3.4	0.4	6.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.8	14.5	2.9		2.3	8.7	5.0	2.8	8.6	3.6	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		61.2	24.5	16.8		62.5	23.5	21.7	62.3	54.7	47.8	65.7
LnGrp LOS		E	C	B		E	C	C	E	D	D	E
Approach Vol, veh/h			1729				1631			819		
Approach Delay, s/veh			29.8				26.5			55.2		
Approach LOS			C				C			E		

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.3	68.2	13.7	29.7	12.6	73.9	14.3	29.2
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	20.5	* 44	12.5	* 32	12.5	* 52	11.5	32.2
Max Q Clear Time (g_c+I1), s	12.6	23.4	8.2	17.2	7.1	36.1	8.8	20.6
Green Ext Time (p_c), s	0.1	16.8	0.0	0.9	0.0	12.4	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	36.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	328	187
Future Volume (veh/h)	328	187
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	345	197
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	2	2
Cap, veh/h	654	289
Arrive On Green	0.18	0.18
Sat Flow, veh/h	3554	1570
Grp Volume(v), veh/h	345	197
Grp Sat Flow(s),veh/h/ln	1777	1570
Q Serve(g_s), s	11.4	15.2
Cycle Q Clear(g_c), s	11.4	15.2
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	654	289
V/C Ratio(X)	0.53	0.68
Avail Cap(c_a), veh/h	864	382
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.89	0.89
Uniform Delay (d), s/veh	47.9	49.5
Incr Delay (d2), s/veh	0.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	6.1
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	48.1	50.8
LnGrp LOS	D	D
Approach Vol, veh/h	725	
Approach Delay, s/veh	53.3	
Approach LOS	D	

Timer - Assigned Phs

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	179	148	75	1725	88	1375
v/c Ratio	0.52	0.60	1.44	0.55	0.62	0.65
Control Delay	37.2	43.2	316.2	17.8	80.0	33.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	43.2	316.2	17.8	80.0	33.8
Queue Length 50th (ft)	46	36	~88	287	79	359
Queue Length 95th (ft)	50	63	#223	527	133	412
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	636	389	52	3141	266	2122
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.38	1.44	0.55	0.33	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	38	31	57	44	20	59	18	56	1631	60	81	1228
Future Volume (veh/h)	38	31	57	44	20	59	18	56	1631	60	81	1228
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856		1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	54	44	81	53	24	71		57	1664	61	88	1335
Peak Hour Factor	0.70	0.70	0.70	0.83	0.83	0.83		0.98	0.98	0.98	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3		3	3	3	3	3
Cap, veh/h	75	61	113	75	34	95		82	3267	120	113	3372
Arrive On Green	0.07	0.07	0.07	0.06	0.06	0.06		0.05	0.65	0.65	0.06	0.67
Sat Flow, veh/h	1015	828	1528	1235	559	1565		1767	5015	184	1767	5051
Grp Volume(v), veh/h	96	0	83	77	0	71		57	1120	605	88	892
Grp Sat Flow(s),veh/h/ln	1805	0	1566	1794	0	1565		1767	1689	1822	1767	1689
Q Serve(g_s), s	7.3	0.0	7.3	5.9	0.0	6.3		4.4	24.2	24.2	6.9	16.7
Cycle Q Clear(g_c), s	7.3	0.0	7.3	5.9	0.0	6.3		4.4	24.2	24.2	6.9	16.7
Prop In Lane	0.56		0.98	0.69		1.00		1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	134	0	116	108	0	95		82	2200	1187	113	2254
V/C Ratio(X)	0.72	0.00	0.71	0.71	0.00	0.75		0.70	0.51	0.51	0.78	0.40
Avail Cap(c_a), veh/h	315	0	273	185	0	161		266	2200	1187	269	2254
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.4	0.0	63.4	64.6	0.0	64.7		65.8	12.7	12.7	64.6	10.5
Incr Delay (d2), s/veh	2.7	0.0	3.0	3.2	0.0	4.4		3.9	0.1	0.2	4.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	3.0	2.8	0.0	2.6		2.1	9.0	9.7	3.2	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	0.0	66.4	67.7	0.0	69.1		69.7	12.8	12.9	68.9	11.0
LnGrp LOS	E	A	E	E	A	E		E	B	B	E	B
Approach Vol, veh/h		179			148				1782			1463
Approach Delay, s/veh		66.2			68.4				14.6			14.7
Approach LOS		E			E				B			B

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	98.6		14.1	13.6	96.3		16.0
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 21	* 59		14.4	* 21	58.9		24.4
Max Q Clear Time (g_c+I1), s	6.4	18.7		8.3	8.9	26.2		9.3
Green Ext Time (p_c), s	0.0	7.9		0.2	0.1	10.8		0.5

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	37
Future Volume (veh/h)	37
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1856
Adj Flow Rate, veh/h	40
Peak Hour Factor	0.92
Percent Heavy Veh, %	3
Cap, veh/h	101
Arrive On Green	0.67
Sat Flow, veh/h	151
Grp Volume(v), veh/h	483
Grp Sat Flow(s),veh/h/ln	1826
Q Serve(g_s), s	16.7
Cycle Q Clear(g_c), s	16.7
Prop In Lane	0.08
Lane Grp Cap(c), veh/h	1219
V/C Ratio(X)	0.40
Avail Cap(c_a), veh/h	1219
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	10.5
Incr Delay (d2), s/veh	1.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	6.9
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	11.5
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	96	49	2	1	0
Future Vol, veh/h	0	96	49	2	1	0
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	72	72	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	107	68	3	1	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	141	3	2	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	852	1081	1620	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	815	1079	1618	-	-	-
Mov Cap-2 Maneuver	815	-	-	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	887	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1618	-	1079	-	-
HCM Lane V/C Ratio	0.042	-	0.099	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Appendix C

Analysis Worksheets for
Baseline (2019) plus Proposed Project Conditions

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	89	1199	264	1138	120	125	322	228	201	546	201
v/c Ratio	0.67	0.60	1.01	0.47	0.15	0.70	0.54	0.50	0.89	0.90	0.52
Control Delay	86.6	33.3	115.9	25.6	3.8	80.6	57.9	10.4	96.1	75.8	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.6	33.3	115.9	25.6	3.8	80.6	57.9	10.4	96.1	75.8	20.9
Queue Length 50th (ft)	80	304	~247	249	0	111	145	0	180	261	41
Queue Length 95th (ft)	136	353	#411	298	32	179	198	77	#305	#394	125
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	314	2009	262	2420	807	213	591	454	251	605	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.60	1.01	0.47	0.15	0.59	0.54	0.50	0.80	0.90	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	925	154	230	990	104	116	299	212	187	508	187
Future Volume (veh/h)	80	925	154	230	990	104	116	299	212	187	508	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	1028	171	264	1138	120	125	322	228	201	546	201
Peak Hour Factor	0.90	0.90	0.90	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	110	1768	294	264	2500	766	150	546	243	224	617	270
Arrive On Green	0.06	0.41	0.41	0.15	0.49	0.49	0.08	0.15	0.15	0.13	0.17	0.17
Sat Flow, veh/h	1767	4366	725	1767	5066	1552	1781	3554	1585	1781	3554	1559
Grp Volume(v), veh/h	89	795	404	264	1138	120	125	322	228	201	546	201
Grp Sat Flow(s),veh/h/ln	1767	1689	1714	1767	1689	1552	1781	1777	1585	1781	1777	1559
Q Serve(g_s), s	7.0	25.6	25.7	20.9	20.5	5.9	9.7	11.8	19.9	15.6	21.0	17.1
Cycle Q Clear(g_c), s	7.0	25.6	25.7	20.9	20.5	5.9	9.7	11.8	19.9	15.6	21.0	17.1
Prop In Lane	1.00		0.42	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	1368	694	264	2500	766	150	546	243	224	617	270
V/C Ratio(X)	0.81	0.58	0.58	1.00	0.46	0.16	0.83	0.59	0.94	0.90	0.89	0.74
Avail Cap(c_a), veh/h	317	1368	694	264	2500	766	215	546	243	253	617	270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	32.4	32.4	59.6	23.2	19.5	63.1	55.1	58.6	60.3	56.5	54.9
Incr Delay (d2), s/veh	5.3	1.8	3.5	55.6	0.6	0.4	16.2	1.6	39.5	27.5	14.4	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	10.9	11.4	13.4	8.4	2.3	5.1	5.4	10.7	8.8	10.7	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.1	34.2	36.0	115.1	23.8	19.9	79.3	56.7	98.1	87.8	70.9	65.3
LnGrp LOS	E	C	D	F	C	B	E	E	F	F	E	E
Approach Vol, veh/h		1288			1522			675			948	
Approach Delay, s/veh		37.2			39.3			74.9			73.3	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	74.4	19.9	29.9	26.0	62.0	22.7	27.1
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	9.0	22.5	11.7	23.0	22.9	27.7	17.6	21.9
Green Ext Time (p_c), s	0.0	10.0	0.1	0.0	0.0	9.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	90	35	29	44	630	16	978
v/c Ratio	0.24	0.39	0.21	0.14	0.26	0.31	0.11	0.57
Control Delay	40.0	14.8	40.0	1.4	40.0	9.5	40.4	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	14.8	40.0	1.4	40.0	9.5	40.4	15.4
Queue Length 50th (ft)	18	0	15	0	19	58	7	162
Queue Length 95th (ft)	49	32	39	0	56	133	30	255
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	1095	987	1101	985	714	3224	714	3213
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.09	0.03	0.03	0.06	0.20	0.02	0.30

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	4	70	18	6	20	38	531	11	14	851	20
Future Volume (veh/h)	29	4	70	18	6	20	38	531	11	14	851	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	5	90	26	9	29	44	617	13	16	956	22
Peak Hour Factor	0.78	0.78	0.78	0.70	0.70	0.70	0.86	0.86	0.86	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	19	139	75	26	88	75	1814	38	34	1722	40
Arrive On Green	0.09	0.09	0.09	0.06	0.06	0.06	0.04	0.51	0.51	0.02	0.49	0.49
Sat Flow, veh/h	1578	213	1569	1340	464	1579	1781	3559	75	1781	3548	82
Grp Volume(v), veh/h	42	0	90	35	0	29	44	308	322	16	479	499
Grp Sat Flow(s),veh/h/ln	1791	0	1569	1803	0	1579	1781	1777	1857	1781	1777	1853
Q Serve(g_s), s	1.4	0.0	3.6	1.2	0.0	1.1	1.6	6.7	6.7	0.6	12.3	12.3
Cycle Q Clear(g_c), s	1.4	0.0	3.6	1.2	0.0	1.1	1.6	6.7	6.7	0.6	12.3	12.3
Prop In Lane	0.88		1.00	0.74		1.00	1.00		0.04	1.00		0.04
Lane Grp Cap(c), veh/h	158	0	139	101	0	88	75	906	947	34	862	899
V/C Ratio(X)	0.27	0.00	0.65	0.35	0.00	0.33	0.59	0.34	0.34	0.47	0.56	0.56
Avail Cap(c_a), veh/h	1105	0	967	1112	0	973	686	1917	2004	686	1917	2000
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	28.6	29.5	0.0	29.5	30.5	9.4	9.4	31.5	11.8	11.8
Incr Delay (d2), s/veh	0.3	0.0	1.9	0.8	0.0	0.8	2.7	0.5	0.4	3.6	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.4	0.5	0.0	0.4	0.7	2.3	2.4	0.3	4.4	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	0.0	30.5	30.3	0.0	30.3	33.2	9.9	9.9	35.1	12.9	12.9
LnGrp LOS	C	A	C	C	A	C	C	A	A	D	B	B
Approach Vol, veh/h		132			64			674			994	
Approach Delay, s/veh		29.7			30.3			11.4			13.2	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	36.8		8.7	6.7	38.4		11.1
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.6	14.3		3.2	2.6	8.7		5.6
Green Ext Time (p_c), s	0.0	17.2		0.1	0.0	9.2		0.1

Intersection Summary		
HCM 6th Ctrl Delay		14.3
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	5	11	0	8	2	576	2	6	930	2
Future Vol, veh/h	3	0	5	11	0	8	2	576	2	6	930	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	6	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	7	16	0	11	2	633	2	7	1022	2

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1169	-	324	1024	0	0	641	0	0
Stage 1	644	-	-	-	-	-	-	-	-
Stage 2	525	-	-	-	-	-	-	-	-
Critical Hdwy	6.84	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	186	0	672	674	-	-	939	-	-
Stage 1	485	0	-	-	-	-	-	-	-
Stage 2	558	0	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	181	0	668	674	-	-	934	-	-
Mov Cap-2 Maneuver	181	0	-	-	-	-	-	-	-
Stage 1	471	0	-	-	-	-	-	-	-
Stage 2	558	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.4	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	674	-	-	261	934	-	-
HCM Lane V/C Ratio	0.003	-	-	0.104	0.007	-	-
HCM Control Delay (s)	10.4	-	-	20.4	8.9	-	-
HCM Lane LOS	B	-	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	-	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	69	27	23	33	627	11	1029
v/c Ratio	0.23	0.30	0.15	0.11	0.18	0.26	0.06	0.48
Control Delay	39.7	14.1	40.3	0.9	40.1	7.8	40.1	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	14.1	40.3	0.9	40.1	7.8	40.1	12.7
Queue Length 50th (ft)	21	0	12	0	15	60	5	171
Queue Length 95th (ft)	62	40	33	0	46	127	23	261
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	1116	991	1108	1013	815	3190	815	3163
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.07	0.02	0.02	0.04	0.20	0.01	0.33

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	8	63	18	1	16	28	522	5	10	878	37
Future Volume (veh/h)	34	8	63	18	1	16	28	522	5	10	878	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	9	69	26	1	23	33	621	6	11	987	42
Peak Hour Factor	0.91	0.91	0.91	0.70	0.70	0.70	0.84	0.84	0.84	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	28	121	79	3	73	62	1927	19	25	1776	76
Arrive On Green	0.08	0.08	0.08	0.05	0.05	0.05	0.03	0.53	0.53	0.01	0.51	0.51
Sat Flow, veh/h	1446	352	1538	1718	66	1585	1781	3606	35	1781	3469	148
Grp Volume(v), veh/h	46	0	69	27	0	23	33	306	321	11	506	523
Grp Sat Flow(s),veh/h/ln	1798	0	1538	1784	0	1585	1781	1777	1864	1781	1777	1839
Q Serve(g_s), s	1.6	0.0	2.8	1.0	0.0	0.9	1.2	6.3	6.3	0.4	12.6	12.6
Cycle Q Clear(g_c), s	1.6	0.0	2.8	1.0	0.0	0.9	1.2	6.3	6.3	0.4	12.6	12.6
Prop In Lane	0.80		1.00	0.96		1.00	1.00		0.02	1.00		0.08
Lane Grp Cap(c), veh/h	142	0	121	82	0	73	62	949	996	25	910	942
V/C Ratio(X)	0.32	0.00	0.57	0.33	0.00	0.32	0.54	0.32	0.32	0.45	0.56	0.56
Avail Cap(c_a), veh/h	1110	0	949	1101	0	978	687	1919	2013	687	1919	1987
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	28.8	30.0	0.0	29.9	30.8	8.5	8.5	31.7	10.8	10.8
Incr Delay (d2), s/veh	0.5	0.0	1.6	0.9	0.0	0.9	2.7	0.4	0.4	4.6	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.0	0.4	0.0	0.4	0.5	2.1	2.2	0.2	4.4	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	0.0	30.3	30.8	0.0	30.9	33.4	8.9	8.9	36.3	11.9	11.8
LnGrp LOS	C	A	C	C	A	C	C	A	A	D	B	B
Approach Vol, veh/h		115			50			660			1040	
Approach Delay, s/veh		29.7			30.8			10.1			12.1	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	38.5		8.6	5.6	39.9		10.7
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.2	14.6		3.0	2.4	8.3		4.8
Green Ext Time (p_c), s	0.0	18.6		0.1	0.0	9.1		0.1

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	223	1246	165	150	1313	162	168	324	133	230	511	278
v/c Ratio	0.72	0.70	0.19	0.63	0.54	0.20	0.65	0.56	0.37	0.72	0.78	0.65
Control Delay	70.2	29.5	5.2	70.2	26.5	8.8	70.2	53.1	9.7	70.1	59.0	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.2	29.5	5.2	70.2	26.5	8.8	70.2	53.1	9.7	70.1	59.0	25.3
Queue Length 50th (ft)	95	407	6	64	273	20	72	134	0	98	220	83
Queue Length 95th (ft)	123	559	43	89	363	63	100	154	42	139	254	164
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	385	1769	854	326	2431	800	435	903	495	435	917	530
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.70	0.19	0.46	0.54	0.20	0.39	0.36	0.27	0.53	0.56	0.52

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	30	155	1034	137	123	1077	133	141	272	112	209	465
Future Volume (veh/h)	30	155	1034	137	123	1077	133	141	272	112	209	465
Initial Q (Qb), veh		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		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		187	1246	165	150	1313	162	168	324	133	230	511
Peak Hour Factor		0.83	0.83	0.83	0.82	0.82	0.82	0.84	0.84	0.84	0.91	0.91
Percent Heavy Veh, %		3	3	3	3	3	3	2	2	2	2	2
Cap, veh/h		238	1778	792	201	2499	772	220	662	292	282	726
Arrive On Green		0.07	0.50	0.50	0.06	0.49	0.49	0.06	0.19	0.19	0.08	0.20
Sat Flow, veh/h		3428	3526	1571	3428	5066	1565	3456	3554	1567	3456	3554
Grp Volume(v), veh/h		187	1246	165	150	1313	162	168	324	133	230	511
Grp Sat Flow(s),veh/h/ln		1714	1763	1571	1714	1689	1565	1728	1777	1567	1728	1777
Q Serve(g_s), s		7.0	35.2	7.6	5.6	23.0	7.6	6.2	10.6	9.8	8.5	17.4
Cycle Q Clear(g_c), s		7.0	35.2	7.6	5.6	23.0	7.6	6.2	10.6	9.8	8.5	17.4
Prop In Lane		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		238	1778	792	201	2499	772	220	662	292	282	726
V/C Ratio(X)		0.78	0.70	0.21	0.75	0.53	0.21	0.76	0.49	0.46	0.82	0.70
Avail Cap(c_a), veh/h		382	1778	792	330	2499	772	439	908	400	439	918
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	0.88	0.88
Uniform Delay (d), s/veh		59.5	24.7	17.8	60.2	22.5	18.6	59.9	47.4	47.0	58.7	48.1
Incr Delay (d2), s/veh		2.2	2.3	0.6	2.1	0.8	0.6	2.1	0.2	0.4	3.0	0.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		3.1	15.0	2.9	2.5	9.3	2.9	2.8	4.7	3.9	3.8	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		61.7	27.0	18.4	62.3	23.3	19.2	62.0	47.6	47.4	61.7	49.0
LnGrp LOS		E	C	B	E	C	B	E	D	D	E	D
Approach Vol, veh/h			1598			1625			625			1019
Approach Delay, s/veh			30.2			26.5			51.4			55.1
Approach LOS			C			C			D			E

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	69.3	13.8	32.4	13.1	70.8	16.1	30.0
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	14.5	* 44	16.5	* 34	12.5	* 46	16.5	33.2
Max Q Clear Time (g_c+I1), s	9.0	25.0	8.2	24.1	7.6	37.2	10.5	12.6
Green Ext Time (p_c), s	0.1	15.7	0.1	1.2	0.0	7.2	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	36.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	253
Future Volume (veh/h)	253
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	278
Peak Hour Factor	0.91
Percent Heavy Veh, %	2
Cap, veh/h	323
Arrive On Green	0.20
Sat Flow, veh/h	1580
Grp Volume(v), veh/h	278
Grp Sat Flow(s),veh/h/ln	1580
Q Serve(g_s), s	22.1
Cycle Q Clear(g_c), s	22.1
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	323
V/C Ratio(X)	0.86
Avail Cap(c_a), veh/h	408
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.88
Uniform Delay (d), s/veh	49.9
Incr Delay (d2), s/veh	10.7
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	9.7
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	60.7
LnGrp LOS	E
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	104	84	24	1051	39	1347
v/c Ratio	0.43	0.38	0.24	0.31	0.35	0.39
Control Delay	28.2	39.0	55.1	8.8	57.1	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	39.0	55.1	8.8	57.1	9.1
Queue Length 50th (ft)	14	20	17	114	27	153
Queue Length 95th (ft)	33	42	42	163	59	212
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	610	569	192	3431	227	3473
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.15	0.13	0.31	0.17	0.39

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	19	49	34	14	24	21	887	27	34	1144	28
Future Volume (veh/h)	13	19	49	34	14	24	21	887	27	34	1144	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	17	24	63	40	16	28	24	1020	31	39	1315	32
Peak Hour Factor	0.78	0.78	0.78	0.85	0.85	0.85	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	3	3	3
Cap, veh/h	44	62	90	68	27	48	80	3352	102	80	3368	82
Arrive On Green	0.06	0.06	0.06	0.04	0.04	0.04	0.05	0.66	0.66	0.05	0.66	0.66
Sat Flow, veh/h	760	1073	1560	1614	653	1147	1767	5048	153	1767	5086	124
Grp Volume(v), veh/h	41	0	63	44	0	40	24	682	369	39	873	474
Grp Sat Flow(s),veh/h/ln	1832	0	1560	1790	0	1625	1767	1689	1824	1767	1689	1833
Q Serve(g_s), s	2.4	0.0	4.4	2.7	0.0	2.6	1.4	9.4	9.4	2.4	13.0	13.0
Cycle Q Clear(g_c), s	2.4	0.0	4.4	2.7	0.0	2.6	1.4	9.4	9.4	2.4	13.0	13.0
Prop In Lane	0.41		1.00	0.90		0.71	1.00		0.08	1.00		0.07
Lane Grp Cap(c), veh/h	106	0	90	75	0	68	80	2243	1211	80	2236	1214
V/C Ratio(X)	0.39	0.00	0.70	0.59	0.00	0.58	0.30	0.30	0.30	0.49	0.39	0.39
Avail Cap(c_a), veh/h	323	0	275	299	0	272	194	2243	1211	230	2236	1214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	0.0	50.9	51.8	0.0	51.7	50.8	7.8	7.8	51.2	8.5	8.5
Incr Delay (d2), s/veh	0.9	0.0	3.7	2.7	0.0	2.9	0.8	0.0	0.1	1.7	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.8	1.3	0.0	1.1	0.7	3.2	3.4	1.1	4.5	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	0.0	54.6	54.5	0.0	54.6	51.6	7.8	7.8	52.9	9.0	9.4
LnGrp LOS	D	A	D	D	A	D	D	A	A	D	A	A
Approach Vol, veh/h		104			84			1075			1386	
Approach Delay, s/veh		53.1			54.6			8.8			10.4	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.9	77.9		10.2	9.7	78.1		11.9
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 12	* 39		18.4	* 14	36.9		19.4
Max Q Clear Time (g_c+I1), s	3.4	15.0		4.7	4.4	11.4		6.4
Green Ext Time (p_c), s	0.0	7.0		0.2	0.0	5.1		0.3

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	48	49	0	1	7
Future Vol, veh/h	4	48	49	0	1	7
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	62	70	0	1	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	147	8	12	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	140	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	845	1074	1607	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	806	1072	1605	-	-	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	886	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1605	-	1045	-	-
HCM Lane V/C Ratio	0.044	-	0.065	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	233	1307	191	1174	240	179	608	242	161	410	202
v/c Ratio	4.40	0.62	0.82	0.61	0.34	0.87	0.93	0.51	0.82	0.74	0.49
Control Delay	1584.6	32.7	85.2	37.1	7.9	96.7	78.0	12.4	90.5	65.4	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1584.6	32.7	85.2	37.1	7.9	96.7	78.0	12.4	90.5	65.4	11.5
Queue Length 50th (ft)	~390	336	169	315	24	162	291	13	145	191	2
Queue Length 95th (ft)	#513	380	243	345	74	#293	#458	97	218	247	73
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	53	2109	264	1914	711	213	652	475	251	555	411
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	4.40	0.62	0.72	0.61	0.34	0.84	0.93	0.51	0.64	0.74	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	19	186	968	182	164	1010	206	174	590	235	143	365
Future Volume (veh/h)	19	186	968	182	164	1010	206	174	590	235	143	365
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99	1.00		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		211	1100	207	191	1174	240	179	608	242	161	410
Peak Hour Factor		0.88	0.88	0.88	0.86	0.86	0.86	0.97	0.97	0.97	0.89	0.89
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		234	1743	328	215	2021	619	202	632	282	185	520
Arrive On Green		0.13	0.41	0.41	0.12	0.40	0.40	0.11	0.18	0.18	0.10	0.15
Sat Flow, veh/h		1781	4305	810	1781	5106	1564	1781	3554	1585	1781	3554
Grp Volume(v), veh/h		211	870	437	191	1174	240	179	608	242	161	410
Grp Sat Flow(s),veh/h/ln		1781	1702	1710	1781	1702	1564	1781	1777	1585	1781	1777
Q Serve(g_s), s		16.3	28.6	28.6	14.8	25.3	15.3	13.9	23.8	20.7	12.5	15.6
Cycle Q Clear(g_c), s		16.3	28.6	28.6	14.8	25.3	15.3	13.9	23.8	20.7	12.5	15.6
Prop In Lane		1.00		0.47	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		234	1379	693	215	2021	619	202	632	282	185	520
V/C Ratio(X)		0.90	0.63	0.63	0.89	0.58	0.39	0.88	0.96	0.86	0.87	0.79
Avail Cap(c_a), veh/h		319	1379	693	266	2021	619	215	632	282	253	543
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	0.86	0.86	0.86	1.00	1.00
Uniform Delay (d), s/veh		59.9	33.3	33.3	60.6	33.2	30.2	61.1	57.1	55.9	61.8	57.7
Incr Delay (d2), s/veh		18.6	2.2	4.3	23.7	1.2	1.8	28.0	24.3	19.8	17.0	7.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		8.6	12.2	12.7	8.1	10.7	6.2	7.9	12.8	9.9	6.5	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		78.6	35.5	37.6	84.3	34.4	32.0	89.1	81.4	75.7	78.8	65.0
LnGrp LOS		E	D	D	F	C	C	F	F	E	E	E
Approach Vol, veh/h			1518			1605			1029			773
Approach Delay, s/veh			42.1			40.0			81.4			73.8
Approach LOS			D			D			F			E

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.3	60.7	24.0	26.1	22.0	62.0	19.6	30.5
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	18.3	27.3	15.9	19.7	16.8	30.6	14.5	25.8
Green Ext Time (p_c), s	0.1	10.3	0.1	0.6	0.1	10.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	180
Future Volume (veh/h)	180
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	202
Peak Hour Factor	0.89
Percent Heavy Veh, %	2
Cap, veh/h	228
Arrive On Green	0.15
Sat Flow, veh/h	1562
Grp Volume(v), veh/h	202
Grp Sat Flow(s),veh/h/ln	1562
Q Serve(g_s), s	17.7
Cycle Q Clear(g_c), s	17.7
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	228
V/C Ratio(X)	0.88
Avail Cap(c_a), veh/h	239
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	58.6
Incr Delay (d2), s/veh	29.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	8.9
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	87.7
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	92	21	27	103	968	27	695
v/c Ratio	0.24	0.33	0.14	0.14	0.43	0.50	0.18	0.50
Control Delay	35.1	11.5	43.6	1.4	40.5	14.5	43.4	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	11.5	43.6	1.4	40.5	14.5	43.4	18.7
Queue Length 50th (ft)	23	0	9	0	42	154	11	114
Queue Length 95th (ft)	68	42	38	0	126	331	49	251
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	1145	1025	1154	1037	706	3180	706	3159
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.02	0.03	0.15	0.30	0.04	0.22

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	12	83	11	7	22	96	871	29	25	611	35
Future Volume (veh/h)	38	12	83	11	7	22	96	871	29	25	611	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	13	92	13	8	27	103	937	31	27	657	38
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	39	145	51	31	72	133	1723	57	53	1516	88
Arrive On Green	0.09	0.09	0.09	0.05	0.05	0.05	0.07	0.49	0.49	0.03	0.44	0.44
Sat Flow, veh/h	1376	426	1570	1123	691	1585	1781	3510	116	1781	3409	197
Grp Volume(v), veh/h	55	0	92	21	0	27	103	474	494	27	342	353
Grp Sat Flow(s),veh/h/ln	1802	0	1570	1814	0	1585	1781	1777	1849	1781	1777	1829
Q Serve(g_s), s	1.8	0.0	3.5	0.7	0.0	1.0	3.5	11.5	11.5	0.9	8.2	8.2
Cycle Q Clear(g_c), s	1.8	0.0	3.5	0.7	0.0	1.0	3.5	11.5	11.5	0.9	8.2	8.2
Prop In Lane	0.76		1.00	0.62		1.00	1.00		0.06	1.00		0.11
Lane Grp Cap(c), veh/h	166	0	145	82	0	72	133	872	908	53	790	814
V/C Ratio(X)	0.33	0.00	0.64	0.26	0.00	0.38	0.78	0.54	0.54	0.51	0.43	0.43
Avail Cap(c_a), veh/h	1161	0	1011	1169	0	1021	717	2003	2085	717	2003	2062
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	27.2	28.6	0.0	28.8	28.2	11.0	11.0	29.7	11.8	11.9
Incr Delay (d2), s/veh	0.4	0.0	1.7	0.6	0.0	1.2	3.6	1.1	1.0	2.7	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.3	0.3	0.0	0.4	1.6	4.1	4.2	0.4	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	0.0	28.9	29.2	0.0	30.0	31.9	12.1	12.0	32.4	12.6	12.6
LnGrp LOS	C	A	C	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		147			48			1071			722	
Approach Delay, s/veh		28.1			29.6			13.9			13.3	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.1	32.9		7.9	7.3	35.8		11.1
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	5.5	10.2		3.0	2.9	13.5		5.5
Green Ext Time (p_c), s	0.0	10.5		0.0	0.0	17.0		0.2

Intersection Summary		
HCM 6th Ctrl Delay		15.2
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	7	1000	12	11	694
Future Vol, veh/h	8	7	1000	12	11	694
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	95	95	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	10	1053	13	11	723

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1450	539	0	0	1072	0
Stage 1	1066	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	122	487	-	-	646	-
Stage 1	292	-	-	-	-	-
Stage 2	658	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	118	484	-	-	642	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	282	-	-	-	-	-
Stage 2	658	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.1	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	297	642	-
HCM Lane V/C Ratio	-	-	0.072	0.018	-
HCM Control Delay (s)	-	-	18.1	10.7	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	97	68	14	11	51	1030	8	725
v/c Ratio	0.37	0.24	0.07	0.05	0.28	0.53	0.05	0.48
Control Delay	40.0	12.4	40.4	0.4	46.6	14.8	49.0	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	12.4	40.4	0.4	46.6	14.8	49.0	19.0
Queue Length 50th (ft)	37	0	6	0	20	128	3	117
Queue Length 95th (ft)	127	35	25	0	92	454	26	312
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	1163	1042	1157	1038	743	3147	743	3098
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.07	0.01	0.01	0.07	0.33	0.01	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	4	57	10	0	8	46	926	11	8	639	57
Future Volume (veh/h)	77	4	57	10	0	8	46	926	11	8	639	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	5	68	14	0	11	51	1018	12	8	666	59
Peak Hour Factor	0.84	0.84	0.84	0.70	0.70	0.70	0.91	0.91	0.91	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	8	139	73	0	64	84	1871	22	18	1587	140
Arrive On Green	0.09	0.09	0.09	0.04	0.00	0.04	0.05	0.52	0.52	0.01	0.48	0.48
Sat Flow, veh/h	1694	92	1574	1781	0	1561	1781	3597	42	1781	3293	291
Grp Volume(v), veh/h	97	0	68	14	0	11	51	503	527	8	359	366
Grp Sat Flow(s),veh/h/ln	1786	0	1574	1781	0	1561	1781	1777	1862	1781	1777	1808
Q Serve(g_s), s	3.3	0.0	2.6	0.5	0.0	0.4	1.8	11.8	11.8	0.3	8.2	8.2
Cycle Q Clear(g_c), s	3.3	0.0	2.6	0.5	0.0	0.4	1.8	11.8	11.8	0.3	8.2	8.2
Prop In Lane	0.95		1.00	1.00		1.00	1.00		0.02	1.00		0.16
Lane Grp Cap(c), veh/h	158	0	139	73	0	64	84	924	969	18	856	871
V/C Ratio(X)	0.61	0.00	0.49	0.19	0.00	0.17	0.61	0.54	0.54	0.43	0.42	0.42
Avail Cap(c_a), veh/h	1145	0	1009	1142	0	1001	714	1993	2089	714	1993	2028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	27.1	28.9	0.0	28.9	29.2	10.0	10.0	30.7	10.5	10.5
Incr Delay (d2), s/veh	1.4	0.0	1.0	0.5	0.0	0.5	2.6	1.0	1.0	5.8	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.0	0.2	0.0	0.2	0.8	4.1	4.3	0.1	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	0.0	28.1	29.4	0.0	29.4	31.8	11.0	11.0	36.5	11.2	11.2
LnGrp LOS	C	A	C	C	A	C	C	B	B	D	B	B
Approach Vol, veh/h		165			25			1081			733	
Approach Delay, s/veh		28.5			29.4			12.0			11.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	35.4		8.2	5.3	37.8		11.1
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.8	10.2		2.5	2.3	13.8		5.3
Green Ext Time (p_c), s	0.0	11.2		0.0	0.0	18.6		0.2

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	334	1270	172	165	1237	256	168	529	123	184	346	200
v/c Ratio	0.79	0.72	0.20	0.65	0.54	0.32	0.66	0.82	0.30	0.71	0.52	0.45
Control Delay	68.9	30.0	4.3	70.6	28.9	9.0	70.9	61.7	4.4	73.6	49.9	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	30.0	4.3	70.6	28.9	9.0	70.9	61.7	4.4	73.6	49.9	10.8
Queue Length 50th (ft)	142	427	3	71	272	32	72	230	0	78	140	11
Queue Length 95th (ft)	188	#630	48	106	389	110	108	269	26	118	176	73
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	541	1767	863	330	2284	804	330	876	503	303	860	517
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.72	0.20	0.50	0.54	0.32	0.51	0.60	0.24	0.61	0.40	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	41	273	1194	162	25	135	1200	248	156	492	114	175
Future Volume (veh/h)	41	273	1194	162	25	135	1200	248	156	492	114	175
Initial Q (Qb), veh		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		0.99	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
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		290	1270	172		139	1237	256	168	529	123	184
Peak Hour Factor		0.94	0.94	0.94		0.97	0.97	0.97	0.93	0.93	0.93	0.95
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		342	1875	836		190	2469	765	219	640	284	235
Arrive On Green		0.10	0.53	0.53		0.05	0.48	0.48	0.06	0.18	0.18	0.07
Sat Flow, veh/h		3456	3554	1584		3456	5106	1582	3456	3554	1574	3456
Grp Volume(v), veh/h		290	1270	172		139	1237	256	168	529	123	184
Grp Sat Flow(s),veh/h/ln		1728	1777	1584		1728	1702	1582	1728	1777	1574	1728
Q Serve(g_s), s		10.7	34.1	7.5		5.1	21.5	13.0	6.2	18.6	9.0	6.8
Cycle Q Clear(g_c), s		10.7	34.1	7.5		5.1	21.5	13.0	6.2	18.6	9.0	6.8
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		342	1875	836		190	2469	765	219	640	284	235
V/C Ratio(X)		0.85	0.68	0.21		0.73	0.50	0.33	0.77	0.83	0.43	0.78
Avail Cap(c_a), veh/h		545	1875	836		332	2469	765	332	880	390	306
HCM Platoon Ratio		1.00	1.00	1.00		1.00	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	1.00	1.00	1.00	0.89
Uniform Delay (d), s/veh		57.6	22.6	16.3		60.5	22.9	20.7	59.9	51.3	47.4	59.6
Incr Delay (d2), s/veh		3.8	2.0	0.6		2.0	0.7	1.2	2.4	3.4	0.4	6.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.9	14.5	2.9		2.3	8.7	5.1	2.8	8.6	3.6	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		61.4	24.5	16.8		62.5	23.6	21.9	62.3	54.8	47.8	65.8
LnGrp LOS		E	C	B		E	C	C	E	D	D	E
Approach Vol, veh/h			1732				1632			820		
Approach Delay, s/veh			30.0				26.6			55.3		
Approach LOS			C				C			E		

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.4	68.1	13.7	29.8	12.6	73.8	14.3	29.2
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	20.5	* 44	12.5	* 32	12.5	* 52	11.5	32.2
Max Q Clear Time (g_c+I1), s	12.7	23.5	8.2	17.5	7.1	36.1	8.8	20.6
Green Ext Time (p_c), s	0.1	16.7	0.0	0.9	0.0	12.3	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	329	190
Future Volume (veh/h)	329	190
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	346	200
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	2	2
Cap, veh/h	656	290
Arrive On Green	0.18	0.18
Sat Flow, veh/h	3554	1570
Grp Volume(v), veh/h	346	200
Grp Sat Flow(s),veh/h/ln	1777	1570
Q Serve(g_s), s	11.4	15.5
Cycle Q Clear(g_c), s	11.4	15.5
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	656	290
V/C Ratio(X)	0.53	0.69
Avail Cap(c_a), veh/h	864	382
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.89	0.89
Uniform Delay (d), s/veh	47.9	49.5
Incr Delay (d2), s/veh	0.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	6.2
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	48.1	51.0
LnGrp LOS	D	D
Approach Vol, veh/h	730	
Approach Delay, s/veh	53.4	
Approach LOS	D	
Timer - Assigned Phs		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	179	156	75	1727	95	1375
v/c Ratio	0.52	0.61	0.58	0.55	0.64	0.43
Control Delay	37.2	42.5	79.4	18.2	80.1	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	42.5	79.4	18.2	80.1	15.3
Queue Length 50th (ft)	46	37	67	292	85	202
Queue Length 95th (ft)	50	65	118	534	141	377
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	636	394	264	3118	266	3184
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.40	0.28	0.55	0.36	0.43

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	38	31	57	46	20	64	18	56	1631	62	87	1228
Future Volume (veh/h)	38	31	57	46	20	64	18	56	1631	62	87	1228
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856		1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	54	44	81	55	24	77		57	1664	63	95	1335
Peak Hour Factor	0.70	0.70	0.70	0.83	0.83	0.83		0.98	0.98	0.98	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3		3	3	3	3	3
Cap, veh/h	75	61	113	80	35	101		82	3224	122	120	3353
Arrive On Green	0.07	0.07	0.07	0.06	0.06	0.06		0.05	0.64	0.64	0.07	0.66
Sat Flow, veh/h	1015	828	1528	1248	545	1565		1767	5008	190	1767	5051
Grp Volume(v), veh/h	96	0	83	79	0	77		57	1122	605	95	892
Grp Sat Flow(s),veh/h/ln	1805	0	1566	1793	0	1565		1767	1689	1821	1767	1689
Q Serve(g_s), s	7.3	0.0	7.3	6.0	0.0	6.8		4.4	24.8	24.8	7.4	16.9
Cycle Q Clear(g_c), s	7.3	0.0	7.3	6.0	0.0	6.8		4.4	24.8	24.8	7.4	16.9
Prop In Lane	0.56		0.98	0.70		1.00		1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	134	0	116	115	0	101		82	2174	1172	120	2242
V/C Ratio(X)	0.72	0.00	0.71	0.69	0.00	0.77		0.70	0.52	0.52	0.79	0.40
Avail Cap(c_a), veh/h	315	0	273	184	0	161		266	2174	1172	269	2242
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.4	0.0	63.4	64.1	0.0	64.5		65.8	13.3	13.3	64.3	10.8
Incr Delay (d2), s/veh	2.7	0.0	3.0	2.7	0.0	4.5		3.9	0.1	0.2	4.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	3.0	2.9	0.0	2.8		2.1	9.2	10.0	3.5	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	0.0	66.4	66.8	0.0	69.0		69.7	13.4	13.5	68.7	11.3
LnGrp LOS	E	A	E	E	A	E		E	B	B	E	B
Approach Vol, veh/h		179			156				1784			1470
Approach Delay, s/veh		66.2			67.9				15.2			15.1
Approach LOS		E			E				B			B

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	98.0		14.6	14.2	95.2		16.0
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 21	* 59		14.4	* 21	58.9		24.4
Max Q Clear Time (g_c+I1), s	6.4	18.9		8.8	9.4	26.8		9.3
Green Ext Time (p_c), s	0.0	7.9		0.2	0.1	10.8		0.5

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	37
Future Volume (veh/h)	37
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1856
Adj Flow Rate, veh/h	40
Peak Hour Factor	0.92
Percent Heavy Veh, %	3
Cap, veh/h	100
Arrive On Green	0.66
Sat Flow, veh/h	151
Grp Volume(v), veh/h	483
Grp Sat Flow(s),veh/h/ln	1826
Q Serve(g_s), s	16.9
Cycle Q Clear(g_c), s	16.9
Prop In Lane	0.08
Lane Grp Cap(c), veh/h	1212
V/C Ratio(X)	0.40
Avail Cap(c_a), veh/h	1212
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	10.8
Incr Delay (d2), s/veh	1.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	7.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	11.7
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	96	49	2	1	6
Future Vol, veh/h	8	96	49	2	1	6
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	72	72	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	107	68	3	1	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	146	8	11	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	846	1074	1608	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	809	1072	1606	-	-	-
Mov Cap-2 Maneuver	809	-	-	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	887	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	7.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1606	-	1046	-	-
HCM Lane V/C Ratio	0.042	-	0.11	-	-
HCM Control Delay (s)	7.3	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Appendix D

Analysis Worksheets for
Baseline (2019) plus Approved Projects Conditions

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	96	1253	271	1148	122	159	347	237	202	588	218
v/c Ratio	0.70	0.63	1.04	0.48	0.15	0.80	0.59	0.51	0.89	1.03	0.58
Control Delay	86.9	33.8	122.8	26.2	4.0	88.8	59.0	10.4	96.5	101.9	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.9	33.8	122.8	26.2	4.0	88.8	59.0	10.4	96.5	101.9	24.8
Queue Length 50th (ft)	87	320	~265	254	0	142	158	0	181	~315	56
Queue Length 95th (ft)	144	371	#424	304	33	#248	213	78	#308	#437	145
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	314	2004	261	2399	800	213	591	462	251	571	377
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.63	1.04	0.48	0.15	0.75	0.59	0.51	0.80	1.03	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	935	193	236	999	106	148	323	220	188	547	203
Future Volume (veh/h)	86	935	193	236	999	106	148	323	220	188	547	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	1039	214	271	1148	122	159	347	237	202	588	218
Peak Hour Factor	0.90	0.90	0.90	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	118	1701	350	264	2478	759	183	546	243	225	552	242
Arrive On Green	0.07	0.41	0.41	0.15	0.49	0.49	0.10	0.15	0.15	0.13	0.16	0.16
Sat Flow, veh/h	1767	4200	864	1767	5066	1552	1781	3554	1585	1781	3554	1558
Grp Volume(v), veh/h	96	835	418	271	1148	122	159	347	237	202	588	218
Grp Sat Flow(s),veh/h/ln	1767	1689	1687	1767	1689	1552	1781	1777	1585	1781	1777	1558
Q Serve(g_s), s	7.5	27.4	27.4	20.9	21.0	6.1	12.3	12.8	20.8	15.6	21.8	19.2
Cycle Q Clear(g_c), s	7.5	27.4	27.4	20.9	21.0	6.1	12.3	12.8	20.8	15.6	21.8	19.2
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	1368	683	264	2478	759	183	546	243	225	552	242
V/C Ratio(X)	0.82	0.61	0.61	1.03	0.46	0.16	0.87	0.64	0.97	0.90	1.06	0.90
Avail Cap(c_a), veh/h	317	1368	683	264	2478	759	215	546	243	253	552	242
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.5	32.9	32.9	59.6	23.6	19.8	61.9	55.6	59.0	60.3	59.1	58.1
Incr Delay (d2), s/veh	5.1	2.0	4.1	62.6	0.6	0.5	24.7	2.2	47.8	27.7	56.6	32.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	11.6	12.0	13.9	8.6	0.1	6.8	5.9	11.6	8.8	14.1	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.7	35.0	37.0	122.2	24.2	20.3	86.6	57.8	106.8	88.0	115.7	90.7
LnGrp LOS	E	C	D	F	C	C	F	E	F	F	F	F
Approach Vol, veh/h		1349			1541			743			1008	
Approach Delay, s/veh		38.1			41.1			79.6			104.7	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	73.8	22.5	27.4	26.0	62.0	22.8	27.1
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	9.5	23.0	14.3	23.8	22.9	29.4	17.6	22.8
Green Ext Time (p_c), s	0.0	10.1	0.1	0.0	0.0	9.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	60.2
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	65	101	37	33	72	843	21	996
v/c Ratio	0.35	0.40	0.24	0.17	0.38	0.41	0.15	0.57
Control Delay	44.9	14.5	45.2	2.6	44.9	10.7	45.4	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	14.5	45.2	2.6	44.9	10.7	45.4	16.9
Queue Length 50th (ft)	31	0	18	0	34	93	10	186
Queue Length 95th (ft)	74	34	45	0	88	201	39	294
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	1032	938	1036	931	648	3037	648	3017
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.11	0.04	0.04	0.11	0.28	0.03	0.33

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	9	79	19	7	23	62	708	17	19	852	35
Future Volume (veh/h)	41	9	79	19	7	23	62	708	17	19	852	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	12	101	27	10	33	72	823	20	21	957	39
Peak Hour Factor	0.78	0.78	0.78	0.70	0.70	0.70	0.86	0.86	0.86	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	32	153	75	28	89	97	1821	44	43	1675	68
Arrive On Green	0.10	0.10	0.10	0.06	0.06	0.06	0.05	0.51	0.51	0.02	0.48	0.48
Sat Flow, veh/h	1465	332	1570	1317	488	1579	1781	3546	86	1781	3476	142
Grp Volume(v), veh/h	65	0	101	37	0	33	72	412	431	21	489	507
Grp Sat Flow(s),veh/h/ln	1797	0	1570	1805	0	1579	1781	1777	1855	1781	1777	1841
Q Serve(g_s), s	2.3	0.0	4.3	1.4	0.0	1.4	2.7	10.1	10.1	0.8	13.5	13.5
Cycle Q Clear(g_c), s	2.3	0.0	4.3	1.4	0.0	1.4	2.7	10.1	10.1	0.8	13.5	13.5
Prop In Lane	0.82		1.00	0.73		1.00	1.00		0.05	1.00		0.08
Lane Grp Cap(c), veh/h	175	0	153	102	0	89	97	913	953	43	856	887
V/C Ratio(X)	0.37	0.00	0.66	0.36	0.00	0.37	0.74	0.45	0.45	0.49	0.57	0.57
Avail Cap(c_a), veh/h	1045	0	913	1049	0	918	647	1808	1888	647	1808	1873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	0.0	29.9	31.3	0.0	31.3	32.1	10.6	10.6	33.2	12.7	12.7
Incr Delay (d2), s/veh	0.5	0.0	1.8	0.8	0.0	0.9	4.2	0.7	0.7	3.2	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.6	0.6	0.0	0.5	1.3	3.6	3.8	0.4	5.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	0.0	31.7	32.0	0.0	32.2	36.2	11.3	11.3	36.3	14.0	13.9
LnGrp LOS	C	A	C	C	A	C	D	B	B	D	B	B
Approach Vol, veh/h		166			70			915			1017	
Approach Delay, s/veh		30.9			32.1			13.3			14.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.2	38.4		9.0	7.1	40.6		12.1
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	4.7	15.5		3.4	2.8	12.1		6.3
Green Ext Time (p_c), s	0.0	17.6		0.1	0.0	13.8		0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	9	783	7	10	933
Future Vol, veh/h	14	9	783	7	10	933
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	13	860	8	11	1025

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1405	440	0	0	874	0
Stage 1	870	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	130	565	-	-	768	-
Stage 1	370	-	-	-	-	-
Stage 2	551	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	125	562	-	-	764	-
Mov Cap-2 Maneuver	250	-	-	-	-	-
Stage 1	356	-	-	-	-	-
Stage 2	551	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	319	764	-
HCM Lane V/C Ratio	-	-	0.103	0.014	-
HCM Control Delay (s)	-	-	17.6	9.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	71	27	23	38	875	15	1041
v/c Ratio	0.35	0.30	0.18	0.12	0.24	0.44	0.10	0.57
Control Delay	42.2	14.2	43.2	1.2	43.0	11.3	42.6	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	14.2	43.2	1.2	43.0	11.3	42.6	14.6
Queue Length 50th (ft)	32	0	13	0	18	98	7	183
Queue Length 95th (ft)	85	41	35	0	52	199	30	283
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	1080	964	1075	985	691	3105	691	3072
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.07	0.03	0.02	0.05	0.28	0.02	0.34

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	9	65	18	1	16	32	729	6	13	879	47
Future Volume (veh/h)	53	9	65	18	1	16	32	729	6	13	879	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	10	71	26	1	23	38	868	7	15	988	53
Peak Hour Factor	0.91	0.91	0.91	0.70	0.70	0.70	0.84	0.84	0.84	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	22	127	78	3	72	68	1930	16	32	1757	94
Arrive On Green	0.08	0.08	0.08	0.05	0.05	0.05	0.04	0.53	0.53	0.02	0.51	0.51
Sat Flow, veh/h	1530	264	1539	1718	66	1585	1781	3613	29	1781	3425	184
Grp Volume(v), veh/h	68	0	71	27	0	23	38	427	448	15	513	528
Grp Sat Flow(s),veh/h/ln	1794	0	1539	1784	0	1585	1781	1777	1865	1781	1777	1832
Q Serve(g_s), s	2.4	0.0	2.9	1.0	0.0	0.9	1.4	9.8	9.8	0.6	13.1	13.1
Cycle Q Clear(g_c), s	2.4	0.0	2.9	1.0	0.0	0.9	1.4	9.8	9.8	0.6	13.1	13.1
Prop In Lane	0.85		1.00	0.96		1.00	1.00		0.02	1.00		0.10
Lane Grp Cap(c), veh/h	148	0	127	81	0	72	68	949	996	32	912	940
V/C Ratio(X)	0.46	0.00	0.56	0.33	0.00	0.32	0.56	0.45	0.45	0.46	0.56	0.56
Avail Cap(c_a), veh/h	1082	0	928	1076	0	956	672	1876	1969	672	1876	1934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	0.0	29.3	30.7	0.0	30.7	31.4	9.5	9.5	32.2	11.0	11.0
Incr Delay (d2), s/veh	0.8	0.0	1.4	0.9	0.0	0.9	2.7	0.7	0.6	3.8	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.1	0.4	0.0	0.4	0.6	3.4	3.5	0.3	4.7	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	0.0	30.7	31.6	0.0	31.6	34.1	10.1	10.1	36.0	12.2	12.1
LnGrp LOS	C	A	C	C	A	C	C	B	B	D	B	B
Approach Vol, veh/h		139			50			913			1056	
Approach Delay, s/veh		30.3			31.6			11.1			12.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	39.3		8.6	5.9	40.7		11.1
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.4	15.1		3.0	2.6	11.8		4.9
Green Ext Time (p_c), s	0.0	18.9		0.1	0.0	14.6		0.2

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	255	1407	170	213	1448	290	171	438	175	278	512	278
v/c Ratio	0.75	0.84	0.21	0.71	0.62	0.36	0.66	0.77	0.44	0.78	0.75	0.64
Control Delay	70.6	36.6	7.2	71.1	29.5	11.1	70.1	61.2	9.6	71.6	56.5	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.6	36.6	7.2	71.1	29.5	11.1	70.1	61.2	9.6	71.6	56.5	24.7
Queue Length 50th (ft)	109	524	14	91	324	50	73	190	0	119	218	84
Queue Length 95th (ft)	138	#754	57	118	418	117	102	207	47	164	253	165
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	392	1677	810	340	2343	811	435	903	526	435	920	530
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.84	0.21	0.63	0.62	0.36	0.39	0.49	0.33	0.64	0.56	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	30	182	1168	141	175	1187	238	144	368	147	253	466
Future Volume (veh/h)	30	182	1168	141	175	1187	238	144	368	147	253	466
Initial Q (Qb), veh		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		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		219	1407	170	213	1448	290	171	438	175	278	512
Peak Hour Factor		0.83	0.83	0.83	0.82	0.82	0.82	0.84	0.84	0.84	0.91	0.91
Percent Heavy Veh, %		3	3	3	3	3	3	2	2	2	2	2
Cap, veh/h		270	1710	762	263	2448	756	223	617	272	329	726
Arrive On Green		0.08	0.49	0.49	0.08	0.48	0.48	0.06	0.17	0.17	0.10	0.20
Sat Flow, veh/h		3428	3526	1571	3428	5066	1565	3456	3554	1566	3456	3554
Grp Volume(v), veh/h		219	1407	170	213	1448	290	171	438	175	278	512
Grp Sat Flow(s),veh/h/ln		1714	1763	1571	1714	1689	1565	1728	1777	1566	1728	1777
Q Serve(g_s), s		8.2	44.5	8.1	8.0	26.9	15.3	6.3	15.1	13.5	10.3	17.4
Cycle Q Clear(g_c), s		8.2	44.5	8.1	8.0	26.9	15.3	6.3	15.1	13.5	10.3	17.4
Prop In Lane		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		270	1710	762	263	2448	756	223	617	272	329	726
V/C Ratio(X)		0.81	0.82	0.22	0.81	0.59	0.38	0.77	0.71	0.64	0.84	0.71
Avail Cap(c_a), veh/h		382	1710	762	330	2448	756	439	908	400	439	918
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	0.82	0.82
Uniform Delay (d), s/veh		58.9	28.7	19.3	59.1	24.3	21.3	59.8	50.6	50.0	57.9	48.1
Incr Delay (d2), s/veh		5.7	4.6	0.7	9.1	1.1	1.5	2.1	0.6	1.0	7.2	0.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		3.8	19.5	3.1	3.8	10.9	5.9	2.8	6.8	5.4	4.8	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		64.7	33.3	20.0	68.2	25.4	22.8	61.9	51.2	50.9	65.0	49.0
LnGrp LOS		E	C	B	E	C	C	E	D	D	E	D
Approach Vol, veh/h			1796			1951			784			1068
Approach Delay, s/veh			35.9			29.7			53.5			56.0
Approach LOS			D			C			D			E

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	68.0	13.9	32.4	15.5	68.3	17.9	28.4
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	14.5	* 44	16.5	* 34	12.5	* 46	16.5	33.2
Max Q Clear Time (g_c+I1), s	10.2	28.9	8.3	24.1	10.0	46.5	12.3	17.1
Green Ext Time (p_c), s	0.1	13.5	0.1	1.2	0.0	0.0	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	40.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	253
Future Volume (veh/h)	253
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	278
Peak Hour Factor	0.91
Percent Heavy Veh, %	2
Cap, veh/h	323
Arrive On Green	0.20
Sat Flow, veh/h	1580
Grp Volume(v), veh/h	278
Grp Sat Flow(s),veh/h/ln	1580
Q Serve(g_s), s	22.1
Cycle Q Clear(g_c), s	22.1
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	323
V/C Ratio(X)	0.86
Avail Cap(c_a), veh/h	408
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.82
Uniform Delay (d), s/veh	49.9
Incr Delay (d2), s/veh	10.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	9.6
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	60.0
LnGrp LOS	E
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	130	99	44	1370	52	1426
v/c Ratio	0.49	0.42	0.38	0.43	0.42	0.45
Control Delay	30.6	37.7	57.7	11.8	58.5	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	37.7	57.7	11.8	58.5	11.7
Queue Length 50th (ft)	21	22	30	171	36	178
Queue Length 95th (ft)	41	46	63	239	71	247
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	621	573	192	3170	227	3201
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.17	0.23	0.43	0.23	0.45

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	25	55	37	16	31	38	1153	39	45	1208	32
Future Volume (veh/h)	21	25	55	37	16	31	38	1153	39	45	1208	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	27	32	71	44	19	36	44	1325	45	52	1389	37
Peak Hour Factor	0.78	0.78	0.78	0.85	0.85	0.85	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	3	3	3
Cap, veh/h	54	64	101	70	30	58	80	3271	111	84	3301	88
Arrive On Green	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.65	0.65	0.05	0.65	0.65
Sat Flow, veh/h	837	992	1561	1507	653	1240	1767	5027	171	1767	5073	135
Grp Volume(v), veh/h	59	0	71	52	0	47	44	890	480	52	925	501
Grp Sat Flow(s),veh/h/ln	1829	0	1561	1795	0	1605	1767	1689	1820	1767	1689	1831
Q Serve(g_s), s	3.4	0.0	4.9	3.2	0.0	3.1	2.7	13.8	13.8	3.2	14.5	14.5
Cycle Q Clear(g_c), s	3.4	0.0	4.9	3.2	0.0	3.1	2.7	13.8	13.8	3.2	14.5	14.5
Prop In Lane	0.46		1.00	0.84		0.77	1.00		0.09	1.00		0.07
Lane Grp Cap(c), veh/h	118	0	101	84	0	75	80	2197	1184	84	2197	1191
V/C Ratio(X)	0.50	0.00	0.71	0.63	0.00	0.62	0.55	0.41	0.41	0.62	0.42	0.42
Avail Cap(c_a), veh/h	322	0	275	300	0	269	194	2197	1184	230	2197	1191
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	0.0	50.4	51.5	0.0	51.5	51.4	9.1	9.1	51.4	9.2	9.2
Incr Delay (d2), s/veh	1.2	0.0	3.3	2.9	0.0	3.1	2.2	0.0	0.1	2.8	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	2.0	1.5	0.0	1.3	1.2	4.7	5.1	1.5	5.1	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	0.0	53.8	54.4	0.0	54.6	53.5	9.2	9.2	54.2	9.8	10.3
LnGrp LOS	D	A	D	D	A	D	D	A	A	D	A	B
Approach Vol, veh/h		130			99			1414			1478	
Approach Delay, s/veh		52.5			54.5			10.6			11.6	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.9	76.7		10.7	9.9	76.7		12.7
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 12	* 39		18.4	* 14	36.9		19.4
Max Q Clear Time (g_c+I1), s	4.7	16.5		5.2	5.2	15.8		6.9
Green Ext Time (p_c), s	0.0	7.4		0.2	0.0	6.8		0.3

Intersection Summary		
HCM 6th Ctrl Delay		14.2
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	63	49	3	4	3
Future Vol, veh/h	0	63	49	3	4	3
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	82	70	4	6	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	153	10	11	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	144	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	839	1071	1608	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	800	1069	1606	-	-	-
Mov Cap-2 Maneuver	800	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	6.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1606	-	1069	-	-
HCM Lane V/C Ratio	0.044	-	0.077	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	255	1364	197	1202	241	216	644	249	163	431	216
v/c Ratio	0.90	0.65	0.83	0.60	0.33	1.01	0.99	0.53	0.82	0.80	0.53
Control Delay	91.1	33.5	85.9	35.4	8.3	125.2	89.8	14.4	91.0	69.1	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.1	33.5	85.9	35.4	8.3	125.2	89.8	14.4	91.0	69.1	13.6
Queue Length 50th (ft)	227	357	174	322	27	~203	~324	23	147	202	11
Queue Length 95th (ft)	#345	399	#261	354	78	#374	#495	112	219	261	87
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	317	2095	264	2014	735	213	649	469	251	540	408
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.65	0.75	0.60	0.33	1.01	0.99	0.53	0.65	0.80	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	19	205	986	215	169	1034	207	210	625	242	145	384
Future Volume (veh/h)	19	205	986	215	169	1034	207	210	625	242	145	384
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99	1.00		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		233	1120	244	197	1202	241	216	644	249	163	431
Peak Hour Factor		0.88	0.88	0.88	0.86	0.86	0.86	0.97	0.97	0.97	0.89	0.89
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		256	1694	369	221	1976	605	215	672	300	187	539
Arrive On Green		0.14	0.41	0.41	0.12	0.39	0.39	0.12	0.19	0.19	0.10	0.15
Sat Flow, veh/h		1781	4183	911	1781	5106	1564	1781	3554	1585	1781	3554
Grp Volume(v), veh/h		233	911	453	197	1202	241	216	644	249	163	431
Grp Sat Flow(s),veh/h/ln		1781	1702	1690	1781	1702	1564	1781	1777	1585	1781	1777
Q Serve(g_s), s		18.0	30.5	30.5	15.2	26.4	15.6	16.9	25.1	21.2	12.6	16.4
Cycle Q Clear(g_c), s		18.0	30.5	30.5	15.2	26.4	15.6	16.9	25.1	21.2	12.6	16.4
Prop In Lane		1.00		0.54	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		256	1379	685	221	1976	605	215	672	300	187	539
V/C Ratio(X)		0.91	0.66	0.66	0.89	0.61	0.40	1.00	0.96	0.83	0.87	0.80
Avail Cap(c_a), veh/h		319	1379	685	266	1976	605	215	672	300	253	543
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	0.83	0.83	0.83	1.00	1.00
Uniform Delay (d), s/veh		59.1	33.8	33.8	60.4	34.4	31.1	61.5	56.2	54.6	61.8	57.3
Incr Delay (d2), s/veh		23.0	2.5	5.0	24.9	1.4	2.0	57.1	22.1	15.0	17.6	8.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		9.8	13.1	13.5	8.4	11.2	6.3	11.1	13.3	9.7	6.6	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		82.1	36.3	38.8	85.3	35.8	33.0	118.6	78.3	69.6	79.4	65.6
LnGrp LOS		F	D	D	F	D	C	F	E	E	E	E
Approach Vol, veh/h			1597			1640			1109			810
Approach Delay, s/veh			43.7			41.3			84.2			75.9
Approach LOS			D			D			F			E

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	59.5	25.0	26.8	22.5	62.0	19.8	32.1
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	20.0	28.4	18.9	21.0	17.2	32.5	14.6	27.1
Green Ext Time (p_c), s	0.1	10.4	0.0	0.1	0.1	10.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	56.7
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	192
Future Volume (veh/h)	192
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	216
Peak Hour Factor	0.89
Percent Heavy Veh, %	2
Cap, veh/h	237
Arrive On Green	0.15
Sat Flow, veh/h	1563
Grp Volume(v), veh/h	216
Grp Sat Flow(s),veh/h/ln	1563
Q Serve(g_s), s	19.0
Cycle Q Clear(g_c), s	19.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	237
V/C Ratio(X)	0.91
Avail Cap(c_a), veh/h	239
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	58.5
Incr Delay (d2), s/veh	35.3
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	9.9
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	93.7
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	82	94	27	29	104	1019	31	744
v/c Ratio	0.35	0.33	0.19	0.15	0.46	0.54	0.22	0.53
Control Delay	39.6	11.7	47.0	1.7	45.3	15.9	47.0	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	11.7	47.0	1.7	45.3	15.9	47.0	20.0
Queue Length 50th (ft)	37	0	12	0	47	177	14	132
Queue Length 95th (ft)	99	45	46	0	133	358	56	273
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	1024	928	1032	937	632	3046	632	3010
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.10	0.03	0.03	0.16	0.33	0.05	0.25

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	14	85	14	8	24	97	919	29	29	638	54
Future Volume (veh/h)	59	14	85	14	8	24	97	919	29	29	638	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	16	94	17	10	29	104	988	31	31	686	58
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	33	150	56	33	77	134	1765	55	59	1516	128
Arrive On Green	0.10	0.10	0.10	0.05	0.05	0.05	0.08	0.50	0.50	0.03	0.46	0.46
Sat Flow, veh/h	1447	351	1570	1142	672	1585	1781	3517	110	1781	3309	279
Grp Volume(v), veh/h	82	0	94	27	0	29	104	499	520	31	368	376
Grp Sat Flow(s),veh/h/ln	1798	0	1570	1813	0	1585	1781	1777	1850	1781	1777	1811
Q Serve(g_s), s	2.9	0.0	3.8	0.9	0.0	1.2	3.8	12.8	12.8	1.1	9.3	9.4
Cycle Q Clear(g_c), s	2.9	0.0	3.8	0.9	0.0	1.2	3.8	12.8	12.8	1.1	9.3	9.4
Prop In Lane	0.80		1.00	0.63		1.00	1.00		0.06	1.00		0.15
Lane Grp Cap(c), veh/h	172	0	150	88	0	77	134	892	929	59	814	830
V/C Ratio(X)	0.48	0.00	0.63	0.31	0.00	0.38	0.78	0.56	0.56	0.53	0.45	0.45
Avail Cap(c_a), veh/h	1090	0	952	1099	0	961	675	1885	1963	675	1885	1921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	0.0	28.7	30.3	0.0	30.4	30.0	11.4	11.4	31.4	12.2	12.2
Incr Delay (d2), s/veh	0.8	0.0	1.6	0.7	0.0	1.1	3.6	1.1	1.1	2.7	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.4	0.4	0.0	0.5	1.7	4.6	4.8	0.5	3.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	30.3	31.0	0.0	31.5	33.6	12.5	12.5	34.2	13.0	13.0
LnGrp LOS	C	A	C	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		176			56			1123			775	
Approach Delay, s/veh		29.7			31.3			14.4			13.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	35.5		8.3	7.6	38.4		11.7
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	5.8	11.4		3.2	3.1	14.8		5.8
Green Ext Time (p_c), s	0.0	11.6		0.1	0.0	18.3		0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	8	1038	14	14	719
Future Vol, veh/h	9	8	1038	14	14	719
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	95	95	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	11	1093	15	15	749

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1512	560	0	0	1114	0
Stage 1	1107	-	-	-	-	-
Stage 2	405	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	111	472	-	-	623	-
Stage 1	278	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	106	469	-	-	619	-
Mov Cap-2 Maneuver	208	-	-	-	-	-
Stage 1	265	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	282	619	-
HCM Lane V/C Ratio	-	-	0.086	0.024	-
HCM Control Delay (s)	-	-	19	11	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	69	14	13	52	1097	9	770
v/c Ratio	0.43	0.23	0.08	0.06	0.30	0.55	0.06	0.49
Control Delay	42.8	12.9	43.7	0.4	49.7	15.1	52.2	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	12.9	43.7	0.4	49.7	15.1	52.2	19.1
Queue Length 50th (ft)	47	0	6	0	21	147	4	132
Queue Length 95th (ft)	155	37	26	0	96	492	29	334
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	1113	1000	1107	996	693	3057	693	3001
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.07	0.01	0.01	0.08	0.36	0.01	0.26

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	6	58	10	0	9	47	985	14	9	672	67
Future Volume (veh/h)	93	6	58	10	0	9	47	985	14	9	672	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	7	69	14	0	13	52	1082	15	9	700	70
Peak Hour Factor	0.84	0.84	0.84	0.70	0.70	0.70	0.91	0.91	0.91	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	11	157	75	0	66	82	1913	27	20	1617	162
Arrive On Green	0.10	0.10	0.10	0.04	0.00	0.04	0.05	0.53	0.53	0.01	0.50	0.50
Sat Flow, veh/h	1680	106	1575	1781	0	1559	1781	3588	50	1781	3253	325
Grp Volume(v), veh/h	118	0	69	14	0	13	52	536	561	9	382	388
Grp Sat Flow(s),veh/h/ln	1786	0	1575	1781	0	1559	1781	1777	1861	1781	1777	1801
Q Serve(g_s), s	4.3	0.0	2.8	0.5	0.0	0.5	1.9	13.6	13.6	0.3	9.3	9.3
Cycle Q Clear(g_c), s	4.3	0.0	2.8	0.5	0.0	0.5	1.9	13.6	13.6	0.3	9.3	9.3
Prop In Lane	0.94		1.00	1.00		1.00	1.00		0.03	1.00		0.18
Lane Grp Cap(c), veh/h	178	0	157	75	0	66	82	947	992	20	883	895
V/C Ratio(X)	0.66	0.00	0.44	0.19	0.00	0.20	0.63	0.57	0.57	0.44	0.43	0.43
Avail Cap(c_a), veh/h	1057	0	932	1054	0	923	659	1840	1927	659	1840	1865
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	0.0	28.7	31.2	0.0	31.3	31.7	10.5	10.5	33.2	10.9	10.9
Incr Delay (d2), s/veh	1.6	0.0	0.7	0.4	0.0	0.5	3.0	1.1	1.0	5.4	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	1.0	0.2	0.0	0.2	0.9	4.8	5.0	0.2	3.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	0.0	29.4	31.7	0.0	31.8	34.6	11.6	11.6	38.6	11.6	11.6
LnGrp LOS	C	A	C	C	A	C	C	B	B	D	B	B
Approach Vol, veh/h		187			27			1149			779	
Approach Delay, s/veh		30.4			31.7			12.7			11.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	38.9		8.5	5.5	41.3		12.3
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.9	11.3		2.5	2.3	15.6		6.3
Green Ext Time (p_c), s	0.0	12.2		0.0	0.0	20.4		0.3

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	348	1388	174	221	1334	337	169	531	166	244	346	198
v/c Ratio	0.80	0.82	0.21	0.75	0.60	0.42	0.66	0.82	0.40	0.84	0.50	0.44
Control Delay	69.5	35.6	5.6	74.0	31.0	10.9	70.9	61.2	10.2	83.1	48.5	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	35.6	5.6	74.0	31.0	10.9	70.9	61.2	10.2	83.1	48.5	10.7
Queue Length 50th (ft)	148	520	9	94	309	54	72	230	6	105	138	11
Queue Length 95th (ft)	195	#767	56	138	428	155	109	270	63	#170	176	74
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	541	1688	825	334	2217	809	330	876	503	303	860	515
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.82	0.21	0.66	0.60	0.42	0.51	0.61	0.33	0.81	0.40	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	42	285	1305	164	25	189	1294	327	157	494	154	232
Future Volume (veh/h)	42	285	1305	164	25	189	1294	327	157	494	154	232
Initial Q (Qb), veh		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		0.99	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
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		303	1388	174		195	1334	337	169	531	166	244
Peak Hour Factor		0.94	0.94	0.94		0.97	0.97	0.97	0.93	0.93	0.93	0.95
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		355	1755	782		246	2361	731	220	642	285	294
Arrive On Green		0.10	0.49	0.49		0.07	0.46	0.46	0.06	0.18	0.18	0.08
Sat Flow, veh/h		3456	3554	1584		3456	5106	1582	3456	3554	1575	3456
Grp Volume(v), veh/h		303	1388	174		195	1334	337	169	531	166	244
Grp Sat Flow(s),veh/h/ln		1728	1777	1584		1728	1702	1582	1728	1777	1575	1728
Q Serve(g_s), s		11.2	42.2	8.1		7.2	24.7	18.9	6.3	18.7	12.6	9.0
Cycle Q Clear(g_c), s		11.2	42.2	8.1		7.2	24.7	18.9	6.3	18.7	12.6	9.0
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		355	1755	782		246	2361	731	220	642	285	294
V/C Ratio(X)		0.85	0.79	0.22		0.79	0.57	0.46	0.77	0.83	0.58	0.83
Avail Cap(c_a), veh/h		545	1755	782		332	2361	731	332	880	390	306
HCM Platoon Ratio		1.00	1.00	1.00		1.00	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	1.00	1.00	1.00	0.88
Uniform Delay (d), s/veh		57.4	27.3	18.7		59.4	25.4	23.9	59.9	51.3	48.8	58.6
Incr Delay (d2), s/veh		5.0	3.7	0.7		6.3	1.0	2.1	2.5	3.5	0.7	14.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.1	18.4	3.1		3.4	10.2	7.5	2.8	8.6	5.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		62.4	31.1	19.4		65.7	26.4	26.0	62.4	54.8	49.5	72.6
LnGrp LOS		E	C	B		E	C	C	E	D	D	E
Approach Vol, veh/h			1865				1866			866		
Approach Delay, s/veh			35.1				30.4			55.2		
Approach LOS			D				C			E		

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	65.3	13.8	32.1	14.8	69.4	16.5	29.3
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	20.5	* 44	12.5	* 32	12.5	* 52	11.5	32.2
Max Q Clear Time (g_c+I1), s	13.2	26.7	8.3	17.0	9.2	44.2	11.0	20.7
Green Ext Time (p_c), s	0.2	15.1	0.0	0.9	0.0	6.8	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	39.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	329	188
Future Volume (veh/h)	329	188
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	346	198
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	2	2
Cap, veh/h	718	317
Arrive On Green	0.20	0.20
Sat Flow, veh/h	3554	1571
Grp Volume(v), veh/h	346	198
Grp Sat Flow(s),veh/h/ln	1777	1571
Q Serve(g_s), s	11.2	15.0
Cycle Q Clear(g_c), s	11.2	15.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	718	317
V/C Ratio(X)	0.48	0.62
Avail Cap(c_a), veh/h	864	382
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.88	0.88
Uniform Delay (d), s/veh	45.9	47.4
Incr Delay (d2), s/veh	0.2	0.9
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	6.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	46.0	48.3
LnGrp LOS	D	D
Approach Vol, veh/h	788	
Approach Delay, s/veh	54.8	
Approach LOS	D	
Timer - Assigned Phs		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	192	154	83	1764	91	1406
v/c Ratio	0.55	0.61	1.60	0.57	0.63	0.66
Control Delay	38.8	42.8	372.2	18.5	80.0	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	42.8	372.2	18.5	80.0	34.2
Queue Length 50th (ft)	51	37	~103	303	82	371
Queue Length 95th (ft)	54	65	#244	548	138	425
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	640	393	52	3118	266	2119
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.39	1.60	0.57	0.34	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	42	34	58	46	20	62	19	63	1669	60	84	1252
Future Volume (veh/h)	42	34	58	46	20	62	19	63	1669	60	84	1252
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856		1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	60	49	83	55	24	75		64	1703	61	91	1361
Peak Hour Factor	0.70	0.70	0.70	0.83	0.83	0.83		0.98	0.98	0.98	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3		3	3	3	3	3
Cap, veh/h	82	67	115	79	34	99		89	3229	116	116	3307
Arrive On Green	0.08	0.08	0.08	0.06	0.06	0.06		0.05	0.64	0.64	0.07	0.66
Sat Flow, veh/h	1051	859	1470	1248	545	1565		1767	5020	180	1767	5033
Grp Volume(v), veh/h	103	0	89	79	0	75		64	1145	619	91	913
Grp Sat Flow(s),veh/h/ln	1803	0	1577	1793	0	1565		1767	1689	1823	1767	1689
Q Serve(g_s), s	7.8	0.0	7.7	6.0	0.0	6.6		5.0	25.6	25.7	7.1	17.8
Cycle Q Clear(g_c), s	7.8	0.0	7.7	6.0	0.0	6.6		5.0	25.6	25.7	7.1	17.8
Prop In Lane	0.58		0.93	0.70		1.00		1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	141	0	123	113	0	99		89	2172	1172	116	2219
V/C Ratio(X)	0.73	0.00	0.72	0.70	0.00	0.76		0.72	0.53	0.53	0.79	0.41
Avail Cap(c_a), veh/h	314	0	275	184	0	161		266	2172	1172	269	2219
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	0.0	63.0	64.3	0.0	64.5		65.5	13.5	13.5	64.4	11.3
Incr Delay (d2), s/veh	2.7	0.0	3.0	2.9	0.0	4.5		4.0	0.1	0.2	4.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	3.2	2.9	0.0	2.8		2.4	9.6	10.4	3.4	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.8	0.0	66.0	67.2	0.0	69.0		69.5	13.6	13.7	68.8	11.8
LnGrp LOS	E	A	E	E	A	E		E	B	B	E	B
Approach Vol, veh/h		192			154				1828			1497
Approach Delay, s/veh		65.9			68.1				15.6			15.5
Approach LOS		E			E				B			B

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	97.1		14.4	13.9	95.2		16.5
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 21	* 59		14.4	* 21	58.9		24.4
Max Q Clear Time (g_c+I1), s	7.0	19.8		8.6	9.1	27.7		9.8
Green Ext Time (p_c), s	0.0	8.2		0.2	0.1	11.0		0.6

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	41
Future Volume (veh/h)	41
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1856
Adj Flow Rate, veh/h	45
Peak Hour Factor	0.92
Percent Heavy Veh, %	3
Cap, veh/h	109
Arrive On Green	0.66
Sat Flow, veh/h	166
Grp Volume(v), veh/h	493
Grp Sat Flow(s),veh/h/ln	1823
Q Serve(g_s), s	17.8
Cycle Q Clear(g_c), s	17.8
Prop In Lane	0.09
Lane Grp Cap(c), veh/h	1198
V/C Ratio(X)	0.41
Avail Cap(c_a), veh/h	1198
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	11.3
Incr Delay (d2), s/veh	1.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	7.4
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	12.3
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	97	49	4	4	0
Future Vol, veh/h	0	97	49	4	4	0
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	72	72	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	108	68	6	6	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	149	8	7	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	843	1074	1614	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	806	1072	1612	-	-	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	884	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	6.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1612	-	1072	-	-
HCM Lane V/C Ratio	0.042	-	0.101	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Appendix E

Analysis Worksheets for
Baseline (2019) plus Approved Projects plus Proposed Project Conditions

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	96	1255	271	1148	122	161	347	237	202	588	218
v/c Ratio	0.70	0.63	1.04	0.48	0.15	0.81	0.59	0.51	0.89	1.03	0.58
Control Delay	86.9	33.8	122.8	26.2	4.0	89.3	59.0	10.4	96.5	102.9	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.9	33.8	122.8	26.2	4.0	89.3	59.0	10.4	96.5	102.9	24.9
Queue Length 50th (ft)	87	321	~265	254	0	144	158	0	181	~315	56
Queue Length 95th (ft)	144	372	#424	304	33	#252	213	78	#308	#437	145
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	314	2004	261	2399	800	213	591	462	251	569	376
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.63	1.04	0.48	0.15	0.76	0.59	0.51	0.80	1.03	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	935	194	236	999	106	150	323	220	188	547	203
Future Volume (veh/h)	86	935	194	236	999	106	150	323	220	188	547	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	1039	216	271	1148	122	161	347	237	202	588	218
Peak Hour Factor	0.90	0.90	0.90	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	118	1698	352	264	2478	759	185	546	243	225	549	240
Arrive On Green	0.07	0.41	0.41	0.15	0.49	0.49	0.10	0.15	0.15	0.13	0.15	0.15
Sat Flow, veh/h	1767	4193	870	1767	5066	1552	1781	3554	1585	1781	3554	1558
Grp Volume(v), veh/h	96	837	418	271	1148	122	161	347	237	202	588	218
Grp Sat Flow(s),veh/h/ln	1767	1689	1686	1767	1689	1552	1781	1777	1585	1781	1777	1558
Q Serve(g_s), s	7.5	27.4	27.5	20.9	21.0	6.1	12.5	12.8	20.8	15.6	21.6	19.3
Cycle Q Clear(g_c), s	7.5	27.4	27.5	20.9	21.0	6.1	12.5	12.8	20.8	15.6	21.6	19.3
Prop In Lane	1.00		0.52	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	1368	683	264	2478	759	185	546	243	225	549	240
V/C Ratio(X)	0.82	0.61	0.61	1.03	0.46	0.16	0.87	0.64	0.97	0.90	1.07	0.91
Avail Cap(c_a), veh/h	317	1368	683	264	2478	759	215	546	243	253	549	240
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.5	32.9	33.0	59.6	23.6	19.8	61.8	55.6	59.0	60.3	59.2	58.2
Incr Delay (d2), s/veh	5.1	2.0	4.1	62.6	0.6	0.5	25.2	2.2	47.8	27.7	59.1	34.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	11.6	12.0	13.9	8.6	0.1	7.0	5.9	11.6	8.8	14.2	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.7	35.0	37.0	122.2	24.2	20.3	87.0	57.8	106.8	88.0	118.3	92.3
LnGrp LOS	E	C	D	F	C	C	F	E	F	F	F	F
Approach Vol, veh/h		1351			1541			745			1008	
Approach Delay, s/veh		38.1			41.1			79.7			106.6	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	73.8	22.7	27.2	26.0	62.0	22.8	27.1
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	9.5	23.0	14.5	23.6	22.9	29.5	17.6	22.8
Green Ext Time (p_c), s	0.0	10.1	0.1	0.0	0.0	9.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	60.6
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	65	101	37	33	72	847	21	999
v/c Ratio	0.35	0.40	0.24	0.17	0.38	0.41	0.15	0.57
Control Delay	44.9	14.5	45.3	2.6	44.9	10.7	45.4	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	14.5	45.3	2.6	44.9	10.7	45.4	16.9
Queue Length 50th (ft)	31	0	18	0	35	93	10	187
Queue Length 95th (ft)	74	34	45	0	88	202	39	295
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	1031	937	1035	930	647	3034	647	3014
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.11	0.04	0.04	0.11	0.28	0.03	0.33

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	9	79	19	7	23	62	711	17	19	854	35
Future Volume (veh/h)	41	9	79	19	7	23	62	711	17	19	854	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	12	101	27	10	33	72	827	20	21	960	39
Peak Hour Factor	0.78	0.78	0.78	0.70	0.70	0.70	0.86	0.86	0.86	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	32	153	74	28	89	97	1824	44	43	1678	68
Arrive On Green	0.10	0.10	0.10	0.06	0.06	0.06	0.05	0.51	0.51	0.02	0.48	0.48
Sat Flow, veh/h	1465	332	1570	1317	488	1578	1781	3546	86	1781	3476	141
Grp Volume(v), veh/h	65	0	101	37	0	33	72	414	433	21	491	508
Grp Sat Flow(s),veh/h/ln	1797	0	1570	1805	0	1578	1781	1777	1855	1781	1777	1841
Q Serve(g_s), s	2.3	0.0	4.3	1.4	0.0	1.4	2.7	10.2	10.2	0.8	13.6	13.6
Cycle Q Clear(g_c), s	2.3	0.0	4.3	1.4	0.0	1.4	2.7	10.2	10.2	0.8	13.6	13.6
Prop In Lane	0.82		1.00	0.73		1.00	1.00		0.05	1.00		0.08
Lane Grp Cap(c), veh/h	175	0	153	102	0	89	97	914	954	43	858	889
V/C Ratio(X)	0.37	0.00	0.66	0.36	0.00	0.37	0.75	0.45	0.45	0.49	0.57	0.57
Avail Cap(c_a), veh/h	1043	0	911	1047	0	916	646	1804	1883	646	1804	1869
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	0.0	30.0	31.3	0.0	31.3	32.1	10.6	10.6	33.2	12.7	12.7
Incr Delay (d2), s/veh	0.5	0.0	1.8	0.8	0.0	0.9	4.2	0.7	0.7	3.2	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.6	0.6	0.0	0.5	1.3	3.6	3.8	0.4	5.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	0.0	31.8	32.1	0.0	32.3	36.3	11.3	11.3	36.4	14.0	13.9
LnGrp LOS	C	A	C	C	A	C	D	B	B	D	B	B
Approach Vol, veh/h		166			70			919			1020	
Approach Delay, s/veh		30.9			32.2			13.3			14.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.2	38.6		9.0	7.1	40.8		12.1
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	4.7	15.6		3.4	2.8	12.2		6.3
Green Ext Time (p_c), s	0.0	17.7		0.1	0.0	13.9		0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	8	14	0	9	5	783	7	10	933	2
Future Vol, veh/h	3	0	8	14	0	9	5	783	7	10	933	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	6	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	11	20	0	13	5	860	8	11	1025	2

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1415	-	440	1027	0	0	874	0	0
Stage 1	880	-	-	-	-	-	-	-	-
Stage 2	535	-	-	-	-	-	-	-	-
Critical Hdwy	6.84	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	128	0	565	672	-	-	768	-	-
Stage 1	366	0	-	-	-	-	-	-	-
Stage 2	551	0	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	121	0	562	672	-	-	764	-	-
Mov Cap-2 Maneuver	121	0	-	-	-	-	-	-	-
Stage 1	347	0	-	-	-	-	-	-	-
Stage 2	551	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	30.3	0.1	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	672	-	-	175	764	-	-
HCM Lane V/C Ratio	0.008	-	-	0.188	0.014	-	-
HCM Control Delay (s)	10.4	-	-	30.3	9.8	-	-
HCM Lane LOS	B	-	-	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0	-	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	71	27	23	38	877	15	1045
v/c Ratio	0.35	0.30	0.18	0.12	0.24	0.44	0.10	0.57
Control Delay	42.5	14.3	43.5	1.2	43.3	11.3	42.9	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	14.3	43.5	1.2	43.3	11.3	42.9	14.5
Queue Length 50th (ft)	32	0	13	0	18	99	7	184
Queue Length 95th (ft)	86	42	35	0	53	199	30	284
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	1078	963	1072	983	689	3098	689	3065
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.07	0.03	0.02	0.06	0.28	0.02	0.34

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	9	65	18	1	16	32	731	6	13	883	47
Future Volume (veh/h)	53	9	65	18	1	16	32	731	6	13	883	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	10	71	26	1	23	38	870	7	15	992	53
Peak Hour Factor	0.91	0.91	0.91	0.70	0.70	0.70	0.84	0.84	0.84	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	22	127	78	3	72	68	1934	16	32	1762	94
Arrive On Green	0.08	0.08	0.08	0.05	0.05	0.05	0.04	0.54	0.54	0.02	0.51	0.51
Sat Flow, veh/h	1530	264	1539	1718	66	1585	1781	3613	29	1781	3426	183
Grp Volume(v), veh/h	68	0	71	27	0	23	38	428	449	15	515	530
Grp Sat Flow(s),veh/h/ln	1794	0	1539	1784	0	1585	1781	1777	1865	1781	1777	1832
Q Serve(g_s), s	2.4	0.0	3.0	1.0	0.0	0.9	1.4	9.8	9.8	0.6	13.2	13.2
Cycle Q Clear(g_c), s	2.4	0.0	3.0	1.0	0.0	0.9	1.4	9.8	9.8	0.6	13.2	13.2
Prop In Lane	0.85		1.00	0.96		1.00	1.00		0.02	1.00		0.10
Lane Grp Cap(c), veh/h	148	0	127	81	0	72	68	951	999	32	914	942
V/C Ratio(X)	0.46	0.00	0.56	0.33	0.00	0.32	0.56	0.45	0.45	0.46	0.56	0.56
Avail Cap(c_a), veh/h	1079	0	925	1073	0	953	669	1870	1962	669	1870	1928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	0.0	29.4	30.8	0.0	30.8	31.5	9.5	9.5	32.3	11.0	11.0
Incr Delay (d2), s/veh	0.8	0.0	1.4	0.9	0.0	0.9	2.7	0.7	0.6	3.8	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.1	0.4	0.0	0.4	0.6	3.4	3.6	0.3	4.7	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	0.0	30.8	31.7	0.0	31.7	34.2	10.1	10.1	36.1	12.2	12.1
LnGrp LOS	C	A	C	C	A	C	C	B	B	D	B	B
Approach Vol, veh/h		139			50			915			1060	
Approach Delay, s/veh		30.4			31.7			11.1			12.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	39.5		8.6	5.9	40.9		11.1
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.4	15.2		3.0	2.6	11.8		5.0
Green Ext Time (p_c), s	0.0	19.0		0.1	0.0	14.6		0.2

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	258	1407	170	213	1448	290	171	438	175	279	513	281
v/c Ratio	0.75	0.84	0.21	0.71	0.62	0.36	0.66	0.77	0.44	0.78	0.75	0.64
Control Delay	70.6	36.7	7.2	71.1	29.6	11.2	70.1	61.2	9.6	71.6	56.4	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.6	36.7	7.2	71.1	29.6	11.2	70.1	61.2	9.6	71.6	56.4	25.2
Queue Length 50th (ft)	110	524	14	91	325	50	73	190	0	119	218	87
Queue Length 95th (ft)	140	#754	57	118	418	117	102	207	47	165	254	167
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	392	1676	810	340	2337	809	435	903	526	435	920	530
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.84	0.21	0.63	0.62	0.36	0.39	0.49	0.33	0.64	0.56	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	30	184	1168	141	175	1187	238	144	368	147	254	467
Future Volume (veh/h)	30	184	1168	141	175	1187	238	144	368	147	254	467
Initial Q (Qb), veh		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		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		222	1407	170	213	1448	290	171	438	175	279	513
Peak Hour Factor		0.83	0.83	0.83	0.82	0.82	0.82	0.84	0.84	0.84	0.91	0.91
Percent Heavy Veh, %		3	3	3	3	3	3	2	2	2	2	2
Cap, veh/h		273	1705	759	263	2436	752	223	621	274	330	731
Arrive On Green		0.08	0.48	0.48	0.08	0.48	0.48	0.06	0.17	0.17	0.10	0.21
Sat Flow, veh/h		3428	3526	1571	3428	5066	1565	3456	3554	1566	3456	3554
Grp Volume(v), veh/h		222	1407	170	213	1448	290	171	438	175	279	513
Grp Sat Flow(s),veh/h/ln		1714	1763	1571	1714	1689	1565	1728	1777	1566	1728	1777
Q Serve(g_s), s		8.3	44.6	8.1	8.0	27.0	15.4	6.3	15.1	13.5	10.3	17.4
Cycle Q Clear(g_c), s		8.3	44.6	8.1	8.0	27.0	15.4	6.3	15.1	13.5	10.3	17.4
Prop In Lane		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		273	1705	759	263	2436	752	223	621	274	330	731
V/C Ratio(X)		0.81	0.83	0.22	0.81	0.59	0.39	0.77	0.71	0.64	0.84	0.70
Avail Cap(c_a), veh/h		382	1705	759	330	2436	752	439	908	400	439	918
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	0.82	0.82
Uniform Delay (d), s/veh		58.9	28.8	19.4	59.1	24.5	21.5	59.8	50.5	49.8	57.8	47.9
Incr Delay (d2), s/veh		6.1	4.7	0.7	9.1	1.1	1.5	2.1	0.6	0.9	7.3	0.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		3.8	19.6	3.1	3.8	11.0	6.0	2.8	6.8	5.4	4.9	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		65.0	33.6	20.1	68.2	25.6	23.0	61.9	51.0	50.8	65.1	48.8
LnGrp LOS		E	C	C	E	C	C	E	D	D	E	D
Approach Vol, veh/h			1799			1951			784			1073
Approach Delay, s/veh			36.2			29.9			53.4			56.1
Approach LOS			D			C			D			E

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	67.7	13.9	32.6	15.5	68.1	17.9	28.5
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	14.5	* 44	16.5	* 34	12.5	* 46	16.5	33.2
Max Q Clear Time (g_c+I1), s	10.3	29.0	8.3	24.3	10.0	46.6	12.3	17.1
Green Ext Time (p_c), s	0.1	13.4	0.1	1.2	0.0	0.0	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	40.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	256
Future Volume (veh/h)	256
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	281
Peak Hour Factor	0.91
Percent Heavy Veh, %	2
Cap, veh/h	325
Arrive On Green	0.21
Sat Flow, veh/h	1580
Grp Volume(v), veh/h	281
Grp Sat Flow(s),veh/h/ln	1580
Q Serve(g_s), s	22.3
Cycle Q Clear(g_c), s	22.3
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	325
V/C Ratio(X)	0.86
Avail Cap(c_a), veh/h	408
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.82
Uniform Delay (d), s/veh	49.9
Incr Delay (d2), s/veh	10.5
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	9.8
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	60.3
LnGrp LOS	E
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	130	107	44	1371	55	1426
v/c Ratio	0.49	0.45	0.38	0.43	0.44	0.45
Control Delay	30.6	36.6	57.7	12.0	58.8	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	36.6	57.7	12.0	58.8	11.7
Queue Length 50th (ft)	21	23	30	172	38	178
Queue Length 95th (ft)	41	47	63	242	75	248
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	621	576	192	3159	227	3197
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.19	0.23	0.43	0.24	0.45

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	25	55	39	16	36	38	1153	40	48	1208	32
Future Volume (veh/h)	21	25	55	39	16	36	38	1153	40	48	1208	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	27	32	71	46	19	42	44	1325	46	55	1389	37
Peak Hour Factor	0.78	0.78	0.78	0.85	0.85	0.85	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	3	3	3
Cap, veh/h	54	64	101	72	30	66	80	3244	113	87	3286	88
Arrive On Green	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.65	0.65	0.05	0.65	0.65
Sat Flow, veh/h	837	992	1561	1457	601	1328	1767	5022	174	1767	5073	135
Grp Volume(v), veh/h	59	0	71	57	0	50	44	891	480	55	925	501
Grp Sat Flow(s),veh/h/ln	1829	0	1561	1798	0	1588	1767	1689	1820	1767	1689	1831
Q Serve(g_s), s	3.4	0.0	4.9	3.4	0.0	3.4	2.7	14.0	14.0	3.4	14.6	14.6
Cycle Q Clear(g_c), s	3.4	0.0	4.9	3.4	0.0	3.4	2.7	14.0	14.0	3.4	14.6	14.6
Prop In Lane	0.46		1.00	0.81		0.84	1.00		0.10	1.00		0.07
Lane Grp Cap(c), veh/h	118	0	101	89	0	79	80	2182	1175	87	2187	1186
V/C Ratio(X)	0.50	0.00	0.71	0.64	0.00	0.64	0.55	0.41	0.41	0.64	0.42	0.42
Avail Cap(c_a), veh/h	322	0	275	301	0	266	194	2182	1175	230	2187	1186
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	0.0	50.4	51.3	0.0	51.3	51.4	9.4	9.4	51.3	9.4	9.4
Incr Delay (d2), s/veh	1.2	0.0	3.3	2.8	0.0	3.2	2.2	0.0	0.1	2.9	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	2.0	1.6	0.0	1.4	1.2	4.8	5.2	1.6	5.2	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	0.0	53.8	54.1	0.0	54.5	53.5	9.4	9.4	54.2	10.0	10.5
LnGrp LOS	D	A	D	D	A	D	D	A	A	D	B	B
Approach Vol, veh/h		130			107			1415			1481	
Approach Delay, s/veh		52.5			54.3			10.8			11.8	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.9	76.3		11.1	10.1	76.2		12.7
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 12	* 39		18.4	* 14	36.9		19.4
Max Q Clear Time (g_c+I1), s	4.7	16.6		5.4	5.4	16.0		6.9
Green Ext Time (p_c), s	0.0	7.3		0.3	0.0	6.8		0.3

Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	63	49	3	4	10
Future Vol, veh/h	4	63	49	3	4	10
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	82	70	4	6	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	158	15	21	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	144	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	833	1065	1595	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	795	1063	1593	-	-	-
Mov Cap-2 Maneuver	795	-	-	-	-	-
Stage 1	964	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	6.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1593	-	1042	-	-
HCM Lane V/C Ratio	0.044	-	0.084	-	-
HCM Control Delay (s)	7.4	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	255	1367	197	1202	241	219	644	249	163	431	216
v/c Ratio	0.90	0.65	0.83	0.60	0.33	1.03	0.99	0.53	0.82	0.80	0.53
Control Delay	91.1	33.5	85.9	35.4	8.3	128.2	89.8	14.4	91.0	69.1	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.1	33.5	85.9	35.4	8.3	128.2	89.8	14.4	91.0	69.1	13.6
Queue Length 50th (ft)	227	358	174	322	27	~212	~324	23	147	202	11
Queue Length 95th (ft)	#345	400	#261	354	78	#380	#495	112	219	261	87
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	317	2095	264	2014	735	213	649	469	251	540	408
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.65	0.75	0.60	0.33	1.03	0.99	0.53	0.65	0.80	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	19	205	986	217	169	1034	207	212	625	242	145	384
Future Volume (veh/h)	19	205	986	217	169	1034	207	212	625	242	145	384
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99	1.00		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		233	1120	247	197	1202	241	219	644	249	163	431
Peak Hour Factor		0.88	0.88	0.88	0.86	0.86	0.86	0.97	0.97	0.97	0.89	0.89
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		256	1690	373	221	1976	605	215	672	300	187	539
Arrive On Green		0.14	0.41	0.41	0.12	0.39	0.39	0.12	0.19	0.19	0.10	0.15
Sat Flow, veh/h		1781	4173	920	1781	5106	1564	1781	3554	1585	1781	3554
Grp Volume(v), veh/h		233	914	453	197	1202	241	219	644	249	163	431
Grp Sat Flow(s),veh/h/ln		1781	1702	1689	1781	1702	1564	1781	1777	1585	1781	1777
Q Serve(g_s), s		18.0	30.6	30.6	15.2	26.4	15.6	16.9	25.1	21.2	12.6	16.4
Cycle Q Clear(g_c), s		18.0	30.6	30.6	15.2	26.4	15.6	16.9	25.1	21.2	12.6	16.4
Prop In Lane		1.00		0.54	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		256	1379	684	221	1976	605	215	672	300	187	539
V/C Ratio(X)		0.91	0.66	0.66	0.89	0.61	0.40	1.02	0.96	0.83	0.87	0.80
Avail Cap(c_a), veh/h		319	1379	684	266	1976	605	215	672	300	253	543
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	0.83	0.83	0.83	1.00	1.00
Uniform Delay (d), s/veh		59.1	33.9	33.9	60.4	34.4	31.1	61.5	56.2	54.6	61.8	57.3
Incr Delay (d2), s/veh		23.0	2.5	5.0	24.9	1.4	2.0	60.7	22.1	15.0	17.6	8.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		9.8	13.1	13.5	8.4	11.2	6.3	11.3	13.3	9.7	6.6	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		82.1	36.4	38.9	85.3	35.8	33.0	122.3	78.3	69.6	79.4	65.6
LnGrp LOS		F	D	D	F	D	C	F	E	E	E	E
Approach Vol, veh/h			1600			1640			1112			810
Approach Delay, s/veh			43.8			41.3			85.0			75.9
Approach LOS			D			D			F			E

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	59.5	25.0	26.8	22.5	62.0	19.8	32.1
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	20.0	28.4	18.9	21.0	17.2	32.6	14.6	27.1
Green Ext Time (p_c), s	0.1	10.4	0.0	0.1	0.1	10.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	56.9
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	192
Future Volume (veh/h)	192
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	216
Peak Hour Factor	0.89
Percent Heavy Veh, %	2
Cap, veh/h	237
Arrive On Green	0.15
Sat Flow, veh/h	1563
Grp Volume(v), veh/h	216
Grp Sat Flow(s),veh/h/ln	1563
Q Serve(g_s), s	19.0
Cycle Q Clear(g_c), s	19.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	237
V/C Ratio(X)	0.91
Avail Cap(c_a), veh/h	239
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	58.5
Incr Delay (d2), s/veh	35.3
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	9.9
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	93.7
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	82	94	27	29	104	1022	31	747
v/c Ratio	0.35	0.33	0.19	0.15	0.46	0.54	0.22	0.53
Control Delay	39.6	11.7	47.0	1.7	45.3	15.9	47.1	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	11.7	47.0	1.7	45.3	15.9	47.1	20.1
Queue Length 50th (ft)	37	0	12	0	46	178	14	134
Queue Length 95th (ft)	99	45	46	0	134	360	56	275
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	1022	927	1031	935	632	3045	632	3009
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.10	0.03	0.03	0.16	0.34	0.05	0.25

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	14	85	14	8	24	97	922	29	29	641	54
Future Volume (veh/h)	59	14	85	14	8	24	97	922	29	29	641	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	16	94	17	10	29	104	991	31	31	689	58
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	33	150	55	33	77	134	1768	55	58	1519	128
Arrive On Green	0.10	0.10	0.10	0.05	0.05	0.05	0.08	0.50	0.50	0.03	0.46	0.46
Sat Flow, veh/h	1447	351	1570	1142	672	1585	1781	3517	110	1781	3310	278
Grp Volume(v), veh/h	82	0	94	27	0	29	104	501	521	31	370	377
Grp Sat Flow(s),veh/h/ln	1798	0	1570	1813	0	1585	1781	1777	1850	1781	1777	1812
Q Serve(g_s), s	2.9	0.0	3.8	1.0	0.0	1.2	3.8	12.9	12.9	1.1	9.4	9.4
Cycle Q Clear(g_c), s	2.9	0.0	3.8	1.0	0.0	1.2	3.8	12.9	12.9	1.1	9.4	9.4
Prop In Lane	0.80		1.00	0.63		1.00	1.00		0.06	1.00		0.15
Lane Grp Cap(c), veh/h	172	0	150	88	0	77	134	893	930	58	815	831
V/C Ratio(X)	0.48	0.00	0.63	0.31	0.00	0.38	0.78	0.56	0.56	0.53	0.45	0.45
Avail Cap(c_a), veh/h	1087	0	949	1096	0	958	673	1880	1958	673	1880	1917
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	28.8	30.4	0.0	30.5	30.1	11.4	11.4	31.5	12.2	12.2
Incr Delay (d2), s/veh	0.8	0.0	1.6	0.7	0.0	1.1	3.6	1.1	1.1	2.7	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.4	0.4	0.0	0.5	1.7	4.6	4.8	0.5	3.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	30.4	31.1	0.0	31.6	33.7	12.5	12.5	34.2	13.0	13.0
LnGrp LOS	C	A	C	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		176			56			1126			778	
Approach Delay, s/veh		29.8			31.4			14.4			13.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	35.7		8.3	7.6	38.6		11.7
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	5.8	11.4		3.2	3.1	14.9		5.8
Green Ext Time (p_c), s	0.0	11.7		0.1	0.0	18.4		0.2

Intersection Summary			
HCM 6th Ctrl Delay			15.9
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	8	1038	14	14	719
Future Vol, veh/h	9	8	1038	14	14	719
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	95	95	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	11	1093	15	15	749

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1512	560	0	0	1114	0
Stage 1	1107	-	-	-	-	-
Stage 2	405	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	111	472	-	-	623	-
Stage 1	278	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	106	469	-	-	619	-
Mov Cap-2 Maneuver	208	-	-	-	-	-
Stage 1	265	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	282	619	-
HCM Lane V/C Ratio	-	-	0.086	0.024	-
HCM Control Delay (s)	-	-	19	11	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	69	14	13	52	1103	9	774
v/c Ratio	0.43	0.23	0.08	0.06	0.30	0.55	0.06	0.49
Control Delay	42.9	13.0	43.8	0.4	49.8	15.1	52.3	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	13.0	43.8	0.4	49.8	15.1	52.3	19.1
Queue Length 50th (ft)	47	0	6	0	21	148	4	133
Queue Length 95th (ft)	155	37	26	0	96	496	29	336
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	1109	997	1104	993	690	3054	690	2998
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.07	0.01	0.01	0.08	0.36	0.01	0.26

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	6	58	10	0	9	47	990	14	9	676	67
Future Volume (veh/h)	93	6	58	10	0	9	47	990	14	9	676	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	7	69	14	0	13	52	1088	15	9	704	70
Peak Hour Factor	0.84	0.84	0.84	0.70	0.70	0.70	0.91	0.91	0.91	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	11	157	75	0	66	82	1919	26	20	1623	161
Arrive On Green	0.10	0.10	0.10	0.04	0.00	0.04	0.05	0.53	0.53	0.01	0.50	0.50
Sat Flow, veh/h	1680	106	1575	1781	0	1559	1781	3589	49	1781	3255	323
Grp Volume(v), veh/h	118	0	69	14	0	13	52	539	564	9	384	390
Grp Sat Flow(s),veh/h/ln	1786	0	1575	1781	0	1559	1781	1777	1861	1781	1777	1801
Q Serve(g_s), s	4.3	0.0	2.8	0.5	0.0	0.5	1.9	13.7	13.7	0.3	9.4	9.4
Cycle Q Clear(g_c), s	4.3	0.0	2.8	0.5	0.0	0.5	1.9	13.7	13.7	0.3	9.4	9.4
Prop In Lane	0.94		1.00	1.00		1.00	1.00		0.03	1.00		0.18
Lane Grp Cap(c), veh/h	178	0	157	75	0	66	82	950	995	20	886	898
V/C Ratio(X)	0.66	0.00	0.44	0.19	0.00	0.20	0.63	0.57	0.57	0.44	0.43	0.43
Avail Cap(c_a), veh/h	1052	0	928	1049	0	918	656	1831	1918	656	1831	1856
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	0.0	28.8	31.4	0.0	31.4	31.8	10.5	10.5	33.4	10.9	10.9
Incr Delay (d2), s/veh	1.6	0.0	0.7	0.4	0.0	0.5	3.0	1.1	1.0	5.4	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	1.0	0.2	0.0	0.2	0.9	4.8	5.1	0.2	3.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	0.0	29.5	31.8	0.0	32.0	34.8	11.6	11.6	38.8	11.6	11.6
LnGrp LOS	C	A	C	C	A	C	C	B	B	D	B	B
Approach Vol, veh/h		187			27			1155			783	
Approach Delay, s/veh		30.5			31.9			12.7			11.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	39.2		8.5	5.5	41.6		12.4
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.9	11.4		2.5	2.3	15.7		6.3
Green Ext Time (p_c), s	0.0	12.3		0.0	0.0	20.6		0.3

Intersection Summary		
HCM 6th Ctrl Delay		14.2
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	351	1388	174	221	1334	338	169	532	166	245	347	201
v/c Ratio	0.81	0.82	0.21	0.75	0.60	0.42	0.66	0.82	0.40	0.84	0.50	0.44
Control Delay	69.6	35.7	5.6	74.0	31.1	10.9	70.9	61.2	10.2	83.3	48.4	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.6	35.7	5.6	74.0	31.1	10.9	70.9	61.2	10.2	83.3	48.4	11.1
Queue Length 50th (ft)	150	520	9	94	309	54	72	231	6	106	138	13
Queue Length 95th (ft)	197	#767	56	138	428	155	109	271	63	#171	177	78
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	541	1686	825	334	2210	807	330	876	503	303	860	515
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.82	0.21	0.66	0.60	0.42	0.51	0.61	0.33	0.81	0.40	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	42	288	1305	164	25	189	1294	328	157	495	154	233
Future Volume (veh/h)	42	288	1305	164	25	189	1294	328	157	495	154	233
Initial Q (Qb), veh		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		0.99	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
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		306	1388	174		195	1334	338	169	532	166	245
Peak Hour Factor		0.94	0.94	0.94		0.97	0.97	0.97	0.93	0.93	0.93	0.95
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		358	1753	781		246	2354	729	220	643	285	295
Arrive On Green		0.10	0.49	0.49		0.07	0.46	0.46	0.06	0.18	0.18	0.09
Sat Flow, veh/h		3456	3554	1584		3456	5106	1582	3456	3554	1575	3456
Grp Volume(v), veh/h		306	1388	174		195	1334	338	169	532	166	245
Grp Sat Flow(s),veh/h/ln		1728	1777	1584		1728	1702	1582	1728	1777	1575	1728
Q Serve(g_s), s		11.3	42.2	8.1		7.2	24.8	19.0	6.3	18.7	12.5	9.1
Cycle Q Clear(g_c), s		11.3	42.2	8.1		7.2	24.8	19.0	6.3	18.7	12.5	9.1
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		358	1753	781		246	2354	729	220	643	285	295
V/C Ratio(X)		0.85	0.79	0.22		0.79	0.57	0.46	0.77	0.83	0.58	0.83
Avail Cap(c_a), veh/h		545	1753	781		332	2354	729	332	880	390	306
HCM Platoon Ratio		1.00	1.00	1.00		1.00	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	1.00	1.00	1.00	0.88
Uniform Delay (d), s/veh		57.3	27.4	18.7		59.4	25.6	24.0	59.9	51.3	48.7	58.5
Incr Delay (d2), s/veh		5.3	3.8	0.7		6.3	1.0	2.1	2.5	3.5	0.7	14.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.2	18.5	3.2		3.4	10.2	7.6	2.8	8.7	5.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		62.6	31.1	19.4		65.7	26.6	26.1	62.4	54.8	49.4	72.7
LnGrp LOS		E	C	B		E	C	C	E	D	D	E
Approach Vol, veh/h			1868				1867			867		
Approach Delay, s/veh			35.2				30.6			55.2		
Approach LOS			D				C			E		

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	65.1	13.8	32.1	14.8	69.3	16.6	29.3
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	20.5	* 44	12.5	* 32	12.5	* 52	11.5	32.2
Max Q Clear Time (g_c+I1), s	13.3	26.8	8.3	17.2	9.2	44.2	11.1	20.7
Green Ext Time (p_c), s	0.2	15.0	0.0	0.9	0.0	6.8	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	39.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	330	191
Future Volume (veh/h)	330	191
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	347	201
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	2	2
Cap, veh/h	719	318
Arrive On Green	0.20	0.20
Sat Flow, veh/h	3554	1571
Grp Volume(v), veh/h	347	201
Grp Sat Flow(s),veh/h/ln	1777	1571
Q Serve(g_s), s	11.2	15.2
Cycle Q Clear(g_c), s	11.2	15.2
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	719	318
V/C Ratio(X)	0.48	0.63
Avail Cap(c_a), veh/h	864	382
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.88	0.88
Uniform Delay (d), s/veh	45.8	47.4
Incr Delay (d2), s/veh	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	6.1
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	46.0	48.5
LnGrp LOS	D	D
Approach Vol, veh/h	793	
Approach Delay, s/veh	54.9	
Approach LOS	D	
Timer - Assigned Phs		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	192	163	83	1766	98	1406
v/c Ratio	0.55	0.62	0.61	0.57	0.64	0.45
Control Delay	38.9	42.4	79.9	18.9	80.2	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	42.4	79.9	18.9	80.2	16.0
Queue Length 50th (ft)	51	38	74	309	88	214
Queue Length 95th (ft)	54	66	128	554	146	394
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	639	398	264	3095	266	3142
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.41	0.31	0.57	0.37	0.45

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	42	34	58	48	20	67	19	63	1669	62	90	1252
Future Volume (veh/h)	42	34	58	48	20	67	19	63	1669	62	90	1252
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856		1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	60	49	83	58	24	81		64	1703	63	98	1361
Peak Hour Factor	0.70	0.70	0.70	0.83	0.83	0.83		0.98	0.98	0.98	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3		3	3	3	3	3
Cap, veh/h	82	67	115	85	35	105		89	3186	118	123	3288
Arrive On Green	0.08	0.08	0.08	0.07	0.07	0.07		0.05	0.64	0.64	0.07	0.65
Sat Flow, veh/h	1051	859	1470	1268	525	1565		1767	5013	185	1767	5033
Grp Volume(v), veh/h	103	0	89	82	0	81		64	1147	619	98	913
Grp Sat Flow(s),veh/h/ln	1803	0	1577	1792	0	1565		1767	1689	1821	1767	1689
Q Serve(g_s), s	7.8	0.0	7.7	6.3	0.0	7.1		5.0	26.2	26.3	7.6	18.0
Cycle Q Clear(g_c), s	7.8	0.0	7.7	6.3	0.0	7.1		5.0	26.2	26.3	7.6	18.0
Prop In Lane	0.58		0.93	0.71		1.00		1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	141	0	123	120	0	105		89	2146	1158	123	2206
V/C Ratio(X)	0.73	0.00	0.72	0.68	0.00	0.77		0.72	0.53	0.53	0.80	0.41
Avail Cap(c_a), veh/h	314	0	275	184	0	161		266	2146	1158	269	2206
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	0.0	63.0	63.9	0.0	64.3		65.5	14.1	14.1	64.2	11.5
Incr Delay (d2), s/veh	2.7	0.0	3.0	2.6	0.0	4.8		4.0	0.1	0.3	4.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	3.2	3.0	0.0	3.0		2.4	9.9	10.7	3.6	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.8	0.0	66.0	66.5	0.0	69.1		69.5	14.2	14.3	68.6	12.1
LnGrp LOS	E	A	E	E	A	E		E	B	B	E	B
Approach Vol, veh/h		192			163				1830			1504
Approach Delay, s/veh		65.9			67.8				16.2			15.9
Approach LOS		E			E				B			B

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	96.6		15.0	14.4	94.1		16.5
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 21	* 59		14.4	* 21	58.9		24.4
Max Q Clear Time (g_c+I1), s	7.0	20.0		9.1	9.6	28.3		9.8
Green Ext Time (p_c), s	0.0	8.2		0.2	0.1	11.0		0.6

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	41
Future Volume (veh/h)	41
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1856
Adj Flow Rate, veh/h	45
Peak Hour Factor	0.92
Percent Heavy Veh, %	3
Cap, veh/h	109
Arrive On Green	0.65
Sat Flow, veh/h	166
Grp Volume(v), veh/h	493
Grp Sat Flow(s),veh/h/ln	1823
Q Serve(g_s), s	18.0
Cycle Q Clear(g_c), s	18.0
Prop In Lane	0.09
Lane Grp Cap(c), veh/h	1191
V/C Ratio(X)	0.41
Avail Cap(c_a), veh/h	1191
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	11.5
Incr Delay (d2), s/veh	1.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	7.5
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	12.6
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	97	49	4	4	6
Future Vol, veh/h	8	97	49	4	4	6
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	72	72	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	108	68	6	6	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	154	13	16	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	838	1067	1602	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	800	1065	1600	-	-	-
Mov Cap-2 Maneuver	800	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	884	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	6.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1600	-	1039	-	-
HCM Lane V/C Ratio	0.043	-	0.112	-	-
HCM Control Delay (s)	7.3	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Appendix F

Analysis Worksheets for Cumulative (2036) Conditions

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	109	1358	272	1109	120	256	422	267	207	696	261
v/c Ratio	0.72	0.68	1.04	0.47	0.15	1.20	0.72	0.55	0.90	1.29	0.71
Control Delay	86.7	34.5	123.7	26.7	4.0	177.5	63.6	10.5	97.8	189.5	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.7	34.5	123.7	26.7	4.0	177.5	63.6	10.5	97.8	189.5	34.8
Queue Length 50th (ft)	98	352	~267	247	0	~282	196	0	186	~423	95
Queue Length 95th (ft)	158	406	#450	311	36	#459	258	83	#318	#550	199
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	314	2001	261	2361	790	213	586	485	251	540	367
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.68	1.04	0.47	0.15	1.20	0.72	0.55	0.82	1.29	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	960	290	250	1020	110	230	380	240	190	640	240
Future Volume (veh/h)	100	960	290	250	1020	110	230	380	240	190	640	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	1043	315	272	1109	120	256	422	267	207	696	261
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	131	1557	470	264	2439	747	215	590	263	230	543	238
Arrive On Green	0.07	0.41	0.41	0.15	0.48	0.48	0.12	0.17	0.17	0.13	0.15	0.15
Sat Flow, veh/h	1767	3845	1161	1767	5066	1552	1781	3554	1585	1781	3554	1558
Grp Volume(v), veh/h	109	916	442	272	1109	120	256	422	267	207	696	261
Grp Sat Flow(s),veh/h/ln	1767	1689	1629	1767	1689	1552	1781	1777	1585	1781	1777	1558
Q Serve(g_s), s	8.5	31.0	31.0	20.9	20.3	6.1	16.9	15.7	23.2	16.0	21.4	21.4
Cycle Q Clear(g_c), s	8.5	31.0	31.0	20.9	20.3	6.1	16.9	15.7	23.2	16.0	21.4	21.4
Prop In Lane	1.00		0.71	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	131	1368	660	264	2439	747	215	590	263	230	543	238
V/C Ratio(X)	0.83	0.67	0.67	1.03	0.45	0.16	1.19	0.72	1.01	0.90	1.28	1.10
Avail Cap(c_a), veh/h	317	1368	660	264	2439	747	215	590	263	253	543	238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.9	34.0	34.0	59.6	24.1	20.4	61.5	55.2	58.4	60.1	59.3	59.3
Incr Delay (d2), s/veh	5.0	2.6	5.3	63.7	0.6	0.5	116.8	3.3	53.7	28.8	140.2	86.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	13.2	13.3	14.0	8.3	0.1	14.6	7.3	13.2	9.1	20.2	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.0	36.6	39.4	123.2	24.7	20.9	178.4	58.6	112.1	88.9	199.5	145.7
LnGrp LOS	E	D	D	F	C	C	F	E	F	F	F	F
Approach Vol, veh/h		1467			1501			945			1164	
Approach Delay, s/veh		39.9			42.3			106.1			167.8	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	72.7	25.0	27.0	26.0	62.0	23.2	28.8
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	10.5	22.3	18.9	23.4	22.9	33.0	18.0	25.2
Green Ext Time (p_c), s	0.0	9.7	0.0	0.0	0.0	10.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	82.2
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	100	111	33	33	130	1272	33	1034
v/c Ratio	0.54	0.43	0.29	0.20	0.60	0.57	0.29	0.57
Control Delay	59.4	15.1	58.9	2.6	58.3	13.9	59.2	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	15.1	58.9	2.6	58.3	13.9	59.2	19.2
Queue Length 50th (ft)	66	0	22	0	85	269	22	234
Queue Length 95th (ft)	136	56	61	2	168	418	61	376
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	765	726	769	708	472	2583	472	2533
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.15	0.04	0.05	0.28	0.49	0.07	0.41

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	20	100	20	10	30	120	1140	30	30	860	70
Future Volume (veh/h)	70	20	100	20	10	30	120	1140	30	30	860	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	22	111	22	11	33	130	1239	33	33	956	78
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	40	160	61	30	79	163	1976	53	57	1654	135
Arrive On Green	0.10	0.10	0.10	0.05	0.05	0.05	0.09	0.56	0.56	0.03	0.50	0.50
Sat Flow, veh/h	1404	396	1571	1207	603	1577	1781	3536	94	1781	3320	271
Grp Volume(v), veh/h	100	0	111	33	0	33	130	622	650	33	512	522
Grp Sat Flow(s),veh/h/ln	1800	0	1571	1810	0	1577	1781	1777	1853	1781	1777	1814
Q Serve(g_s), s	4.4	0.0	5.6	1.5	0.0	1.7	5.9	19.6	19.7	1.5	16.7	16.7
Cycle Q Clear(g_c), s	4.4	0.0	5.6	1.5	0.0	1.7	5.9	19.6	19.7	1.5	16.7	16.7
Prop In Lane	0.78		1.00	0.67		1.00	1.00		0.05	1.00		0.15
Lane Grp Cap(c), veh/h	184	0	160	91	0	79	163	993	1036	57	885	904
V/C Ratio(X)	0.54	0.00	0.69	0.36	0.00	0.42	0.80	0.63	0.63	0.58	0.58	0.58
Avail Cap(c_a), veh/h	872	0	761	877	0	764	540	1507	1572	540	1507	1538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	0.0	35.8	37.9	0.0	38.0	36.7	12.4	12.4	39.4	14.6	14.6
Incr Delay (d2), s/veh	0.9	0.0	2.0	0.9	0.0	1.3	3.4	1.3	1.3	3.4	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	2.2	0.7	0.0	0.7	2.7	7.3	7.6	0.7	6.5	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	0.0	37.8	38.8	0.0	39.3	40.1	13.7	13.6	42.7	15.8	15.8
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		211			66			1402			1067	
Approach Delay, s/veh		37.0			39.1			16.1			16.6	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	46.4		9.2	8.1	51.4		13.8
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	7.9	18.7		3.7	3.5	21.7		7.6
Green Ext Time (p_c), s	0.0	18.4		0.1	0.0	24.5		0.3

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	10	1280	20	20	940
Future Vol, veh/h	20	10	1280	20	20	940
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	92	92	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	11	1391	22	22	1044

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1974	713	0	0	1419	0
Stage 1	1408	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	54	374	-	-	476	-
Stage 1	192	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	48	372	-	-	473	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	170	-	-	-	-	-
Stage 2	532	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.7	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	168	473	-
HCM Lane V/C Ratio	-	-	0.198	0.047	-
HCM Control Delay (s)	-	-	31.7	13	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	122	78	11	11	43	1348	22	1067
v/c Ratio	0.65	0.33	0.12	0.08	0.39	0.57	0.21	0.47
Control Delay	63.4	14.9	57.4	1.0	61.7	12.7	57.0	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.4	14.9	57.4	1.0	61.7	12.7	57.0	12.3
Queue Length 50th (ft)	87	0	8	0	31	296	16	212
Queue Length 95th (ft)	153	45	29	0	71	431	45	316
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	703	658	699	667	436	2453	436	2414
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.12	0.02	0.02	0.10	0.55	0.05	0.44

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	10	70	10	0	10	40	1230	10	20	890	70
Future Volume (veh/h)	100	10	70	10	0	10	40	1230	10	20	890	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	11	78	11	0	11	43	1337	11	22	989	78
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	166	16	158	43	0	38	68	2132	18	43	1915	151
Arrive On Green	0.10	0.10	0.10	0.02	0.00	0.02	0.04	0.59	0.59	0.02	0.58	0.58
Sat Flow, veh/h	1628	161	1544	1781	0	1585	1781	3612	30	1781	3330	263
Grp Volume(v), veh/h	122	0	78	11	0	11	43	658	690	22	528	539
Grp Sat Flow(s),veh/h/ln	1789	0	1544	1781	0	1585	1781	1777	1865	1781	1777	1815
Q Serve(g_s), s	5.4	0.0	3.9	0.5	0.0	0.6	1.9	19.7	19.7	1.0	14.7	14.7
Cycle Q Clear(g_c), s	5.4	0.0	3.9	0.5	0.0	0.6	1.9	19.7	19.7	1.0	14.7	14.7
Prop In Lane	0.91		1.00	1.00		1.00	1.00		0.02	1.00		0.14
Lane Grp Cap(c), veh/h	183	0	158	43	0	38	68	1049	1101	43	1022	1044
V/C Ratio(X)	0.67	0.00	0.49	0.26	0.00	0.29	0.63	0.63	0.63	0.51	0.52	0.52
Avail Cap(c_a), veh/h	875	0	755	871	0	775	545	1521	1596	545	1521	1554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	0.0	34.7	39.2	0.0	39.2	38.8	10.9	10.9	39.4	10.5	10.5
Incr Delay (d2), s/veh	1.6	0.0	0.9	1.2	0.0	1.5	3.6	1.3	1.2	3.5	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	1.5	0.2	0.0	0.2	0.9	7.1	7.4	0.5	5.3	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.9	0.0	35.6	40.3	0.0	40.7	42.3	12.2	12.1	42.9	11.3	11.3
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		200			22			1391			1089	
Approach Delay, s/veh		36.4			40.5			13.1			12.0	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	52.3		7.6	6.7	53.6		14.0
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.9	16.7		2.6	3.0	21.7		7.4
Green Ext Time (p_c), s	0.0	19.6		0.0	0.0	26.6		0.3

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	305	1620	163	326	1576	533	167	667	256	391	511	283
v/c Ratio	0.82	1.24	0.25	0.81	0.82	0.69	0.65	0.87	0.53	0.92	0.54	0.52
Control Delay	75.0	151.3	10.7	72.4	41.7	19.7	70.2	61.4	16.0	84.2	42.6	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.0	151.3	10.7	72.4	41.7	19.7	70.2	61.4	16.0	84.2	42.6	18.4
Queue Length 50th (ft)	130	~922	26	138	447	163	71	286	46	169	192	73
Queue Length 95th (ft)	#198	#1061	79	#244	#564	321	107	344	126	#259	246	161
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	393	1304	647	401	1916	774	435	903	537	435	972	554
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.24	0.25	0.81	0.82	0.69	0.38	0.74	0.48	0.90	0.53	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	30	250	1490	150	300	1450	490	150	600	230	360	470
Future Volume (veh/h)	30	250	1490	150	300	1450	490	150	600	230	360	470
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.99	1.00		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		272	1620	163	326	1576	533	167	667	256	391	511
Peak Hour Factor		0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92
Percent Heavy Veh, %		3	3	3	3	3	3	2	2	2	2	2
Cap, veh/h		322	1393	620	330	2012	621	219	756	334	438	982
Arrive On Green		0.09	0.39	0.39	0.10	0.40	0.40	0.06	0.21	0.21	0.13	0.28
Sat Flow, veh/h		3428	3526	1570	3428	5066	1563	3456	3554	1569	3456	3554
Grp Volume(v), veh/h		272	1620	163	326	1576	533	167	667	256	391	511
Grp Sat Flow(s),veh/h/ln		1714	1763	1570	1714	1689	1563	1728	1777	1569	1728	1777
Q Serve(g_s), s		10.2	51.3	9.1	12.3	35.4	40.6	6.2	23.6	19.9	14.5	15.8
Cycle Q Clear(g_c), s		10.2	51.3	9.1	12.3	35.4	40.6	6.2	23.6	19.9	14.5	15.8
Prop In Lane		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		322	1393	620	330	2012	621	219	756	334	438	982
V/C Ratio(X)		0.84	1.16	0.26	0.99	0.78	0.86	0.76	0.88	0.77	0.89	0.52
Avail Cap(c_a), veh/h		382	1393	620	330	2012	621	439	908	401	439	982
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	0.88	0.88
Uniform Delay (d), s/veh		58.0	39.3	26.5	58.7	34.3	35.8	59.9	49.6	48.1	55.9	39.8
Incr Delay (d2), s/veh		12.1	81.8	1.0	46.4	3.1	14.4	2.1	7.9	5.6	17.6	0.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.9	37.6	3.6	7.5	15.0	17.7	2.8	11.3	8.3	7.4	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		70.1	121.1	27.6	105.0	37.4	50.2	62.0	57.5	53.8	73.5	40.0
LnGrp LOS		E	F	C	F	D	D	E	E	D	E	D
Approach Vol, veh/h			2055			2435			1090			1185
Approach Delay, s/veh			106.9			49.3			57.3			51.9
Approach LOS			F			D			E			D

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	56.8	13.7	41.7	18.0	56.5	22.0	33.5
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	14.5	* 44	16.5	* 34	12.5	* 46	16.5	33.2
Max Q Clear Time (g_c+I1), s	12.2	42.6	8.2	22.5	14.3	53.3	16.5	25.6
Green Ext Time (p_c), s	0.1	1.2	0.1	1.3	0.0	0.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	68.5
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	260
Future Volume (veh/h)	260
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	283
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	437
Arrive On Green	0.28
Sat Flow, veh/h	1582
Grp Volume(v), veh/h	283
Grp Sat Flow(s),veh/h/ln	1582
Q Serve(g_s), s	20.5
Cycle Q Clear(g_c), s	20.5
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	437
V/C Ratio(X)	0.65
Avail Cap(c_a), veh/h	437
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.88
Uniform Delay (d), s/veh	41.5
Incr Delay (d2), s/veh	2.3
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	8.3
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	43.8
LnGrp LOS	D
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	166	145	87	2022	87	1521
v/c Ratio	0.56	0.53	0.56	0.67	0.56	0.50
Control Delay	33.5	33.8	60.9	17.8	60.9	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	33.8	60.9	17.8	60.9	14.7
Queue Length 50th (ft)	32	28	60	339	60	217
Queue Length 95th (ft)	65	59	109	497	109	325
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	633	592	198	3016	227	3030
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.24	0.44	0.67	0.38	0.50

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	40	70	50	20	60	80	1790	70	80	1360	40
Future Volume (veh/h)	40	40	70	50	20	60	80	1790	70	80	1360	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	44	44	78	56	22	67	87	1946	76	87	1478	43
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	3	3	3
Cap, veh/h	64	64	110	83	32	98	118	3039	118	118	3068	89
Arrive On Green	0.07	0.07	0.07	0.06	0.06	0.06	0.07	0.61	0.61	0.07	0.61	0.61
Sat Flow, veh/h	912	912	1561	1303	512	1539	1767	4998	195	1767	5059	147
Grp Volume(v), veh/h	88	0	78	78	0	67	87	1314	708	87	987	534
Grp Sat Flow(s),veh/h/ln	1825	0	1561	1805	0	1549	1767	1689	1815	1767	1689	1829
Q Serve(g_s), s	5.2	0.0	5.4	4.6	0.0	4.7	5.3	27.4	27.6	5.3	17.9	17.9
Cycle Q Clear(g_c), s	5.2	0.0	5.4	4.6	0.0	4.7	5.3	27.4	27.6	5.3	17.9	17.9
Prop In Lane	0.50		1.00	0.72		0.99	1.00		0.11	1.00		0.08
Lane Grp Cap(c), veh/h	129	0	110	114	0	98	118	2054	1104	118	2048	1109
V/C Ratio(X)	0.68	0.00	0.71	0.68	0.00	0.69	0.74	0.64	0.64	0.74	0.48	0.48
Avail Cap(c_a), veh/h	322	0	275	302	0	259	194	2054	1104	230	2048	1109
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	0.0	50.0	50.4	0.0	50.4	50.4	13.8	13.8	50.4	12.0	12.0
Incr Delay (d2), s/veh	2.4	0.0	3.1	2.6	0.0	3.2	3.3	0.5	1.0	3.3	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	2.2	2.2	0.0	1.9	2.5	9.9	10.9	2.5	6.6	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	0.0	53.1	53.0	0.0	53.6	53.7	14.3	14.8	53.7	12.8	13.5
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		166			145			2109			1608	
Approach Delay, s/veh		52.7			53.3			16.1			15.3	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.3	71.8		12.6	12.1	72.0		13.4
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 12	* 39		18.4	* 14	36.9		19.4
Max Q Clear Time (g_c+I1), s	7.3	19.9		6.7	7.3	29.6		7.4
Green Ext Time (p_c), s	0.0	7.5		0.4	0.0	5.3		0.4

Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	100	50	10	10	10
Future Vol, veh/h	0	100	50	10	10	10
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	111	56	11	11	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	141	19	23	0	-	0
Stage 1	18	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	852	1059	1592	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	820	1057	1590	-	-	-
Mov Cap-2 Maneuver	820	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	6.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1590	-	1057	-	-
HCM Lane V/C Ratio	0.035	-	0.105	-	-
HCM Control Delay (s)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	294	1446	196	1185	228	326	772	283	167	478	244
v/c Ratio	no cap	0.69	0.83	0.62	0.32	1.53	1.20	0.62	0.83	0.89	0.59
Control Delay		34.0	85.8	37.2	8.1	300.9	151.9	21.9	91.7	76.9	17.7
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	Error	34.0	85.8	37.2	8.1	300.9	151.9	21.9	91.7	76.9	17.7
Queue Length 50th (ft)	~556	383	174	319	24	~414	~455	60	150	227	31
Queue Length 95th (ft)	#743	441	#283	370	85	#609	#628	167	228	#321	120
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	1	2093	264	1914	703	213	644	458	251	540	411
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	294.00	0.69	0.74	0.62	0.32	1.53	1.20	0.62	0.67	0.89	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	20	250	1030	300	180	1090	210	300	710	260	150	430
Future Volume (veh/h)	20	250	1030	300	180	1090	210	300	710	260	150	430
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99	1.00		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		272	1120	326	196	1185	228	326	772	283	167	478
Peak Hour Factor		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		294	1629	474	220	1922	589	215	668	298	190	543
Arrive On Green		0.17	0.42	0.42	0.12	0.38	0.38	0.12	0.19	0.19	0.11	0.15
Sat Flow, veh/h		1781	3911	1138	1781	5106	1564	1781	3554	1585	1781	3554
Grp Volume(v), veh/h		272	975	471	196	1185	228	326	772	283	167	478
Grp Sat Flow(s),veh/h/ln		1781	1702	1645	1781	1702	1564	1781	1777	1585	1781	1777
Q Serve(g_s), s		21.1	32.8	32.8	15.2	26.4	14.9	16.9	26.3	24.7	12.9	18.4
Cycle Q Clear(g_c), s		21.1	32.8	32.8	15.2	26.4	14.9	16.9	26.3	24.7	12.9	18.4
Prop In Lane		1.00		0.69	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		294	1418	685	220	1922	589	215	668	298	190	543
V/C Ratio(X)		0.93	0.69	0.69	0.89	0.62	0.39	1.52	1.16	0.95	0.88	0.88
Avail Cap(c_a), veh/h		319	1418	685	266	1922	589	215	668	298	253	543
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	0.78	0.78	0.78	1.00	1.00
Uniform Delay (d), s/veh		57.6	33.4	33.4	60.4	35.4	31.9	61.5	56.8	56.2	61.6	58.0
Incr Delay (d2), s/veh		29.4	2.7	5.6	24.7	1.5	1.9	250.1	82.9	33.1	18.8	15.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		11.9	14.1	14.1	8.4	11.2	6.0	22.6	19.5	12.6	6.9	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		87.0	36.1	39.0	85.1	36.9	33.8	311.6	139.8	89.3	80.4	73.4
LnGrp LOS		F	D	D	F	D	C	F	F	F	F	E
Approach Vol, veh/h			1718			1609			1381			889
Approach Delay, s/veh			45.0			42.4			170.0			88.3
Approach LOS			D			D			F			F

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	58.0	25.0	27.0	22.4	63.6	20.1	31.9
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	23.1	28.4	18.9	23.4	17.2	34.8	14.9	28.3
Green Ext Time (p_c), s	0.0	10.2	0.0	0.0	0.1	10.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	82.0
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	220
Future Volume (veh/h)	220
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	244
Peak Hour Factor	0.90
Percent Heavy Veh, %	2
Cap, veh/h	239
Arrive On Green	0.15
Sat Flow, veh/h	1563
Grp Volume(v), veh/h	244
Grp Sat Flow(s),veh/h/ln	1563
Q Serve(g_s), s	21.4
Cycle Q Clear(g_c), s	21.4
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	239
V/C Ratio(X)	1.02
Avail Cap(c_a), veh/h	239
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	59.3
Incr Delay (d2), s/veh	63.8
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	12.7
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	123.1
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	144	100	33	33	109	1163	44	900
v/c Ratio	0.56	0.32	0.27	0.19	0.54	0.60	0.34	0.56
Control Delay	52.2	12.1	58.0	2.4	57.8	18.4	58.6	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	12.1	58.0	2.4	57.8	18.4	58.6	20.7
Queue Length 50th (ft)	85	0	20	0	65	253	27	196
Queue Length 95th (ft)	182	51	64	1	154	445	78	354
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	826	772	834	771	511	2611	511	2554
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.13	0.04	0.04	0.21	0.45	0.09	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	20	90	20	10	30	100	1040	30	40	710	100
Future Volume (veh/h)	110	20	90	20	10	30	100	1040	30	40	710	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	22	100	22	11	33	109	1130	33	44	789	111
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	31	179	59	29	77	139	1859	54	70	1519	214
Arrive On Green	0.11	0.11	0.11	0.05	0.05	0.05	0.08	0.53	0.53	0.04	0.49	0.49
Sat Flow, veh/h	1520	274	1572	1207	603	1585	1781	3526	103	1781	3116	438
Grp Volume(v), veh/h	144	0	100	33	0	33	109	569	594	44	450	450
Grp Sat Flow(s),veh/h/ln	1794	0	1572	1810	0	1585	1781	1777	1852	1781	1777	1778
Q Serve(g_s), s	6.0	0.0	4.7	1.4	0.0	1.6	4.7	17.4	17.4	1.9	13.6	13.6
Cycle Q Clear(g_c), s	6.0	0.0	4.7	1.4	0.0	1.6	4.7	17.4	17.4	1.9	13.6	13.6
Prop In Lane	0.85		1.00	0.67		1.00	1.00		0.06	1.00		0.25
Lane Grp Cap(c), veh/h	204	0	179	88	0	77	139	937	976	70	866	866
V/C Ratio(X)	0.71	0.00	0.56	0.37	0.00	0.43	0.78	0.61	0.61	0.63	0.52	0.52
Avail Cap(c_a), veh/h	918	0	804	926	0	811	569	1590	1657	569	1590	1591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	0.0	32.8	36.1	0.0	36.1	35.4	12.9	12.9	37.0	13.8	13.8
Incr Delay (d2), s/veh	1.7	0.0	1.0	1.0	0.0	1.4	3.6	1.3	1.3	3.4	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	1.8	0.6	0.0	0.6	2.1	6.5	6.8	0.9	5.2	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	0.0	33.8	37.0	0.0	37.5	39.0	14.2	14.1	40.4	14.8	14.8
LnGrp LOS	D	A	C	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		244			66			1272			944	
Approach Delay, s/veh		34.6			37.3			16.3			15.9	
Approach LOS		C			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.6	43.4		8.9	8.5	46.5		14.3
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	6.7	15.6		3.6	3.9	19.4		8.0
Green Ext Time (p_c), s	0.0	15.2		0.1	0.0	21.8		0.3

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	10	1130	20	20	780
Future Vol, veh/h	10	10	1130	20	20	780
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	92	92	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	11	1228	22	22	867

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1723	631	0	0	1256	0
Stage 1	1245	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	80	424	-	-	550	-
Stage 1	235	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	73	422	-	-	547	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	215	-	-	-	-	-
Stage 2	590	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	239	547	-
HCM Lane V/C Ratio	-	-	0.093	0.041	-
HCM Control Delay (s)	-	-	21.6	11.9	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	155	67	11	11	54	1261	11	944
v/c Ratio	0.60	0.23	0.07	0.06	0.39	0.57	0.10	0.50
Control Delay	53.1	12.8	49.9	0.6	59.4	15.4	58.7	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	12.8	49.9	0.6	59.4	15.4	58.7	18.8
Queue Length 50th (ft)	85	0	6	0	30	204	6	191
Queue Length 95th (ft)	215	42	28	0	99	606	33	434
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	819	754	814	751	509	2758	509	2701
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.09	0.01	0.01	0.11	0.46	0.02	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	10	60	10	0	10	50	1140	20	10	760	90
Future Volume (veh/h)	130	10	60	10	0	10	50	1140	20	10	760	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	144	11	67	11	0	11	54	1239	22	11	844	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	15	185	66	0	58	78	2018	36	24	1701	201
Arrive On Green	0.12	0.12	0.12	0.04	0.00	0.04	0.04	0.56	0.56	0.01	0.53	0.53
Sat Flow, veh/h	1660	127	1577	1781	0	1555	1781	3572	63	1781	3189	378
Grp Volume(v), veh/h	155	0	67	11	0	11	54	616	645	11	470	474
Grp Sat Flow(s),veh/h/ln	1787	0	1577	1781	0	1555	1781	1777	1859	1781	1777	1790
Q Serve(g_s), s	6.6	0.0	3.1	0.5	0.0	0.5	2.4	18.3	18.3	0.5	13.3	13.3
Cycle Q Clear(g_c), s	6.6	0.0	3.1	0.5	0.0	0.5	2.4	18.3	18.3	0.5	13.3	13.3
Prop In Lane	0.93		1.00	1.00		1.00	1.00		0.03	1.00		0.21
Lane Grp Cap(c), veh/h	209	0	185	66	0	58	78	1004	1050	24	948	954
V/C Ratio(X)	0.74	0.00	0.36	0.17	0.00	0.19	0.69	0.61	0.61	0.46	0.50	0.50
Avail Cap(c_a), veh/h	902	0	796	899	0	785	562	1569	1641	562	1569	1580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	32.3	37.0	0.0	37.0	37.4	11.5	11.5	38.8	11.7	11.7
Incr Delay (d2), s/veh	1.9	0.0	0.4	0.4	0.0	0.6	4.0	1.2	1.2	4.9	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	1.2	0.2	0.0	0.2	1.1	6.6	7.0	0.2	4.9	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	0.0	32.7	37.4	0.0	37.6	41.4	12.7	12.7	43.7	12.6	12.6
LnGrp LOS	D	A	C	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		222			22			1315			955	
Approach Delay, s/veh		34.8			37.5			13.9			12.9	
Approach LOS		C			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	47.6		8.5	5.8	50.1		14.9
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	4.4	15.3		2.5	2.5	20.3		8.6
Green Ext Time (p_c), s	0.0	16.4		0.0	0.0	24.5		0.3

Intersection Summary			
HCM 6th Ctrl Delay			15.6
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	397	1707	185	375	1652	565	178	556	278	411	367	211
v/c Ratio	0.84	1.19	0.26	0.74	0.78	0.71	0.68	0.82	0.66	1.36	0.50	0.46
Control Delay	71.3	128.6	9.1	63.2	37.4	23.3	71.5	60.9	27.6	224.2	47.9	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	128.6	9.1	63.2	37.4	23.3	71.5	60.9	27.6	224.2	47.9	13.3
Queue Length 50th (ft)	169	~922	27	157	440	218	76	239	94	~234	145	26
Queue Length 95th (ft)	223	#1062	78	#292	#607	417	113	284	180	#338	187	95
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	541	1433	711	505	2107	798	330	876	503	303	860	508
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	1.19	0.26	0.74	0.78	0.71	0.54	0.63	0.55	1.36	0.43	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	45	320	1570	170	25	320	1520	520	160	500	250	370
Future Volume (veh/h)	45	320	1570	170	25	320	1520	520	160	500	250	370
Initial Q (Qb), veh		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		0.99	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
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		348	1707	185		348	1652	565	178	556	278	411
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.90	0.90	0.90	0.90
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		400	1576	702		332	2164	670	229	721	320	306
Arrive On Green		0.12	0.44	0.44		0.10	0.42	0.42	0.07	0.20	0.20	0.09
Sat Flow, veh/h		3456	3554	1584		3456	5106	1582	3456	3554	1576	3456
Grp Volume(v), veh/h		348	1707	185		348	1652	565	178	556	278	411
Grp Sat Flow(s),veh/h/ln		1728	1777	1584		1728	1702	1582	1728	1777	1576	1728
Q Serve(g_s), s		12.9	57.6	9.6		12.5	35.8	41.6	6.6	19.2	22.2	11.5
Cycle Q Clear(g_c), s		12.9	57.6	9.6		12.5	35.8	41.6	6.6	19.2	22.2	11.5
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		400	1576	702		332	2164	670	229	721	320	306
V/C Ratio(X)		0.87	1.08	0.26		1.05	0.76	0.84	0.78	0.77	0.87	1.34
Avail Cap(c_a), veh/h		545	1576	702		332	2164	670	332	880	390	306
HCM Platoon Ratio		1.00	1.00	1.00		1.00	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	1.00	1.00	1.00	0.87
Uniform Delay (d), s/veh		56.5	36.2	22.8		58.8	31.9	33.6	59.7	49.0	50.2	59.2
Incr Delay (d2), s/veh		8.8	48.9	0.9		62.3	2.6	12.3	3.8	2.7	14.3	172.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		6.1	35.1	3.8		8.3	15.1	18.0	3.0	8.8	10.0	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		65.4	85.1	23.7		121.0	34.5	45.8	63.6	51.6	64.4	232.2
LnGrp LOS		E	F	C		F	C	D	E	D	E	F
Approach Vol, veh/h			2240				2565			1012		
Approach Delay, s/veh			77.0				48.7			57.2		
Approach LOS			E				D			E		

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	60.3	14.1	35.0	18.0	62.8	17.0	32.2
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	20.5	* 44	12.5	* 32	12.5	* 52	11.5	32.2
Max Q Clear Time (g_c+I1), s	14.9	43.6	8.6	17.6	14.5	59.6	13.5	24.2
Green Ext Time (p_c), s	0.2	0.2	0.0	0.9	0.0	0.0	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	70.0
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	330	190
Future Volume (veh/h)	330	190
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	367	211
Peak Hour Factor	0.90	0.90
Percent Heavy Veh, %	2	2
Cap, veh/h	799	354
Arrive On Green	0.22	0.22
Sat Flow, veh/h	3554	1572
Grp Volume(v), veh/h	367	211
Grp Sat Flow(s),veh/h/ln	1777	1572
Q Serve(g_s), s	11.6	15.6
Cycle Q Clear(g_c), s	11.6	15.6
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	799	354
V/C Ratio(X)	0.46	0.60
Avail Cap(c_a), veh/h	864	382
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.87	0.87
Uniform Delay (d), s/veh	43.5	45.1
Incr Delay (d2), s/veh	0.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	6.2
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	43.7	46.2
LnGrp LOS	D	D
Approach Vol, veh/h	989	
Approach Delay, s/veh	122.6	
Approach LOS	F	
Timer - Assigned Phs		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	167	156	109	1978	98	1478
v/c Ratio	0.50	0.61	0.67	0.64	0.64	0.48
Control Delay	40.0	42.2	80.2	20.2	80.2	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	42.2	80.2	20.2	80.2	17.4
Queue Length 50th (ft)	47	36	98	364	88	237
Queue Length 95th (ft)	74	73	157	660	146	437
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	630	395	264	3110	266	3083
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.39	0.41	0.64	0.37	0.48

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	50	40	60	50	20	70	20	80	1760	60	90	1310
Future Volume (veh/h)	50	40	60	50	20	70	20	80	1760	60	90	1310
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856		1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	56	44	67	56	22	78		87	1913	65	98	1424
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3		3	3	3	3	3
Cap, veh/h	80	63	97	83	33	102		112	3246	110	123	3253
Arrive On Green	0.07	0.07	0.07	0.06	0.06	0.06		0.06	0.65	0.65	0.07	0.65
Sat Flow, veh/h	1131	891	1372	1286	505	1565		1767	5031	171	1767	5005
Grp Volume(v), veh/h	89	0	78	78	0	78		87	1283	695	98	961
Grp Sat Flow(s),veh/h/ln	1799	0	1595	1791	0	1565		1767	1689	1824	1767	1689
Q Serve(g_s), s	6.8	0.0	6.7	6.0	0.0	6.9		6.8	30.4	30.6	7.6	19.5
Cycle Q Clear(g_c), s	6.8	0.0	6.7	6.0	0.0	6.9		6.8	30.4	30.6	7.6	19.5
Prop In Lane	0.63		0.86	0.72		1.00		1.00		0.09	1.00	
Lane Grp Cap(c), veh/h	127	0	112	116	0	102		112	2179	1177	123	2195
V/C Ratio(X)	0.70	0.00	0.69	0.67	0.00	0.77		0.78	0.59	0.59	0.80	0.44
Avail Cap(c_a), veh/h	314	0	278	184	0	161		266	2179	1177	269	2195
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.6	0.0	63.6	64.0	0.0	64.4		64.6	14.2	14.2	64.2	12.0
Incr Delay (d2), s/veh	2.6	0.0	2.8	2.5	0.0	4.5		4.3	0.3	0.5	4.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	2.8	2.8	0.0	2.9		3.2	11.4	12.4	3.6	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	0.0	66.4	66.5	0.0	68.9		68.9	14.5	14.8	68.6	12.6
LnGrp LOS	E	A	E	E	A	E		E	B	B	E	B
Approach Vol, veh/h		167			156				2065			1576
Approach Delay, s/veh		66.4			67.7				16.9			16.3
Approach LOS		E			E				B			B

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.8	96.1		14.7	14.4	95.4		15.5
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 21	* 59		14.4	* 21	58.9		24.4
Max Q Clear Time (g_c+I1), s	8.8	21.5		8.9	9.6	32.6		8.8
Green Ext Time (p_c), s	0.1	8.8		0.2	0.1	12.2		0.5

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lanes, Configurations	
Traffic Volume (veh/h)	50
Future Volume (veh/h)	50
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1856
Adj Flow Rate, veh/h	54
Peak Hour Factor	0.92
Percent Heavy Veh, %	3
Cap, veh/h	123
Arrive On Green	0.65
Sat Flow, veh/h	190
Grp Volume(v), veh/h	517
Grp Sat Flow(s),veh/h/ln	1818
Q Serve(g_s), s	19.5
Cycle Q Clear(g_c), s	19.5
Prop In Lane	0.10
Lane Grp Cap(c), veh/h	1182
V/C Ratio(X)	0.44
Avail Cap(c_a), veh/h	1182
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	12.0
Incr Delay (d2), s/veh	1.2
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	8.1
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	13.2
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	100	50	10	10	0
Future Vol, veh/h	0	100	50	10	10	0
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	111	56	11	11	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	135	13	12	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	859	1067	1607	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	827	1065	1605	-	-	-
Mov Cap-2 Maneuver	827	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	6.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1605	-	1065	-	-
HCM Lane V/C Ratio	0.035	-	0.104	-	-
HCM Control Delay (s)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Appendix G

Analysis Worksheets for
Cumulative (2036) plus Proposed Project Conditions

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	109	1359	272	1109	120	258	422	267	207	696	261
v/c Ratio	0.72	0.68	1.04	0.47	0.15	1.21	0.72	0.55	0.90	1.29	0.71
Control Delay	86.7	34.5	123.7	26.7	4.0	180.7	63.6	10.5	97.8	189.5	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.7	34.5	123.7	26.7	4.0	180.7	63.6	10.5	97.8	189.5	34.8
Queue Length 50th (ft)	98	352	~267	247	0	~286	196	0	186	~423	95
Queue Length 95th (ft)	158	406	#450	311	36	#465	258	83	#318	#550	199
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	314	2001	261	2361	790	213	586	485	251	540	367
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.68	1.04	0.47	0.15	1.21	0.72	0.55	0.82	1.29	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	960	291	250	1020	110	232	380	240	190	640	240
Future Volume (veh/h)	100	960	291	250	1020	110	232	380	240	190	640	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	1043	316	272	1109	120	258	422	267	207	696	261
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	131	1556	471	264	2439	747	215	590	263	230	543	238
Arrive On Green	0.07	0.41	0.41	0.15	0.48	0.48	0.12	0.17	0.17	0.13	0.15	0.15
Sat Flow, veh/h	1767	3842	1164	1767	5066	1552	1781	3554	1585	1781	3554	1558
Grp Volume(v), veh/h	109	917	442	272	1109	120	258	422	267	207	696	261
Grp Sat Flow(s),veh/h/ln	1767	1689	1629	1767	1689	1552	1781	1777	1585	1781	1777	1558
Q Serve(g_s), s	8.5	31.0	31.1	20.9	20.3	6.1	16.9	15.7	23.2	16.0	21.4	21.4
Cycle Q Clear(g_c), s	8.5	31.0	31.1	20.9	20.3	6.1	16.9	15.7	23.2	16.0	21.4	21.4
Prop In Lane	1.00		0.71	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	131	1368	660	264	2439	747	215	590	263	230	543	238
V/C Ratio(X)	0.83	0.67	0.67	1.03	0.45	0.16	1.20	0.72	1.01	0.90	1.28	1.10
Avail Cap(c_a), veh/h	317	1368	660	264	2439	747	215	590	263	253	543	238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.9	34.0	34.0	59.6	24.1	20.4	61.5	55.2	58.4	60.1	59.3	59.3
Incr Delay (d2), s/veh	5.0	2.6	5.4	63.7	0.6	0.5	120.3	3.3	53.7	28.8	140.2	86.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	13.2	13.3	14.0	8.3	0.1	14.8	7.3	13.2	9.1	20.2	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.0	36.6	39.4	123.2	24.7	20.9	181.9	58.6	112.1	88.9	199.5	145.7
LnGrp LOS	E	D	D	F	C	C	F	E	F	F	F	F
Approach Vol, veh/h		1468			1501			947			1164	
Approach Delay, s/veh		39.9			42.3			107.2			167.8	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	72.7	25.0	27.0	26.0	62.0	23.2	28.8
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	10.5	22.3	18.9	23.4	22.9	33.1	18.0	25.2
Green Ext Time (p_c), s	0.0	9.7	0.0	0.0	0.0	10.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	82.4
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	100	111	33	33	130	1275	33	1036
v/c Ratio	0.55	0.43	0.29	0.20	0.61	0.57	0.29	0.57
Control Delay	59.8	15.1	59.2	2.6	58.8	13.8	59.4	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	15.1	59.2	2.6	58.8	13.8	59.4	19.0
Queue Length 50th (ft)	66	0	22	0	86	270	22	235
Queue Length 95th (ft)	136	56	61	2	168	419	61	377
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	757	720	762	702	468	2571	468	2521
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.15	0.04	0.05	0.28	0.50	0.07	0.41

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	20	100	20	10	30	120	1143	30	30	862	70
Future Volume (veh/h)	70	20	100	20	10	30	120	1143	30	30	862	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	22	111	22	11	33	130	1242	33	33	958	78
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	40	160	61	30	79	163	1978	53	57	1657	135
Arrive On Green	0.10	0.10	0.10	0.05	0.05	0.05	0.09	0.56	0.56	0.03	0.50	0.50
Sat Flow, veh/h	1404	396	1571	1207	603	1577	1781	3536	94	1781	3320	270
Grp Volume(v), veh/h	100	0	111	33	0	33	130	624	651	33	513	523
Grp Sat Flow(s),veh/h/ln	1800	0	1571	1810	0	1577	1781	1777	1853	1781	1777	1814
Q Serve(g_s), s	4.4	0.0	5.6	1.5	0.0	1.7	5.9	19.7	19.7	1.5	16.8	16.8
Cycle Q Clear(g_c), s	4.4	0.0	5.6	1.5	0.0	1.7	5.9	19.7	19.7	1.5	16.8	16.8
Prop In Lane	0.78		1.00	0.67		1.00	1.00		0.05	1.00		0.15
Lane Grp Cap(c), veh/h	183	0	160	91	0	79	163	994	1037	57	887	905
V/C Ratio(X)	0.55	0.00	0.69	0.36	0.00	0.42	0.80	0.63	0.63	0.58	0.58	0.58
Avail Cap(c_a), veh/h	871	0	760	876	0	763	539	1504	1569	539	1504	1535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	0.0	35.9	38.0	0.0	38.1	36.8	12.4	12.4	39.5	14.6	14.6
Incr Delay (d2), s/veh	0.9	0.0	2.0	0.9	0.0	1.3	3.4	1.3	1.3	3.4	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	2.2	0.7	0.0	0.7	2.7	7.3	7.6	0.7	6.5	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	0.0	37.9	38.9	0.0	39.4	40.2	13.7	13.7	42.8	15.8	15.8
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		211			66			1405			1069	
Approach Delay, s/veh		37.1			39.1			16.1			16.6	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.1	46.6		9.2	8.1	51.6		13.8
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	7.9	18.8		3.7	3.5	21.7		7.6
Green Ext Time (p_c), s	0.0	18.4		0.1	0.0	24.5		0.3

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	10	1280	20	20	940
Future Vol, veh/h	20	10	1280	20	20	940
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	92	92	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	11	1391	22	22	1044

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1974	713	0	0	1419	0
Stage 1	1408	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	54	374	-	-	476	-
Stage 1	192	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	48	372	-	-	473	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	170	-	-	-	-	-
Stage 2	532	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.7	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	168	473	-
HCM Lane V/C Ratio	-	-	0.198	0.047	-
HCM Control Delay (s)	-	-	31.7	13	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	122	78	11	11	43	1350	22	1071
v/c Ratio	0.65	0.33	0.12	0.08	0.39	0.57	0.21	0.48
Control Delay	63.5	14.9	57.4	1.0	61.7	12.8	57.0	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.5	14.9	57.4	1.0	61.7	12.8	57.0	12.3
Queue Length 50th (ft)	87	0	8	0	31	297	16	213
Queue Length 95th (ft)	153	45	29	0	71	432	45	318
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	702	658	698	667	436	2451	436	2412
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.12	0.02	0.02	0.10	0.55	0.05	0.44

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	10	70	10	0	10	40	1232	10	20	894	70
Future Volume (veh/h)	100	10	70	10	0	10	40	1232	10	20	894	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	11	78	11	0	11	43	1339	11	22	993	78
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	166	16	158	43	0	38	68	2134	18	43	1917	151
Arrive On Green	0.10	0.10	0.10	0.02	0.00	0.02	0.04	0.59	0.59	0.02	0.58	0.58
Sat Flow, veh/h	1628	161	1544	1781	0	1585	1781	3612	30	1781	3331	262
Grp Volume(v), veh/h	122	0	78	11	0	11	43	659	691	22	530	541
Grp Sat Flow(s),veh/h/ln	1789	0	1544	1781	0	1585	1781	1777	1865	1781	1777	1816
Q Serve(g_s), s	5.4	0.0	3.9	0.5	0.0	0.6	1.9	19.7	19.7	1.0	14.8	14.8
Cycle Q Clear(g_c), s	5.4	0.0	3.9	0.5	0.0	0.6	1.9	19.7	19.7	1.0	14.8	14.8
Prop In Lane	0.91		1.00	1.00		1.00	1.00		0.02	1.00		0.14
Lane Grp Cap(c), veh/h	183	0	158	43	0	38	68	1050	1102	43	1023	1045
V/C Ratio(X)	0.67	0.00	0.49	0.26	0.00	0.29	0.63	0.63	0.63	0.51	0.52	0.52
Avail Cap(c_a), veh/h	874	0	754	870	0	774	544	1519	1594	544	1519	1552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	0.0	34.8	39.2	0.0	39.3	38.8	10.9	10.9	39.5	10.5	10.5
Incr Delay (d2), s/veh	1.6	0.0	0.9	1.2	0.0	1.5	3.6	1.3	1.2	3.5	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	1.5	0.2	0.0	0.2	0.9	7.1	7.4	0.5	5.3	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	0.0	35.6	40.4	0.0	40.8	42.4	12.2	12.1	43.0	11.3	11.3
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		200			22			1393			1093	
Approach Delay, s/veh		36.5			40.6			13.1			12.0	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	52.4		7.6	6.7	53.7		14.0
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	3.9	16.8		2.6	3.0	21.7		7.4
Green Ext Time (p_c), s	0.0	19.7		0.0	0.0	26.6		0.3

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	307	1620	163	326	1576	533	167	667	256	392	512	286
v/c Ratio	0.83	1.24	0.25	0.81	0.82	0.69	0.65	0.87	0.53	0.92	0.54	0.52
Control Delay	75.0	151.5	10.7	72.4	41.8	19.8	70.2	61.4	16.0	84.4	42.6	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.0	151.5	10.7	72.4	41.8	19.8	70.2	61.4	16.0	84.4	42.6	18.7
Queue Length 50th (ft)	130	~922	26	138	448	163	71	286	46	170	192	76
Queue Length 95th (ft)	#201	#1061	79	#244	#564	321	107	344	126	#260	246	164
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	394	1304	647	401	1913	774	435	903	537	435	972	554
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.24	0.25	0.81	0.82	0.69	0.38	0.74	0.48	0.90	0.53	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	30	252	1490	150	300	1450	490	150	600	230	361	471
Future Volume (veh/h)	30	252	1490	150	300	1450	490	150	600	230	361	471
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.99	1.00		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		274	1620	163	326	1576	533	167	667	256	392	512
Peak Hour Factor		0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92
Percent Heavy Veh, %		3	3	3	3	3	3	2	2	2	2	2
Cap, veh/h		324	1392	620	330	2009	620	219	756	334	439	982
Arrive On Green		0.09	0.39	0.39	0.10	0.40	0.40	0.06	0.21	0.21	0.13	0.28
Sat Flow, veh/h		3428	3526	1570	3428	5066	1563	3456	3554	1569	3456	3554
Grp Volume(v), veh/h		274	1620	163	326	1576	533	167	667	256	392	512
Grp Sat Flow(s),veh/h/ln		1714	1763	1570	1714	1689	1563	1728	1777	1569	1728	1777
Q Serve(g_s), s		10.2	51.3	9.1	12.3	35.4	40.6	6.2	23.6	19.9	14.5	15.8
Cycle Q Clear(g_c), s		10.2	51.3	9.1	12.3	35.4	40.6	6.2	23.6	19.9	14.5	15.8
Prop In Lane		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		324	1392	620	330	2009	620	219	756	334	439	982
V/C Ratio(X)		0.85	1.16	0.26	0.99	0.78	0.86	0.76	0.88	0.77	0.89	0.52
Avail Cap(c_a), veh/h		382	1392	620	330	2009	620	439	908	401	439	982
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	0.88	0.88
Uniform Delay (d), s/veh		57.9	39.3	26.6	58.7	34.4	35.9	59.9	49.6	48.1	55.9	39.8
Incr Delay (d2), s/veh		12.4	81.9	1.0	46.4	3.2	14.5	2.1	7.9	5.6	17.8	0.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.0	37.7	3.6	7.5	15.0	17.8	2.8	11.3	8.3	7.4	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		70.3	121.3	27.6	105.0	37.5	50.4	62.0	57.5	53.8	73.7	40.0
LnGrp LOS		E	F	C	F	D	D	E	E	D	E	D
Approach Vol, veh/h			2057			2435			1090			1190
Approach Delay, s/veh			107.1			49.4			57.3			52.0
Approach LOS			F			D			E			D

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	56.7	13.7	41.7	18.0	56.5	22.0	33.5
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	14.5	* 44	16.5	* 34	12.5	* 46	16.5	33.2
Max Q Clear Time (g_c+I1), s	12.2	42.6	8.2	22.8	14.3	53.3	16.5	25.6
Green Ext Time (p_c), s	0.1	1.2	0.1	1.3	0.0	0.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	68.6
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	263
Future Volume (veh/h)	263
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	286
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	437
Arrive On Green	0.28
Sat Flow, veh/h	1582
Grp Volume(v), veh/h	286
Grp Sat Flow(s),veh/h/ln	1582
Q Serve(g_s), s	20.8
Cycle Q Clear(g_c), s	20.8
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	437
V/C Ratio(X)	0.65
Avail Cap(c_a), veh/h	437
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.88
Uniform Delay (d), s/veh	41.5
Incr Delay (d2), s/veh	2.5
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	8.4
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	44.0
LnGrp LOS	D
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	166	152	87	2023	90	1521
v/c Ratio	0.56	0.54	0.56	0.67	0.57	0.50
Control Delay	33.5	33.5	60.9	18.1	61.0	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	33.5	60.9	18.1	61.0	14.7
Queue Length 50th (ft)	32	28	60	342	62	218
Queue Length 95th (ft)	65	61	109	501	110	325
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	633	595	198	3006	227	3028
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.26	0.44	0.67	0.40	0.50

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	40	70	52	20	65	80	1790	71	83	1360	40
Future Volume (veh/h)	40	40	70	52	20	65	80	1790	71	83	1360	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	44	44	78	58	22	72	87	1946	77	90	1478	43
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	3	3	3
Cap, veh/h	64	64	110	87	33	103	118	3013	119	121	3052	89
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.60	0.60	0.07	0.60	0.60
Sat Flow, veh/h	912	912	1561	1309	496	1549	1767	4995	197	1767	5059	147
Grp Volume(v), veh/h	88	0	78	80	0	72	87	1314	709	90	987	534
Grp Sat Flow(s),veh/h/ln	1825	0	1561	1805	0	1549	1767	1689	1815	1767	1689	1829
Q Serve(g_s), s	5.2	0.0	5.4	4.8	0.0	5.0	5.3	27.8	28.0	5.5	18.0	18.0
Cycle Q Clear(g_c), s	5.2	0.0	5.4	4.8	0.0	5.0	5.3	27.8	28.0	5.5	18.0	18.0
Prop In Lane	0.50		1.00	0.73		1.00	1.00		0.11	1.00		0.08
Lane Grp Cap(c), veh/h	129	0	110	120	0	103	118	2037	1095	121	2037	1103
V/C Ratio(X)	0.68	0.00	0.71	0.67	0.00	0.70	0.74	0.65	0.65	0.74	0.48	0.48
Avail Cap(c_a), veh/h	322	0	275	302	0	259	194	2037	1095	230	2037	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	0.0	50.0	50.1	0.0	50.3	50.4	14.2	14.2	50.3	12.2	12.2
Incr Delay (d2), s/veh	2.4	0.0	3.1	2.4	0.0	3.2	3.3	0.6	1.1	3.3	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	2.2	2.2	0.0	2.0	2.5	10.1	11.1	2.5	6.7	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	0.0	53.1	52.5	0.0	53.4	53.7	14.7	15.3	53.6	13.1	13.8
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		166			152			2110			1611	
Approach Delay, s/veh		52.7			52.9			16.5			15.6	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.3	71.5		12.9	12.2	71.5		13.4
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 12	* 39		18.4	* 14	36.9		19.4
Max Q Clear Time (g_c+I1), s	7.3	20.0		7.0	7.5	30.0		7.4
Green Ext Time (p_c), s	0.0	7.5		0.4	0.0	5.1		0.4

Intersection Summary		
HCM 6th Ctrl Delay		19.0
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	100	50	10	10	17
Future Vol, veh/h	4	100	50	10	10	17
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	111	56	11	11	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	145	23	31	0	-	0
Stage 1	22	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	847	1054	1582	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	815	1052	1580	-	-	-
Mov Cap-2 Maneuver	815	-	-	-	-	-
Stage 1	964	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	6.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1580	-	1040	-	-
HCM Lane V/C Ratio	0.035	-	0.111	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	294	1448	196	1185	228	328	772	283	167	478	244
v/c Ratio	5.55	0.69	0.83	0.62	0.32	1.54	1.20	0.62	0.83	0.89	0.59
Control Delay	2097.6	34.1	85.8	37.2	8.1	304.6	151.9	21.9	91.7	76.9	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2097.6	34.1	85.8	37.2	8.1	304.6	151.9	21.9	91.7	76.9	17.7
Queue Length 50th (ft)	~505	383	174	319	24	~418	~455	60	150	227	31
Queue Length 95th (ft)	#658	442	#283	370	85	#613	#628	167	228	#321	120
Internal Link Dist (ft)		595		540			2183			523	
Turn Bay Length (ft)	230		180		190	140		220	150		150
Base Capacity (vph)	53	2093	264	1914	703	213	644	458	251	540	411
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	5.55	0.69	0.74	0.62	0.32	1.54	1.20	0.62	0.67	0.89	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	20	250	1030	302	180	1090	210	302	710	260	150	430
Future Volume (veh/h)	20	250	1030	302	180	1090	210	302	710	260	150	430
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99	1.00		0.99	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
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		272	1120	328	196	1185	228	328	772	283	167	478
Peak Hour Factor		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		294	1626	476	220	1922	589	215	668	298	190	543
Arrive On Green		0.17	0.42	0.42	0.12	0.38	0.38	0.12	0.19	0.19	0.11	0.15
Sat Flow, veh/h		1781	3905	1144	1781	5106	1564	1781	3554	1585	1781	3554
Grp Volume(v), veh/h		272	976	472	196	1185	228	328	772	283	167	478
Grp Sat Flow(s),veh/h/ln		1781	1702	1644	1781	1702	1564	1781	1777	1585	1781	1777
Q Serve(g_s), s		21.1	32.9	32.9	15.2	26.4	14.9	16.9	26.3	24.7	12.9	18.4
Cycle Q Clear(g_c), s		21.1	32.9	32.9	15.2	26.4	14.9	16.9	26.3	24.7	12.9	18.4
Prop In Lane		1.00		0.70	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		294	1418	685	220	1922	589	215	668	298	190	543
V/C Ratio(X)		0.93	0.69	0.69	0.89	0.62	0.39	1.53	1.16	0.95	0.88	0.88
Avail Cap(c_a), veh/h		319	1418	685	266	1922	589	215	668	298	253	543
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	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	0.78	0.78	0.78	1.00	1.00
Uniform Delay (d), s/veh		57.6	33.4	33.4	60.4	35.4	31.9	61.5	56.8	56.2	61.6	58.0
Incr Delay (d2), s/veh		29.4	2.8	5.6	24.7	1.5	1.9	254.1	82.9	33.1	18.8	15.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		11.9	14.1	14.2	8.4	11.2	6.0	22.8	19.5	12.6	6.9	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		87.0	36.2	39.0	85.1	36.9	33.8	315.6	139.8	89.3	80.4	73.4
LnGrp LOS		F	D	D	F	D	C	F	F	F	F	E
Approach Vol, veh/h			1720			1609			1383			889
Approach Delay, s/veh			45.0			42.4			171.1			88.3
Approach LOS			D			D			F			F

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	58.0	25.0	27.0	22.4	63.6	20.1	31.9
Change Period (Y+Rc), s	* 4.9	5.3	* 8.1	* 5.6	* 5.1	5.3	* 5.1	* 5.6
Max Green Setting (Gmax), s	* 25	52.7	* 17	* 21	* 21	56.7	* 20	* 22
Max Q Clear Time (g_c+I1), s	23.1	28.4	18.9	23.4	17.2	34.9	14.9	28.3
Green Ext Time (p_c), s	0.0	10.2	0.0	0.0	0.1	10.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	82.3
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	220
Future Volume (veh/h)	220
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	244
Peak Hour Factor	0.90
Percent Heavy Veh, %	2
Cap, veh/h	239
Arrive On Green	0.15
Sat Flow, veh/h	1563
Grp Volume(v), veh/h	244
Grp Sat Flow(s),veh/h/ln	1563
Q Serve(g_s), s	21.4
Cycle Q Clear(g_c), s	21.4
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	239
V/C Ratio(X)	1.02
Avail Cap(c_a), veh/h	239
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	59.3
Incr Delay (d2), s/veh	63.8
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	12.7
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	123.1
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	144	100	33	33	109	1167	44	903
v/c Ratio	0.56	0.32	0.27	0.19	0.54	0.60	0.34	0.56
Control Delay	52.4	12.2	58.2	2.4	57.8	18.4	58.8	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	12.2	58.2	2.4	57.8	18.4	58.8	20.7
Queue Length 50th (ft)	86	0	20	0	65	254	27	197
Queue Length 95th (ft)	182	51	64	1	154	448	78	355
Internal Link Dist (ft)	323		229			434		2183
Turn Bay Length (ft)					170		180	
Base Capacity (vph)	823	769	831	769	509	2606	509	2551
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.13	0.04	0.04	0.21	0.45	0.09	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	20	90	20	10	30	100	1043	30	40	713	100
Future Volume (veh/h)	110	20	90	20	10	30	100	1043	30	40	713	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	22	100	22	11	33	109	1134	33	44	792	111
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	31	179	59	29	77	139	1863	54	70	1522	213
Arrive On Green	0.11	0.11	0.11	0.05	0.05	0.05	0.08	0.53	0.53	0.04	0.49	0.49
Sat Flow, veh/h	1520	274	1572	1207	603	1585	1781	3526	103	1781	3118	437
Grp Volume(v), veh/h	144	0	100	33	0	33	109	571	596	44	451	452
Grp Sat Flow(s),veh/h/ln	1794	0	1572	1810	0	1585	1781	1777	1852	1781	1777	1778
Q Serve(g_s), s	6.1	0.0	4.7	1.4	0.0	1.6	4.7	17.5	17.5	1.9	13.7	13.7
Cycle Q Clear(g_c), s	6.1	0.0	4.7	1.4	0.0	1.6	4.7	17.5	17.5	1.9	13.7	13.7
Prop In Lane	0.85		1.00	0.67		1.00	1.00		0.06	1.00		0.25
Lane Grp Cap(c), veh/h	204	0	179	88	0	77	139	939	978	70	868	868
V/C Ratio(X)	0.71	0.00	0.56	0.38	0.00	0.43	0.78	0.61	0.61	0.63	0.52	0.52
Avail Cap(c_a), veh/h	915	0	802	923	0	808	568	1585	1652	568	1585	1587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	0.0	32.9	36.2	0.0	36.3	35.5	12.9	12.9	37.1	13.8	13.8
Incr Delay (d2), s/veh	1.7	0.0	1.0	1.0	0.0	1.4	3.6	1.3	1.3	3.4	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	1.8	0.6	0.0	0.6	2.1	6.6	6.8	0.9	5.2	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	0.0	33.9	37.1	0.0	37.7	39.1	14.2	14.1	40.5	14.8	14.8
LnGrp LOS	D	A	C	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		244			66			1276			947	
Approach Delay, s/veh		34.7			37.4			16.3			16.0	
Approach LOS		C			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.6	43.6		8.9	8.5	46.7		14.3
Change Period (Y+Rc), s	5.5	5.3		5.1	* 5.4	* 5.3		5.4
Max Green Setting (Gmax), s	25.0	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	6.7	15.7		3.6	3.9	19.5		8.1
Green Ext Time (p_c), s	0.0	15.3		0.1	0.0	21.9		0.3

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	10	1130	20	20	780
Future Vol, veh/h	10	10	1130	20	20	780
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	92	92	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	11	1228	22	22	867

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1723	631	0	0	1256	0
Stage 1	1245	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	80	424	-	-	550	-
Stage 1	235	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	73	422	-	-	547	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	215	-	-	-	-	-
Stage 2	590	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	239	547	-
HCM Lane V/C Ratio	-	-	0.093	0.041	-
HCM Control Delay (s)	-	-	21.6	11.9	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	155	67	11	11	54	1267	11	949
v/c Ratio	0.60	0.24	0.07	0.06	0.39	0.57	0.10	0.50
Control Delay	53.6	12.9	50.1	0.6	59.8	15.4	58.9	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	12.9	50.1	0.6	59.8	15.4	58.9	18.7
Queue Length 50th (ft)	86	0	6	0	30	206	6	192
Queue Length 95th (ft)	215	42	28	0	99	611	33	437
Internal Link Dist (ft)	514		379			1561		782
Turn Bay Length (ft)					140		160	
Base Capacity (vph)	808	744	803	741	502	2753	502	2696
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.09	0.01	0.01	0.11	0.46	0.02	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	10	60	10	0	10	50	1145	20	10	764	90
Future Volume (veh/h)	130	10	60	10	0	10	50	1145	20	10	764	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	144	11	67	11	0	11	54	1245	22	11	849	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	15	184	66	0	57	78	2023	36	24	1706	201
Arrive On Green	0.12	0.12	0.12	0.04	0.00	0.04	0.04	0.57	0.57	0.01	0.53	0.53
Sat Flow, veh/h	1660	127	1577	1781	0	1555	1781	3572	63	1781	3191	376
Grp Volume(v), veh/h	155	0	67	11	0	11	54	619	648	11	473	476
Grp Sat Flow(s),veh/h/ln	1787	0	1577	1781	0	1555	1781	1777	1859	1781	1777	1790
Q Serve(g_s), s	6.7	0.0	3.1	0.5	0.0	0.5	2.4	18.5	18.5	0.5	13.4	13.4
Cycle Q Clear(g_c), s	6.7	0.0	3.1	0.5	0.0	0.5	2.4	18.5	18.5	0.5	13.4	13.4
Prop In Lane	0.93		1.00	1.00		1.00	1.00		0.03	1.00		0.21
Lane Grp Cap(c), veh/h	209	0	184	66	0	57	78	1006	1052	24	950	957
V/C Ratio(X)	0.74	0.00	0.36	0.17	0.00	0.19	0.69	0.62	0.62	0.46	0.50	0.50
Avail Cap(c_a), veh/h	898	0	792	895	0	781	559	1562	1634	559	1562	1574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	32.4	37.1	0.0	37.2	37.5	11.5	11.5	39.0	11.7	11.7
Incr Delay (d2), s/veh	1.9	0.0	0.4	0.4	0.0	0.6	4.0	1.3	1.2	4.9	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	1.2	0.2	0.0	0.2	1.1	6.7	7.0	0.2	5.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	0.0	32.9	37.6	0.0	37.8	41.6	12.7	12.7	43.9	12.6	12.6
LnGrp LOS	D	A	C	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		222			22			1321			960	
Approach Delay, s/veh		35.0			37.7			13.9			12.9	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	47.9		8.5	5.8	50.4		14.9
Change Period (Y+Rc), s	* 4.8	5.3		5.6	* 4.7	* 5.3		5.6
Max Green Setting (Gmax), s	* 25	70.0		40.0	* 25	* 70		40.0
Max Q Clear Time (g_c+I1), s	4.4	15.4		2.5	2.5	20.5		8.7
Green Ext Time (p_c), s	0.0	16.5		0.0	0.0	24.6		0.3

Intersection Summary		
HCM 6th Ctrl Delay		15.6
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	400	1707	185	375	1652	566	178	557	278	412	368	214
v/c Ratio	0.85	1.19	0.26	0.74	0.79	0.71	0.68	0.82	0.66	1.36	0.50	0.47
Control Delay	71.5	128.8	9.1	63.3	37.6	23.6	71.5	60.9	27.6	225.5	47.9	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.5	128.8	9.1	63.3	37.6	23.6	71.5	60.9	27.6	225.5	47.9	13.7
Queue Length 50th (ft)	171	~922	27	157	441	220	76	239	93	~234	145	28
Queue Length 95th (ft)	225	#1062	78	#292	#607	419	113	285	180	#340	187	98
Internal Link Dist (ft)		705			317			465			1561	
Turn Bay Length (ft)	225		325	225		175	230		150	175		145
Base Capacity (vph)	541	1432	711	504	2102	796	330	876	503	303	860	508
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	1.19	0.26	0.74	0.79	0.71	0.54	0.64	0.55	1.36	0.43	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	45	323	1570	170	25	320	1520	521	160	501	250	371
Future Volume (veh/h)	45	323	1570	170	25	320	1520	521	160	501	250	371
Initial Q (Qb), veh		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		0.99	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
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		351	1707	185		348	1652	566	178	557	278	412
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.90	0.90	0.90	0.90
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		403	1576	702		332	2160	669	229	721	320	306
Arrive On Green		0.12	0.44	0.44		0.10	0.42	0.42	0.07	0.20	0.20	0.09
Sat Flow, veh/h		3456	3554	1584		3456	5106	1582	3456	3554	1576	3456
Grp Volume(v), veh/h		351	1707	185		348	1652	566	178	557	278	412
Grp Sat Flow(s),veh/h/ln		1728	1777	1584		1728	1702	1582	1728	1777	1576	1728
Q Serve(g_s), s		13.0	57.6	9.6		12.5	35.9	41.8	6.6	19.3	22.2	11.5
Cycle Q Clear(g_c), s		13.0	57.6	9.6		12.5	35.9	41.8	6.6	19.3	22.2	11.5
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		403	1576	702		332	2160	669	229	721	320	306
V/C Ratio(X)		0.87	1.08	0.26		1.05	0.76	0.85	0.78	0.77	0.87	1.35
Avail Cap(c_a), veh/h		545	1576	702		332	2160	669	332	880	390	306
HCM Platoon Ratio		1.00	1.00	1.00		1.00	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	1.00	1.00	1.00	0.87
Uniform Delay (d), s/veh		56.5	36.2	22.8		58.8	32.0	33.7	59.7	49.0	50.2	59.2
Incr Delay (d2), s/veh		9.1	48.9	0.9		62.3	2.6	12.5	3.8	2.7	14.3	174.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		6.2	35.1	3.8		8.3	15.2	18.1	3.0	8.8	10.0	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		65.5	85.1	23.7		121.0	34.6	46.2	63.6	51.7	64.4	233.6
LnGrp LOS		E	F	C		F	C	D	E	D	E	F
Approach Vol, veh/h			2243				2566			1013		
Approach Delay, s/veh			77.0				48.9			57.3		
Approach LOS			E				D			E		

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	60.2	14.1	35.0	18.0	62.8	17.0	32.2
Change Period (Y+Rc), s	5.5	* 5.2	5.5	* 5.8	5.5	* 5.2	5.5	5.8
Max Green Setting (Gmax), s	20.5	* 44	12.5	* 32	12.5	* 52	11.5	32.2
Max Q Clear Time (g_c+I1), s	15.0	43.8	8.6	17.9	14.5	59.6	13.5	24.2
Green Ext Time (p_c), s	0.2	0.0	0.0	0.9	0.0	0.0	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	70.2
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	331	193
Future Volume (veh/h)	331	193
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	368	214
Peak Hour Factor	0.90	0.90
Percent Heavy Veh, %	2	2
Cap, veh/h	799	354
Arrive On Green	0.22	0.22
Sat Flow, veh/h	3554	1572
Grp Volume(v), veh/h	368	214
Grp Sat Flow(s),veh/h/ln	1777	1572
Q Serve(g_s), s	11.6	15.9
Cycle Q Clear(g_c), s	11.6	15.9
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	799	354
V/C Ratio(X)	0.46	0.61
Avail Cap(c_a), veh/h	864	382
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.87	0.87
Uniform Delay (d), s/veh	43.6	45.2
Incr Delay (d2), s/veh	0.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	6.3
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	43.7	46.5
LnGrp LOS	D	D
Approach Vol, veh/h	994	
Approach Delay, s/veh	123.0	
Approach LOS	F	
Timer - Assigned Phs		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	167	163	109	1980	104	1478
v/c Ratio	0.50	0.62	0.67	0.64	0.66	0.48
Control Delay	40.1	41.8	80.2	20.6	80.2	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	41.8	80.2	20.6	80.2	17.5
Queue Length 50th (ft)	47	37	98	369	93	238
Queue Length 95th (ft)	75	74	157	666	152	437
Internal Link Dist (ft)	246	2059		209		273
Turn Bay Length (ft)			160		180	
Base Capacity (vph)	629	399	264	3091	266	3081
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.41	0.41	0.64	0.39	0.48

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	50	40	60	52	20	75	20	80	1760	62	96	1310
Future Volume (veh/h)	50	40	60	52	20	75	20	80	1760	62	96	1310
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856		1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	56	44	67	58	22	83		87	1913	67	104	1424
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3		3	3	3	3	3
Cap, veh/h	80	63	97	88	34	107		112	3209	112	129	3237
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07		0.06	0.64	0.64	0.07	0.65
Sat Flow, veh/h	1131	891	1372	1298	492	1566		1767	5025	176	1767	5005
Grp Volume(v), veh/h	89	0	78	80	0	83		87	1285	695	104	961
Grp Sat Flow(s),veh/h/ln	1799	0	1595	1791	0	1566		1767	1689	1823	1767	1689
Q Serve(g_s), s	6.8	0.0	6.7	6.1	0.0	7.3		6.8	31.1	31.2	8.1	19.7
Cycle Q Clear(g_c), s	6.8	0.0	6.7	6.1	0.0	7.3		6.8	31.1	31.2	8.1	19.7
Prop In Lane	0.63		0.86	0.73		1.00		1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	127	0	112	122	0	107		112	2157	1164	129	2184
V/C Ratio(X)	0.70	0.00	0.69	0.66	0.00	0.78		0.78	0.60	0.60	0.81	0.44
Avail Cap(c_a), veh/h	314	0	278	184	0	161		266	2157	1164	269	2184
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.6	0.0	63.6	63.6	0.0	64.2		64.6	14.8	14.8	63.9	12.2
Incr Delay (d2), s/veh	2.6	0.0	2.8	2.2	0.0	6.1		4.3	0.3	0.6	4.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	2.8	2.9	0.0	3.1		3.2	11.7	12.7	3.8	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	0.0	66.4	65.9	0.0	70.3		68.9	15.1	15.4	68.4	12.9
LnGrp LOS	E	A	E	E	A	E		E	B	B	E	B
Approach Vol, veh/h		167			163				2067			1582
Approach Delay, s/veh		66.4			68.1				17.4			16.7
Approach LOS		E			E				B			B

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.8	95.7		15.1	14.9	94.5		15.5
Change Period (Y+Rc), s	* 4.9	* 5.1		5.6	* 4.7	5.1		5.6
Max Green Setting (Gmax), s	* 21	* 59		14.4	* 21	58.9		24.4
Max Q Clear Time (g_c+I1), s	8.8	21.7		9.3	10.1	33.2		8.8
Green Ext Time (p_c), s	0.1	8.8		0.2	0.1	12.1		0.5

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	50
Future Volume (veh/h)	50
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1856
Adj Flow Rate, veh/h	54
Peak Hour Factor	0.92
Percent Heavy Veh, %	3
Cap, veh/h	123
Arrive On Green	0.65
Sat Flow, veh/h	190
Grp Volume(v), veh/h	517
Grp Sat Flow(s),veh/h/ln	1818
Q Serve(g_s), s	19.7
Cycle Q Clear(g_c), s	19.7
Prop In Lane	0.10
Lane Grp Cap(c), veh/h	1176
V/C Ratio(X)	0.44
Avail Cap(c_a), veh/h	1176
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	12.2
Incr Delay (d2), s/veh	1.2
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	8.2
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	13.4
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	100	50	10	10	6
Future Vol, veh/h	8	100	50	10	10	6
Conflicting Peds, #/hr	0	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	111	56	11	11	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	139	17	19	0	-	0
Stage 1	16	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	854	1062	1597	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	822	1060	1595	-	-	-
Mov Cap-2 Maneuver	822	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	6.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1595	-	1038	-	-
HCM Lane V/C Ratio	0.035	-	0.116	-	-
HCM Control Delay (s)	7.3	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Environmental Noise and Vibration Assessment

Fair Oaks Senior Apartments

Citrus Heights, California

BAC Job # 2019-023

Prepared For:

City of Citrus Heights

Attn: Mr. Casey Kempenaar
6360 Fountain Square Drive
Citrus Heights, CA 95621

Prepared By:

Bollard Acoustical Consultants, Inc.

Jonathan Lopez, Senior Consultant

June 7, 2019

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Acoustical Consultants

CEQA Checklist

NOISE AND VIBRATION – **Would the Project Result in:**	**NA – Not Applicable**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Generation of substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?			**X**		
b) Generation of excessive groundborne vibration or groundborne noise levels?				**X**	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?					**X**

Introduction

The Fair Oaks Senior Apartments project proposes the development of 110 senior adult apartment units located at 12057 Fair Oaks Boulevard in Citrus Heights, California. Existing land uses in the immediate project vicinity consist of single-family residential land uses adjacent to the south and west, multi-family residential land uses adjacent to the north, and single-family residential land uses to the east across Fair Oaks Boulevard. The project site area and site plan are shown on Figures 1 and 2, respectively.

Due to the proximity of the proposed development to adjacent existing residential uses, and the potential for elevated traffic noise levels at the project site, the City of Citrus Heights has requested an environmental noise and vibration assessment to ensure that the applicable noise and vibration standards are satisfied. In response to this request, the City of Citrus Heights has retained Bollard Acoustical Consultants, Inc. (BAC) to prepare this noise and vibration assessment. Specifically, this assessment focuses on the quantification of off-site traffic noise generation, on-site traffic circulation noise, garbage collection noise, and project-generated construction noise and vibration levels.

Noise and Vibration Fundamentals

Noise

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are designated as sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second, or Hertz (Hz). Definitions of acoustical terminology are provided in Appendix A.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure) as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in decibel levels correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by filtering the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this report are in terms of A-weighted levels.

Legend

- Project Border (Approximate)
- Ambient Noise Measurement Locations
- Ambient Vibration Measurement Locations

N

Scale (feet)

0 75 150

Fair Oaks Senior Apartments

Citrus Heights, California

Project Area and Ambient Noise and Vibration Survey Locations

Figure 1

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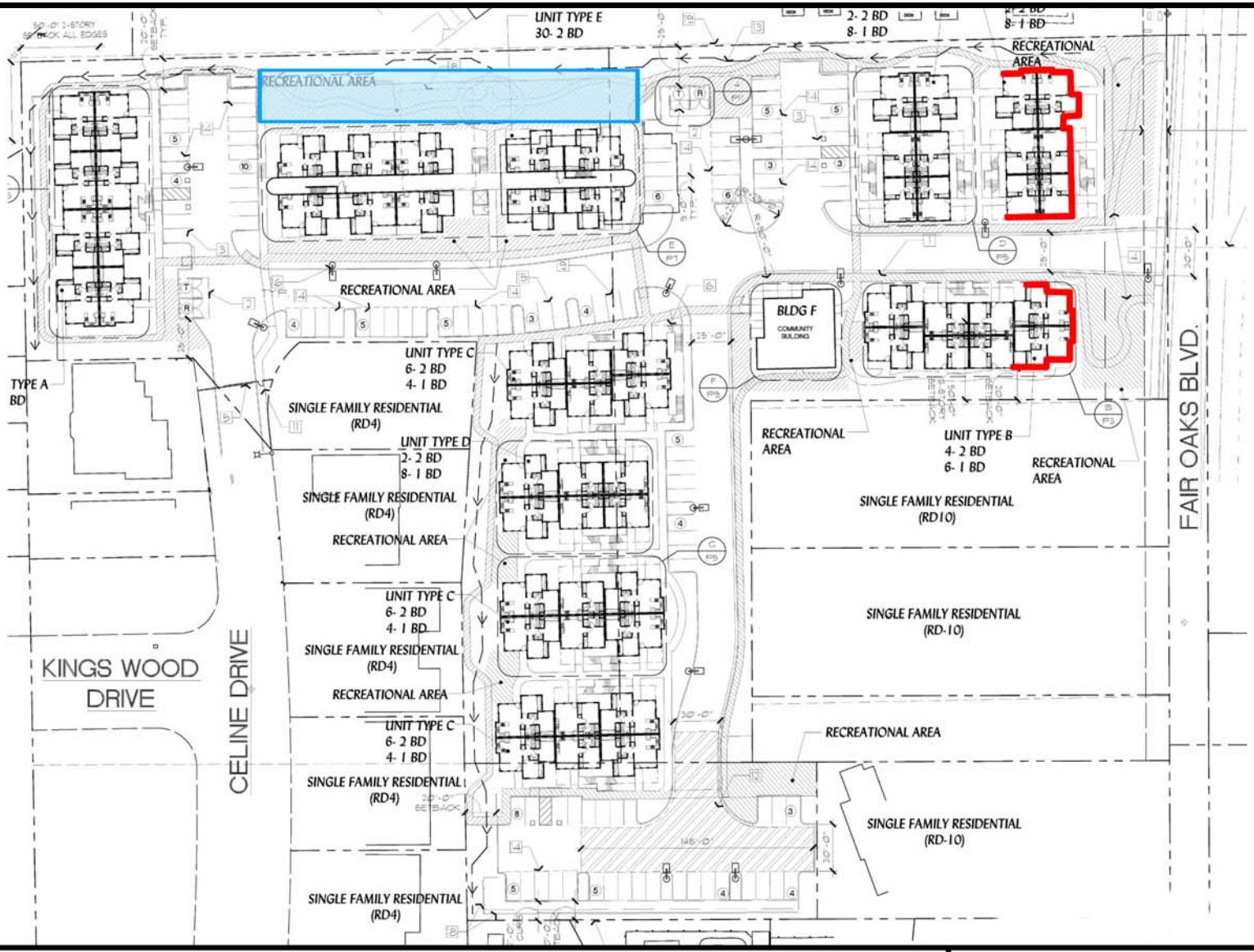

Legend

Primary Common Outdoor Recreational Area

Recommended STC 32 Window and Door Assemblies

N

Scale (feet)

0 50 100

Fair Oaks Senior Apartments

Citrus Heights, California

Project Site Plan and Facades
Requiring Construction Improvements

Figure 2

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Acoustical Consultants

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}). The L_{eq} is the foundation of the day/night average noise descriptor, L_{dn}, and shows very good correlation with community response to noise. The day/night average sound level (L_{dn}) is based on the average noise level over a 24-hour day, with a +10 decibel weighting applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours. The nighttime penalty is based on the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. For this reason, the City of Citrus Heights utilizes performance standards for non-transportation noise sources. Specifically, performance standards in terms of instantaneous maximum levels (L_{max}) and hourly median levels (L_{50}), are primarily used to assess noise generated on the project site.

Vibration

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, while vibration is usually associated with transmission through the ground or structures. As with noise, vibration consists of an amplitude and frequency. A person's response to vibration will depend on their individual sensitivity as well as the amplitude and frequency of the source.

Vibration can be described in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of velocity in inches per second peak particle velocity (IPS, PPV) or root-mean-square (VdB, RMS). Standards pertaining to perception as well as damage to structures have been developed for vibration in terms of peak particle velocity as well as RMS velocities.

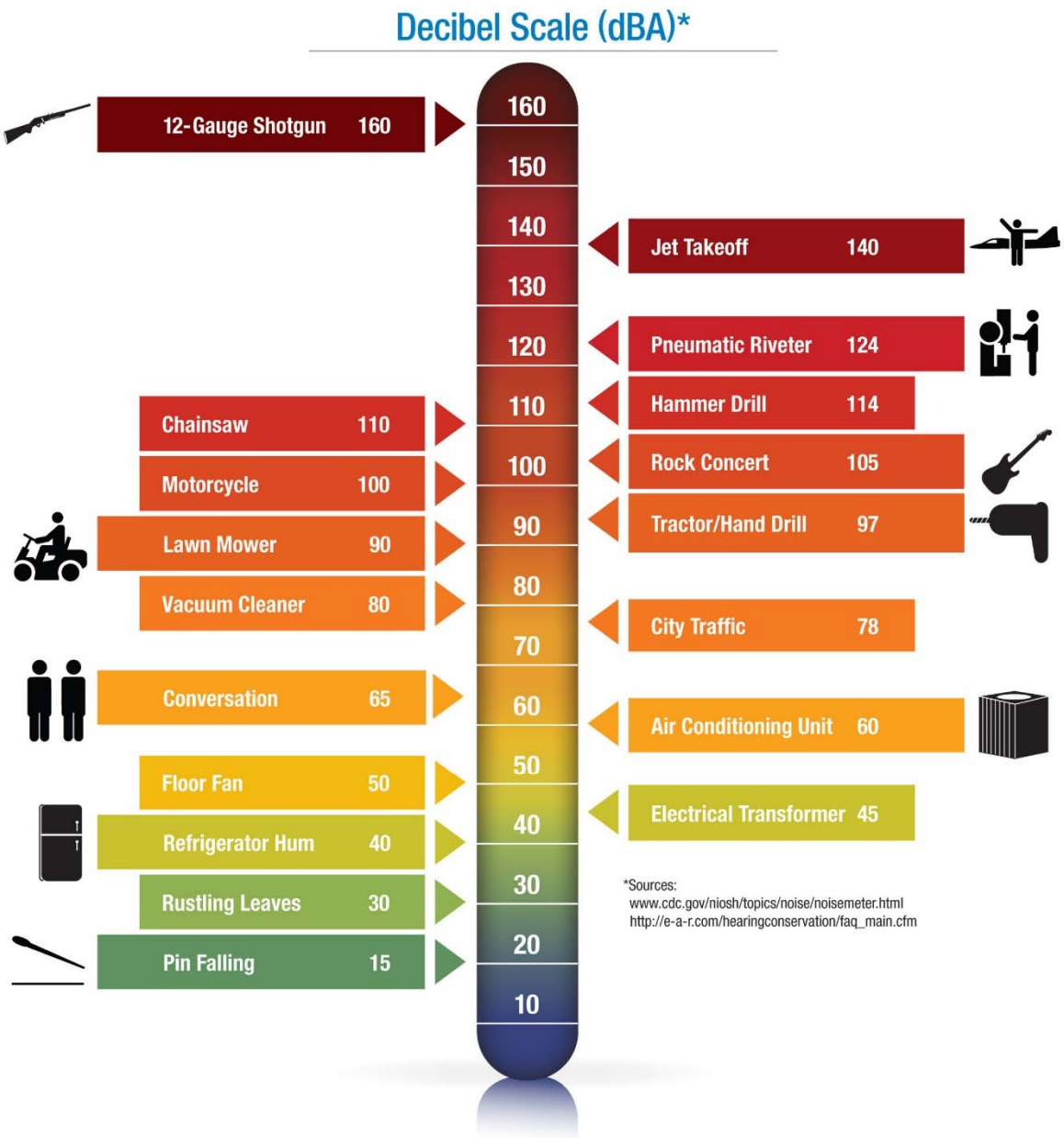
As vibrations travel outward from the source, they excite the particles of rock and soil through which they pass and cause them to oscillate. Differences in subsurface geologic conditions and distance from the source of vibration will result in different vibration levels characterized by different frequencies and intensities. In all cases, vibration amplitudes will decrease with increasing distance. The maximum rate, or velocity of particle movement, is the commonly accepted descriptor of the vibration "strength".

Human response to vibration is difficult to quantify. Vibration can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does frequency. Generally, as the duration and vibration frequency increase, the potential for adverse human response increases.

According to the Transportation and Construction-Induced Vibration Guidance Manual (Caltrans, June 2004), operation of construction equipment and construction techniques generate ground vibration. Traffic traveling on roadways can also be a source of such vibration. At high enough amplitudes, ground vibration has the potential to damage structures and/or cause cosmetic damage. Ground vibration can also be a source of annoyance to individuals who live or work

close to vibration-generating activities. However, traffic, rarely generates vibration amplitudes high enough to cause structural or cosmetic damage.

Figure 3
Noise Levels Associated with Common Noise Sources



Environmental Setting - Existing Ambient Noise and Vibration Environment

Noise Sensitive Land Uses in the Project Vicinity

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the primary intended use of the land. Places where people live, sleep, recreate, worship, and study are generally considered to be sensitive to noise because intrusive noise can be disruptive to these activities.

The noise-sensitive land uses which would potentially be affected by the project consist primarily of residential uses. Specifically, a multi-family residential land use is located to the north while single-family residential land uses are located in all other directions. The surrounding land uses are shown on Figure 1.

Existing Traffic Noise Levels along Project Area Roadway Network

The FHWA Traffic Noise Model (FHWA-RD-77-108) was used to develop existing noise contours expressed in terms of L_{dn} for major roadways within the project study area. The FHWA model predicts hourly L_{eq} values for free-flowing traffic conditions. Estimates of the hourly distribution of traffic for a typical 24-hour period were used to develop L_{dn} values from L_{eq} values.

Traffic data in the form of AM and PM peak hour movements for existing (baseline) conditions were obtained from Kimley-Horn and Associates, Inc. (KHA - the project traffic engineers). Average daily traffic volumes were conservatively estimated by applying a factor of 10 to AM peak hour conditions. Using these data and the FHWA model, traffic noise levels were calculated. The traffic noise level at 100 feet from the roadway centerline and distances from the centerlines of selected roadways to the 60 dB, 65 dB, and 70 dB L_{dn} contours are summarized in Table 1.

In many cases, the actual distances to noise level contours may vary from the distances predicted by the FHWA model. Factors such as roadway curvature, roadway grade, shielding from local topography or structures, elevated roadways, or elevated receivers may affect actual sound propagation.

It is also recognized that existing sensitive land uses within the project vicinity are located varying distances from the centerlines of the local roadway network. The 100 foot reference distance is utilized in this analysis to provide a reference position at which changes in existing and future traffic noise levels resulting from the project can be evaluated. Appendix B contains the FWHA model inputs for existing conditions.

Table 1
Baseline (2019) Traffic Noise Modeling Results

Segment	Roadway	Segment Description	L_{dn} 100 feet from roadway	Distance to Contour (feet)		
				70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
1	Fair Oaks Blvd	North of Greenback Ln	65	45	98	210
2		Greenback Ln to Sunrise E Way	65	49	105	225
3		Sunrise E Way to Walnut Hills Way	65	49	105	226
4		Walnut Hills Way to Teecrest Ave	65	49	105	226
5		Teecrest Ave to Madison Ave	65	48	104	225
6		South of Madison Ave	65	43	92	198
7	Sunrise Blvd	North of Kingswood Dr	67	61	131	282
8		South of Kingswood Dr	67	61	132	285
9	Greenback Ln	West of Fair Oaks Blvd	66	55	119	256
10		East of Fair Oaks Blvd	67	58	125	270
11	Sunrise E Way	West of Fair Oaks Blvd	51	5	11	23
12		East of Fair Oaks Blvd	47	3	6	13
13	Walnut Hills Way	East of Fair Oaks Blvd	43	1	3	7
14	Teecrest Ave	West of Fair Oaks Blvd	51	5	11	24
15		East of Fair Oaks Blvd	46	2	5	11
16	Madison Ave	West of Fair Oaks Blvd	69	87	187	403
17		East of Fair Oaks Blvd	69	85	182	393
18	Kingswood Drive	West of Sunrise Blvd	50	5	10	21
19		East of Sunrise Blvd	50	4	10	21
20		West of Celine Dr	48	3	8	16
21	Celine Drive	North of Kingswood Dr	28	0	0	1
22		South of Kingswood Dr	48	4	8	16

Source: FHWA-RD-77-108 with inputs from KHA and BAC file data. A complete listing of traffic model inputs is provided in Appendix B.

Existing Ambient Noise Environment in the Immediate Project Vicinity

The ambient noise environment in the immediate project vicinity is defined primarily by noise from Fair Oaks Boulevard traffic. To generally quantify existing ambient noise levels in the project vicinity, one long-term (24-hour) ambient noise survey was conducted on February 6, 2019 and four short-term (15-minute) ambient noise surveys were conducted on April 10, 2019. The five noise survey locations are shown on Figure 1. The long-term noise survey location was intended to be representative of traffic noise exposure at the proposed building façades nearest to Fair Oaks Boulevard, maintaining a setback of 100 feet from the roadway centerline. The short-term measurement sites were selected to be representative of the ambient noise exposure at the nearest potentially affected existing residential land uses to the project site. Photographs of the noise survey locations are provided in Appendix C.

Larson Davis Laboratories (LDL) Model 820 and 831 precision integrating sound level meters were used for the noise level measurement surveys. The meters were calibrated before use with an LDL Model CA200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all specifications of the American National Standards Institute requirements for Type 1 sound level meters (ANSI S1.4). A summary of the measurement results is provided below in Table 2. Detailed noise level measurement results are contained in Appendices D and E. A summary of the short-term measurement results is provided in Table 3.

Table 2
Long-Term Ambient Noise Monitoring Results – February 6, 2019

Site	Description	L_{dn}	Average Measured Hourly Noise Levels, dB			
			Daytime (7 AM-10 PM)		Nighttime (10 PM-7 AM)	
			L_{50}	L_{max}	L_{50}	L_{max}
LT-1	East side of project site, approximately 100 feet from centerline of Fair Oaks Blvd.	65	62	69-88	47	67-76
Source: Bollard Acoustical Consultants, Inc.						

Table 3
Short-Term Ambient Noise Monitoring Results – April 10, 2019

Site	Description	Time of Day	Measured Noise Levels, dB	
			L_{50}	L_{max}
ST-1	East side of project site	11:46 AM	63	70
ST-2	South side of project site	12:28 PM	56	72
ST-3	Centrally located on project site	12:49 PM	52	57
ST-4	West side of project site	2:46 PM	50	68
Source: Bollard Acoustical Consultants, Inc.				

The Table 2 data indicate that existing ambient noise levels at the project site were satisfactory relative to the City of Citrus Heights General Plan normally acceptable exterior traffic noise level standard of 65 dB L_{dn} for new multi-family residential land uses. According to Appendix D, measured maximum noise levels during the 24-hour period ranged from a low of 67 dB L_{max} during the 11 PM hour to a high of 88 dB L_{max} during the 6 PM hour. The calculated arithmetic average of maximum noise levels measured during the survey period was 74 dB L_{max}.

Results from the short-term noise survey summarized in Table 3 indicate that measured median ambient noise levels ranged from 50 dB to 63 dB while maximum noise levels ranged from 57 dB to 72 dB.

Existing Ambient Vibration Environment

During the site visit on April 10, 2019, vibration levels were observed by BAC staff to be below the threshold of perception at the project site. Nonetheless, to quantify existing vibration levels

at the project site, BAC conducted short-term (15-minute) vibration measurements at the four locations shown on Figure 1.

A Larson-Davis Laboratories Model LxT precision integrating sound level meter equipped with a vibration transducer was used to complete the measurements. The results are summarized in Table 4. The Table 4 data indicate that measures average vibration levels in the project vicinity ranged from 34 VdB to 47 VdB RMS.

Table 4
Ambient Vibration Monitoring Results – April 10, 2019

Site	Description	Time of Day	Average Vibration Level, VdB RMS
V-1	East side of project site	11:46 AM	47
V-2	South side of project site	12:28 PM	36
V-3	Centrally located on project site	12:49 PM	34
V-4	West side of project site	2:46 PM	34

Source: Bollard Acoustical Consultants, Inc.

1. VdB RMS refers to root-mean-square measurements of vibration velocity, reported in decibels.

The low measured vibration levels reports in Table 4 support BAC staff observations that baseline vibration levels were below the threshold of perception at the project site.

Regulatory Setting: Criteria for Acceptable Noise and Vibration Exposure

Federal

There are no federal noise or vibration criteria which would be directly applicable to this project.

State of California

<u>California Environmental Quality Act (CEQA)</u>

The State of California has established regulatory criteria that are applicable to this assessment. Specifically, Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines are used to assess the potential significance of impacts pursuant to local General Plan policies, Municipal Code standards, or the applicable standards of other agencies. According to Appendix G of the CEQA guidelines, the project would result in a significant noise or vibration impact if the following occur:

A. Generation of substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?

B. Generation of excessive groundborne vibration or groundborne noise levels?

C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or

public use airport, would the project expose people residing or working in the project area to excessive noise levels?

It should be noted that audibility is not a test of significance according to CEQA. If this were the case, any project which added any audible amount of noise to the environment would be considered unacceptable according to CEQA. Because every physical process creates noise, the use of audibility alone as significance criteria would be unworkable. CEQA requires a substantial increase in noise levels before noise impacts are identified, not simply an audible change.

Federal Transit Administration (FTA)

The City of Citrus Heights does not currently have adopted standards for groundborne vibration. As a result, vibration impact assessment criteria established by the U.S. Department of Transportation's Federal Transit Administration (FTA) criteria was applied to the project. The FTA vibration impact criteria is based on maximum overall levels for a single event, such as vehicle passbys on roadways and heavy equipment operations. This vibration impact criteria, identified in Table 6-3 of the FTA's Transit Noise and Vibration Impact Assessment Manual (September 2018), has been reproduced in Table 5.

Table 5
Groundborne Vibration Impact Criteria

Land Use Category	Groundborne Vibration Impact Levels (VdB re 1 µinch/sec, RMS)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1 – Buildings where vibration would interfere with interior operations	65[4]	65[4]	65[4]
Category 2 – Residences and buildings where people normally sleep	72	75	80
Category 3 – Institutional land uses with primarily daytime use	75	78	83

Notes:
[1] "Frequent Events" is defined as more than 70 vibration events of the same source per day.
[2] "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
[3] "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day.
[4] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. For equipment that is more sensitive, a Detailed Vibration Analysis must be performed.

Source: Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (Sep. 2018), Table 6-3

Local

Citrus Heights General Plan

The City of Citrus Heights General Plan Health Element provides goals and policies to ensure that city residents are not subjected to noise beyond acceptable levels. The General Plan

includes noise criteria for the evaluation of proposed land uses subjected to transportation noise sources (Table 6). The General Plan Community Health Element policies are reproduced below.

Policies

52.1 Review proposed development projects for compliance with the standards in Table 6: Acceptable Noise Levels. If it appears that a project may exceed the limits of Table 6, require an acoustical analysis to identify potential noise levels and attenuation methods.

52.2 New residential development projects shall be designed and constructed to meet acceptable exterior noise level standards shown in Table 6, as follows:

- The maximum exterior noise level of 60 dBA L_{dn} shall be applied in residential areas where outdoor use is a major consideration (such as backyards in single family housing developments and recreation areas in multi-family housing projects). Where the City determines that providing a L_{dn} of 60 dBA or lower is not feasible, the noise level in outdoor areas shall be reduced to as close to the standard as feasible through project design.

- Indoor noise levels shall not exceed an L_{dn} of 45 dBA in new residential housing units.
- Noise levels in new residential development exposed to an exterior L_{dn} of 60 dBA or greater shall be limited to a maximum instantaneous noise level (e.g., trucks on busy streets, train warning whistles) in bedrooms of 50 dBA L_{max}. Maximum instantaneous noise levels in all other habitable rooms shall not exceed 55 dBA L_{max}.

Action A. Revise the Noise Ordinance to reflect noise limits to protect noise sensitive land uses from intrusion by stationary noise sources.

Table 6
Acceptable Noise Levels
City of Citrus Heights General Plan

Land Use	Community Noise Exposure L_{dn} or CNEL, dBA			
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Residential: Low-Density Single Family, Duplex, Mobile Homes	60	65	75	85
Residential: Multiple Family	65	70	75	85
Residential: Multiple Family Located in Commercial Zone Districts[5]	65	70	--	--
Transient Lodging: Motels, Hotels	65	70	80	85
Schools, Libraries, Churches, Hospitals, Nursing Homes	70	70	80	85
Auditoriums, Concert Halls, Amphitheaters	--	70	--	85
Sports Arena, Outdoor Spectator Sports	--	75	--	85
Playgrounds, Neighborhood Parks	70	--	75	85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75	--	80	85
Office Buildings, Business Commercial and Professional	70	75	85	--
Industrial, Manufacturing, Utilities, Agriculture	75	80	85	--

Notes

1 Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements

2 New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

3 New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

4 New construction or development should generally not be undertaken.

5 For residential multiple family uses located in Commercial zone districts, exterior space standards apply only to common outdoor recreational areas.

Source: City of Citrus Heights General Plan

52.3 Protect the community, especially noise sensitive receptors, including schools, residences and care facilities, from excessive noise. Residential uses located in a commercial zone are not considered noise sensitive receptors.

Action A. Amend the Noise Ordinance to identify short- and long-term unacceptable noise generating activities (including certain music bass levels), and to establish allowable duration for certain noise generators (including construction activities, car alarms and leaf blowers).

52.4 Require major development proposals to reduce noise impacts on adjacent properties through appropriate techniques including, but not limited to, the following strategies:

- Permit well-designed sound walls when compatible with the surrounding area
- Screen and control noise sources such as parking, loading docks and mechanical equipment
- Increase setbacks for noise sources from adjacent dwellings
- Whenever possible, retain fences, walls or landscaping that serve as noise buffers (although design, safety and other impacts must also be addressed)
- Use soundproofing material and double-glazed windows
- Control hours of operation, including deliveries and trash pickup

52.5 When located adjacent to existing or planned sensitive residential and public/quasi-public uses, require new nonresidential development to mitigate noise to a maximum of 60 dBA L_{dn} at the property line.

52.6 Use techniques such as roadway design, traffic signalization and other traffic management techniques (such as limiting heavy truck traffic in residential areas and requiring alternative paving material) to reduce noise caused by speed or acceleration of vehicles.

52.7 Protect receivers of roadway noise through appropriate attenuation techniques. The preference is for noise attenuation techniques that minimize the use of sound walls.

Action A. Prepare and adopt Community Design Guidelines that favor site planning and design techniques over sound walls. Preferred approaches include: a) installing earth berms; b) increasing the distance between the noise source and the receiver; c) using non-sensitive structures to shield noise-sensitive areas; and d) orienting buildings to shield outdoor spaces from the noise source.

52.8 Design sound barriers to be aesthetically pleasing and vandalism-resistant.

Action A. Require non-earthen sound barriers to be landscaped, vegetated or otherwise designed and/or obscured to be attractive and discourage graffiti and other vandalism.

52.9 Ensure that the City's noise regulations are clear, appropriate, and strictly enforced to protect residents from excessive noise.

Action A. Review and update the Noise Ordinance to include appropriate and clear standards.

Citrus Heights Municipal Code (Noise Ordinance)

The provisions of the City of Citrus Heights Noise Ordinance which would be most applicable to this project are reproduced below. The complete text of the City Noise Ordinance is provided in Appendix F.

Section 34-86 of the Noise Ordinance establishes acceptable noise level criteria for non-transportation noise sources, which would include all sources of noise occurring within the project site such as on-site circulation traffic noise, parking lot activity noise, and garbage collection noise. The City's exterior noise standards are provided below in Table 7.

Table 7
Exterior Noise Standards
City of Citrus Heights Municipal Code

Noise Metric	Duration of Hour	Daytime (7 AM to 10 PM)	Nighttime (10 PM to 7 AM)
L_{max}	Any Time	75	70
L_{02}	1-5 minutes	70	65
L_{08}	5-15 minutes	65	60
L_{25}	15-30 minutes	60	55
L_{50}	30-60 minutes	55	50

Notes
[1] Each of the noise limits specified above shall be reduced by 5 dB for impulsive or simple tone noises or for noises consisting of speech or music.
Source: City of Citrus Heights Municipal Code

Section 34-88 provides activities which are exempt from the Noise Ordinance. Section 34-88 (5), pertaining to construction noise, is reproduced below:

> Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided the activities do not take place between the hours of 8:00 p.m. and 6:00 a.m. on weekdays and Friday commencing at 8:00 p.m. through and including 7:00 a.m. on Saturday, Saturdays commencing at 8:00 p.m. through and including 7:00 a.m. on the next following Sunday, and on each Sunday after the hour of 8:00 p.m. However, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 8:00 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

Sec. 34-93. - Waste disposal vehicles.

(a) It is unlawful for any person authorized to engage in waste disposal service or garbage collection to operate any truck-mounted waste or garbage loading and/or

composting equipment or similar mechanical device in any manner so as to create any noise exceeding the following level, when measured at a distance of 50 feet from the equipment in an open area:

(1) New equipment purchased or leased on or after a date six months from July 1, 1976, shall not exceed a noise level of 80 dBA.

(2) New equipment purchased or leased on or after 42 months from July 1, 1976, shall not exceed a noise level of 75 dBA.

(3) Present equipment shall not exceed a noise level of 80 dBA on or after five years from July 1, 1976.

(b) This section shall not abridge or conflict with the powers of the state over motor vehicle control.

Impacts and Mitigation Measures

Thresholds of Significance

For the purposes of this report, a noise and vibration impact is considered significant if the project would result in:

- Generation of substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards.
- Generation of excessive groundborne vibration or groundborne noise levels.
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

The project site is not within the vicinity of a private airstrip; therefore, the last threshold listed above is not discussed further. CEQA requires the identification of significant noise impacts if the project would result in substantial permanent or temporary increases in noise. Audibility is not a test of significance according to CEQA. If this were the case, any project which added any audible amount of noise to the environment would be considered unacceptable according to CEQA. Because every physical process creates noise, whether by the addition of a single vehicle on a roadway, or a tractor in an agricultural field, the use of audibility alone as significance criteria would be unworkable. CEQA requires a substantial increase in noise levels before noise impacts are identified, not simply an audible change.

The CEQA guidelines, however, do not specify the numeric noise level increase which is considered substantial. It is generally recognized that an increase of at least 3 dB for similar noise sources is usually required before most people will perceive a change in noise levels, and an

increase of 6 dB is required before the change will be clearly noticeable (Egan, Architectural Acoustics, page 21, 2007, McGraw Hill).

The Federal Interagency Commission on Noise (FICON) has developed a graduated scale for use in the assessment of project related noise level increases. Table 8 was developed by FICON as a means of developing thresholds for impact identification for project related noise level increases. The FICON standards have been used extensively in recent years by the authors of this section in the preparation of the noise sections of Environmental Impact Reports that have been certified in many California Cities and Counties.

Table 8
Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level Without Project, L_{dn}	Increase Required for Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more
Source: Federal Interagency Committee on Noise (FICON)	

Based on the FICON research, as shown in Table 8, a 5 dB increase in noise levels due to a project is required for a finding of significant noise impact where ambient noise levels without the project are less than 60 dB L_{dn}. Where pre-project ambient conditions are between 60 and 65 dB L_{dn}, a 3 dB increase is applied as the standard of significance. Finally, in areas already exposed to higher noise levels, specifically pre-project noise levels in excess of 65 dB L_{dn}, a 1.5 dB increase is considered by FICON as the threshold of significance. The rationale for the graduated scale used in the FICON standards is that test subjects' reactions to increases in noise levels varied depending on the starting level of noise. Specifically, with lower ambient noise environments, such as those below 60 dB L_{dn}, a larger increase in noise levels was required to achieve a negative reaction than was necessary in more elevated noise environments.

The use of the FICON standards are considered conservative relative to thresholds used by other agencies in the State of California. For example, the California Department of Transportation (Caltrans) requires a project related traffic noise level increase of 12 dB for a finding of significance, and the California Energy Commission (CEC) considers project related noise level increases between 5 and 10 dB significant, depending on local factors. Therefore, the use of the FICON standards, which set the threshold for finding of significant noise impacts as low as 1.5 dB, provides a very conservative approach to impact assessment for this project.

The following criteria based on standards identified in in the General Plan, Municipal Code, Federal Transit Administration (FTA), and FICON were used to evaluate the significance of environmental noise resulting from the project:

- A significant noise impact would be identified if the project would expose persons to or generate noise levels that would exceed applicable noise standards presented in the General Plan or Municipal Code.

- A significant impact would be identified if the construction of the project would expose persons to excessive vibration levels. Specifically, an impact would be identified if groundborne vibration levels due to project construction activities exceed the FTA Groundborne Vibration Impact criteria provided in Table 5.

- A significant impact would be identified if traffic generated by the project would substantially increase noise levels at sensitive receptors in the vicinity. A substantial increase would be identified relative to the FICON standards provided in Table 8.

Noise Impacts Due to the Project

Off-Site Traffic Noise Impacts

With development of the project site, traffic volumes on the local roadway network will increase. Those increases in daily traffic volumes will result in a corresponding increase in traffic noise levels at existing uses located along those roadways. The FHWA Model was used with traffic data provided by the client to predict project traffic noise level increases relative to Baseline (2019), Baseline (2019) Plus Approved Projects, and Cumulative (2036), project and no-project conditions.

Impact 1: Increases in Baseline (2019) Traffic Noise Levels due to the Project

Baseline (2019) versus Baseline (2019) Plus Project traffic noise levels on the local roadway network are shown in Table 9. The following section includes an assessment of predicted traffic noise levels relative to the FICON significance noise criteria identified in Table 8. The Table 9 data are provided in terms of L_{dn} at a standard distance of 100 feet from the centerlines of the project-area roadways. Appendix B contains the FWHA model inputs.

Table 9
Traffic Noise Modeling Results and Project-Related Traffic Noise Increases
Baseline (2019) Conditions

Segment	Roadway	Segment Description	Traffic Noise Level at 100 feet, dB L_{dn}			Substantial Increase?
			Baseline	Baseline + Project	Increase	
1	Fair Oaks Blvd	North of Greenback Ln	64.8	64.8	0.0	No
2		Greenback Ln to Sunrise E Way	65.3	65.3	0.0	No
3		Sunrise E Way to Walnut Hills Way	65.3	65.3	0.0	No
4		Walnut Hills Way to Teecrest Ave	65.3	65.3	0.0	No
5		Teecrest Ave to Madison Ave	65.3	65.3	0.0	No
6		South of Madison Ave	64.5	64.5	0.0	No
7	Sunrise Blvd	North of Kingswood Dr	66.8	66.8	0.0	No
8		South of Kingswood Dr	66.8	66.8	0.0	No
9	Greenback Ln	West of Fair Oaks Blvd	66.1	66.1	0.0	No
10		East of Fair Oaks Blvd	66.5	66.5	0.0	No
11	Sunrise E Way	West of Fair Oaks Blvd	50.5	50.5	0.0	No

Table 9
Traffic Noise Modeling Results and Project-Related Traffic Noise Increases
Baseline (2019) Conditions

Segment	Roadway	Segment Description	Traffic Noise Level at 100 feet, dB L_{dn}			Substantial Increase?
			Baseline	Baseline + Project	Increase	
12		East of Fair Oaks Blvd	46.9	46.9	0.0	No
13	Walnut Hills Way	East of Fair Oaks Blvd	42.6	42.6	0.0	No
14	Teecrest Ave	West of Fair Oaks Blvd	50.6	50.6	0.0	No
15		East of Fair Oaks Blvd	45.9	45.9	0.0	No
16	Madison Ave	West of Fair Oaks Blvd	69.1	69.1	0.0	No
17		East of Fair Oaks Blvd	68.9	68.9	0.0	No
18	Kingswood Drive	West of Sunrise Blvd	49.8	49.8	0.0	No
19		East of Sunrise Blvd	49.7	50.3	0.6	No
20		West of Celine Dr	48.2	49.0	0.8	No
21	Celine Drive	North of Kingswood Dr	28.2	41.7	13.5	Yes
22		South of Kingswood Dr	48.2	48.2	0.0	No

Source: FHWA-RD-77-108 with inputs from KHA and BAC file data. A complete listing of traffic model inputs is provided in Appendix B.

The data in Table 9 indicate that traffic generated by the project would result in traffic noise level increases ranging from 0.0 to 13.5 dB L_{dn}. Relative to the FICON significance criteria identified in Table 8, the increases on all but one roadway segment (#21) would not be considered substantial.

The project proposes a full-access driveway at Celine Drive, just north of Kingswood Drive. The roadway segment is identified above in Table 9 as segment #21. According to Table 9, the FHWA Model predicts a baseline traffic noise level of 28.2 dB L_{dn} along the segment in question. The FHWA Model, however, does not consider the contribution of other noise sources in the environment that define the overall ambient noise level environment. Noise level measurements conducted by BAC in the vicinity of the subject roadway segment indicate the ambient noise environment was 50-52 dB L_{eq} during the short-term sampling period. Based upon the short-term noise level measurement results conducted at sites ST-3 and ST-4, the Day/Night Average Noise Level (L_{dn}) at the residences located along roadway segment #21 is estimated to be 53-55 dB L_{dn}. After consideration of the existing ambient noise environment, the traffic noise increase along segment #21 due to the project would equate to 0.3 dB L_{dn}, which is considered an imperceptible increase. As a result, off-site traffic noise impacts related to increases in traffic resulting from the implementation of the project are identified as being ***less than significant***.

Impact 2: Increases in Baseline (2019) Plus Approved Projects Traffic Noise Levels due to the Project

Baseline Plus Approved Projects (2019) versus Baseline (2019) Plus Approved Projects Plus Proposed Project traffic noise levels on the local roadway network are shown in Table 10. The

following section includes an assessment of predicted traffic noise levels relative to the FICON significance noise criteria identified in Table 8. The Table 10 data are provided in terms of L_{dn} at a standard distance of 100 feet from the centerlines of the project-area roadways. Appendix B contains the FWHA model inputs.

Table 10
Traffic Noise Modeling Results and Project-Related Traffic Noise Increases
Baseline (2019) Plus Approved Projects Conditions

Segment	Roadway	Segment Description	Traffic Noise Level at 100 feet, dB L_{dn}			Substantial Increase?
			Baseline + AP	Baseline+ AP + Project	Increase	
1	Fair Oaks Blvd	North of Greenback Ln	65.1	65.1	0.0	No
2		Greenback Ln to Sunrise E Way	65.7	65.7	0.0	No
3		Sunrise E Way to Walnut Hills Way	65.9	65.9	0.0	No
4		Walnut Hills Way to Teecrest Ave	65.9	65.9	0.0	No
5		Teecrest Ave to Madison Ave	65.9	65.9	0.0	No
6		South of Madison Ave	65.1	65.1	0.0	No
7	Sunrise Blvd	North of Kingswood Dr	67.4	67.5	0.1	No
8		South of Kingswood Dr	67.5	67.5	0.0	No
9	Greenback Ln	West of Fair Oaks Blvd	66.3	66.3	0.0	No
10		East of Fair Oaks Blvd	66.5	66.5	0.0	No
11	Sunrise E Way	West of Fair Oaks Blvd	51.9	51.9	0.0	No
12		East of Fair Oaks Blvd	48.0	48	0.0	No
13	Walnut Hills Way	East of Fair Oaks Blvd	44.3	44.3	0.0	No
14	Teecrest Ave	West of Fair Oaks Blvd	51.4	51.4	0.0	No
15		East of Fair Oaks Blvd	46.2	46.2	0.0	No
16	Madison Ave	West of Fair Oaks Blvd	69.5	69.5	0.0	No
17		East of Fair Oaks Blvd	69.6	69.6	0.0	No
18	Kingswood Drive	West of Sunrise Blvd	51.0	51	0.0	No
19		East of Sunrise Blvd	51.1	51.5	0.4	No
20		West of Celine Dr	49.1	49.8	0.7	No
21	Celine Drive	North of Kingswood Dr	38.2	43.1	4.9	No
22		South of Kingswood Dr	49.3	49.3	0.0	No

Source: FHWA-RD-77-108 with inputs from KHA and BAC file data. A complete listing of traffic model inputs is provided in Appendix B.

The data in Table 10 indicate that traffic generated by the project would result in traffic noise level increases ranging from 0.0 to 4.9 dB L_{dn}. Relative to the FICON significance criteria identified in Table 8, the increases would not be considered substantial. As a result, off-site traffic noise impacts related to increases in traffic resulting from the implementation of the project are identified as being ***less than significant***.

Impact 3: Increases in Cumulative (2036) Traffic Noise Levels due to the Project

Cumulative (2036) versus Cumulative (2036) Plus Project traffic noise levels on the local roadway network are shown in Table 11. The following section includes an assessment of predicted traffic noise levels relative to the FICON significance noise criteria identified in Table 8. The Table 11 data are provided in terms of L_{dn} at a standard distance of 100 feet from the centerlines of the project-area roadways. Appendix B contains the FWHA model inputs.

Table 11
Traffic Noise Modeling Results and Project-Related Traffic Noise Increases
Cumulative (2036) Conditions

Segment	Roadway	Segment Description	Traffic Noise Level at 100 feet, dB L_{dn}			Substantial Increase?
			Cumulative	Cumulative + Project	Increase	
1	Fair Oaks Blvd	North of Greenback Ln	65.7	65.7	0.0	No
2		Greenback Ln to Sunrise E Way	66.6	66.6	0.0	No
3		Sunrise E Way to Walnut Hills Way	67.0	67.0	0.0	No
4		Walnut Hills Way to Teecrest Ave	67.1	67.1	0.0	No
5		Teecrest Ave to Madison Ave	67.0	67.0	0.0	No
6		South of Madison Ave	66.3	66.3	0.0	No
7	Sunrise Blvd	North of Kingswood Dr	68.8	68.8	0.0	No
8		South of Kingswood Dr	68.8	68.8	0.0	No
9	Greenback Ln	West of Fair Oaks Blvd	66.8	66.8	0.0	No
10		East of Fair Oaks Blvd	66.7	66.7	0.0	No
11	Sunrise E Way	West of Fair Oaks Blvd	54.2	54.2	0.0	No
12		East of Fair Oaks Blvd	49.7	49.7	0.0	No
13	Walnut Hills Way	East of Fair Oaks Blvd	46.7	46.7	0.0	No
14	Teecrest Ave	West of Fair Oaks Blvd	52.9	52.9	0.0	No
15		East of Fair Oaks Blvd	46.0	46.0	0.0	No
16	Madison Ave	West of Fair Oaks Blvd	70.4	70.4	0.0	No
17		East of Fair Oaks Blvd	71.0	71.0	0.0	No
18	Kingswood Drive	West of Sunrise Blvd	52.9	52.9	0.0	No
19		East of Sunrise Blvd	53.3	53.6	0.3	No
20		West of Celine Dr	50.8	51.3	0.5	No
21	Celine Drive	North of Kingswood Dr	43.0	45.3	2.3	No
22		South of Kingswood Dr	51.0	51.0	0.0	No

Source: FHWA-RD-77-108 with inputs from KHA and BAC file data. A complete listing of traffic model inputs is provided in Appendix B.

The data in Table 11 indicate that traffic generated by the project would result in traffic noise level increases ranging from 0.0 to 2.3 dB L_{dn}. Relative to the FICON significance criteria identified in Table 8, the increases would not be considered substantial. As a result, off-site traffic noise impacts related to increases in traffic resulting from the implementation of the project are identified as being ***less than significant***.

Proposed On-Site Activities Noise Impacts

The noise-producing components associated with the proposed senior apartments consist of on-site traffic circulation, parking lot activities (vehicles arriving and departing, doors opening and closing, etc.), and garbage collection. Where appropriate, project-generated noise levels presented in this section take into consideration the shielding provided by the proposed property line 6-foot tall CMU wall (noise barrier). An assessment of each project-related noise source follows.

Impact 4: On-Site Traffic Circulation Noise

The FHWA Model, discussed in a previous section of this report, was utilized to determine the on-site circulation traffic noise generated by the interior roadways of the project upon the existing residences adjacent to the project site. The outdoor activities of the existing residences are located as close as 30 feet from the centerline of the future interior roadways. According to the project traffic study, the project is expected to generate 22 and 29 trips during the AM and PM peak hours, respectively. Assuming a residential vehicle speed of 25 mph, 29 trips during a worst-case hour (PM peak hour), and a distance of 30 feet from the centerline of the interior roadway, the FHWA Model predicts a traffic noise level of 48 dB L_{eq} at the outdoor activity areas of the nearest existing residences adjacent to the project site. Median (L_{50}) traffic noise levels would be approximately 5 dB less than hourly average noise levels (L_{eq}). Because the adjacent outdoor activity areas would be screened from view by the proposed property line noise barrier, on-site traffic circulation noise levels would be reduced by 5 dB. Therefore, on-site traffic circulation noise levels at the outdoor activity areas of the nearest existing residences would be approximately 38 dB L_{50} after taking into consideration the screening provided by the proposed property line noise barrier.

As shown in Table 3, the City of Citrus Heights Municipal Code exterior noise level standards are graduated depending on the duration of the intruding noise source. Because on-site traffic circulation would occur throughout the course of an hour (i.e., in excess of 30 minutes), the applicable noise standard for on-site circulation would be the median noise level standard. The predicted on-site traffic circulation noise level of 38 dB L_{50} at the nearest residential property lines would satisfy the median noise level standards of 55 dB and 50 dB L_{50} for daytime and nighttime hours, respectively. As a result, noise impacts due to on-site traffic circulation are identified as being ***less than significant***.

Impact 5: Parking Lot Activity Noise

As a means of determining the noise levels due to parking lot activities, BAC utilized noise level data collected at various parking lots in the Sacramento region over the years. That data indicate that a typical Sound Exposure Level (SEL) due to automobile arrivals/departures, including car doors slamming and people conversing is approximately 70 dB, at a distance of 50 feet. The maximum noise level associated with parking lot activity typically did not exceed 65 dB L_{max} at the same reference distance.

To compute hourly average noise levels generated by parking lot activities, the approximate number of hourly operations in any given area and distance to the effective noise center of those

activities is required. The proposed building layout is such that in many instances parking stalls are screened from view by the intervening apartment buildings. However, the southernmost parking area is located adjacent to single-family residential property lines. Because the southernmost parking area is located adjacent to existing residences on three sides, worst-case parking lot noise levels would presumably occur at this location. The hourly average noise level generated by parking lot movements is computed using the following formula:

$$\text{Hourly } L_{eq} = 70 + 10\log(N) - 35.6$$

Where 70 is the mean Sound Exposure Level (SEL) for an automobile parking lot arrival or departure, N is the number of parking lot operations in a given hour, and 35.6 is 10 times the logarithm of the number of seconds in an hour.

The southernmost parking lot contains 29 parking spaces. Therefore, it was conservatively assumed that 29 parking lot movements could occur within the southernmost lot. The center of the parking area is located approximately 40 feet from the residences to the south. At that distance, the computed L_{eq} using the formula provided above is 51 dB L_{eq} at the nearest residences. Median (L_{50}) parking lot noise levels would be approximately 5 dB less than hourly average noise levels (L_{eq}). Because the adjacent outdoor activity areas would be screened from view by the proposed property line noise barrier, parking lot activity noise levels would be reduced by 5 dB. Therefore, parking lot activity noise levels at the outdoor activity areas of the nearest existing residences would be approximately 41 dB L_{50} after taking into consideration the screening provided by the proposed property line noise barrier.

As shown in Table 3, the City of Citrus Heights Municipal Code exterior noise level standards are graduated depending on the duration of the intruding noise source. Because on-site traffic circulation would occur throughout the course of an hour (i.e., in excess of 30 minutes), the applicable noise standard for parking lot activity noise would be the median noise level standard. The predicted parking lot activity noise level of 41 dB L_{50} at the nearest residential property lines would satisfy the median noise level standards of 55 dB and 50 dB L_{50} for daytime and nighttime hours, respectively. As a result, noise impacts due to parking lot operations are identified as being ***less than significant***.

Impact 6: Garbage Collection Noise

As shown on Figure 2, garbage collection is proposed to occur along the northern and western boundaries of the project site. The trash enclosure areas are located approximately 40 feet from the nearest residential property lines. Section 34-93 of the City of Citrus Heights Municipal Code requires that waste disposal vehicles not generate a noise level in excess of 80 dB at a distance of 50 feet from the equipment. For the purpose of this analysis, it was assumed that waste collection vehicles currently operating within the city satisfy the requirements of the Municipal Code. More specifically, it was assumed that the waste disposal vehicles generate a worst-case noise level of 80 dB at 50 feet. At the residential property lines located 40 feet from the trash enclosure areas, predicted maximum garbage collection noise levels would be 82 dB.

Noise generated by garbage collection is a common component of residential, commercial, and professional uses throughout the city. While very short-term increases in ambient noise levels

will occur during the periodic garbage collection activities at the project site, it is important to note that those activities would occur approximately 40 feet from the nearest existing residences, whereas the trash collection area at the apartment complex to the north was identified from Google Earth aerial imagery as being less than 20 feet from the nearest apartments. Trash collection for the existing single-family residences adjacent to the site occurs at the front of the houses, approximately 30 feet from the residences. As a result, routine garbage collection activities currently occurring at the surrounding residences generate higher noise levels at those areas than will result from garbage collection activities at the project site. Therefore, adverse noise impacts at the neighboring apartment complex resulting from garbage collection activities at the project site are identified as being ***less than significant***.

Construction Noise Impacts

Impact 7: Construction Noise

During the construction phases of the proposed project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in typical construction would generate maximum noise levels, as indicated in Table 12, ranging from 55 to 90 dB at a distance of 50 feet.

Table 12
Typical Construction Equipment Noise

Equipment Description	Maximum Noise Level at 50 feet, dBA
Auger drill rig	85
Backhoe	80
Bar bender	80
Boring jack power unit	80
Chain saw	85
Compactor (ground)	80
Compressor (air)	80
Concrete batch plant	83
Concrete mixer truck	85
Concrete pump truck	82
Concrete saw	90
Crane (mobile or stationary)	85
Dozer	85
Dump truck	84
Excavator	85
Flatbed truck	84
Front end loader	80
Generator (25 kilovolt-amperes [kVA] or less)	70
Generator (more than 25 kVA)	82
Grader	85
Hydra break ram	90
Jackhammer	85
Mounted impact hammer (hoe ram)	90
Paver	85
Pickup truck	55
Pneumatic tools	85
Pumps	77
Rock drill	85

Table 12
Typical Construction Equipment Noise

Equipment Description	Maximum Noise Level at 50 feet, dBA
Scraper	85
Soil mix drill rig	80
Tractor	84
Vacuum street sweeper	80
Vibratory concrete mixer	80
Source: Federal Highway Administration 2006.	

The proposed project buildings are located approximately 20 feet from the adjacent existing residential property lines. At this distance, maximum noise levels would be expected to be approximately 63 to 98 dB L_{max}. The proposed project buildings are located approximately 20 feet from the adjacent existing residential property lines. At this distance, maximum noise levels would be expected to be approximately 63 to 98 dB L_{max}. Noise levels in this range would represent a substantial short-term increase over ambient maximum noise levels shown in Tables 2 and 3. As noted in the Regulatory Setting Section of this report, Section 34-88(5) of the Citrus Heights Noise Ordinance exempts noise sources associated with construction provided such activities do not take place between the hours of 8:00 p.m. and 6:00 a.m. on weekdays and Friday commencing at 8:00 p.m. through and including 7:00 a.m. on Saturday, Saturdays commencing at 8:00 p.m. through and including 7:00 a.m. on the next following Sunday, and on each Sunday after the hour of 8:00 p.m. Provided project construction activities do not occur during these hours, construction activities would be exempt and this impact would be considered less than significant.

However, if construction activities are proposed during the hours not exempted by Noise Ordinance Section 34-88(5), noise levels generated by construction activities would likely exceed the maximum noise level standards identified in Table 3 at the nearest residences. As a result, noise impacts associated with construction activities are identified as being ***potentially significant.***

Mitigation for Impact 7: Construction Noise Control Measures

MM-7: To the maximum extent practical, the following measures should be incorporated into the project construction operations:

- Noise-generating construction activities shall not occur within the hours identified in Noise Ordinance Section 34-88(5).
- All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition.
- All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion-powered equipment, where feasible.

- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
- Project area and site access road speed limits shall be established and enforced during the construction period.
- Nearby residences shall be notified of construction schedules so that arrangements can be made, if desired, to limit their exposure to short-term increases in ambient noise levels.

Significance of Impact 7 following Mitigation: *Less than Significant*

Vibration Impacts Associated with Construction Activities

Impact 8: Vibration Generated by Construction Activities

During project construction heavy equipment would be used for grading excavation, paving, and building construction, which would generate localized vibration in the immediate vicinity of the construction. As mentioned previously, the nearest residence is located approximately 25 feet from construction activities which would occur on the project site.

The range of vibration source levels for construction equipment commonly used in similar projects are shown in Table 13. The vibration levels depicted in Table 13 are representative of measurements at a distance of 25 feet from the equipment source.

Table 13
Vibration Source Levels for Construction Equipment

Equipment	Approximate RMS L_v[1] at 25 feet
Vibratory roller	94
Large bulldozer	87
Loaded trucks	86
Jackhammer	79
Small bulldozer	58

Notes:
[1] RMS velocity in decibels (VdB) re 1 micro-inch/second
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual (2018)

Because vibration levels generated by the type of construction equipment which will be required for this project dissipates very rapidly with distance, vibration levels at the nearest residences are expected to be below 70 VdB over the course of project construction activities. Construction-generated vibration levels of less than the 70 VdB RMS at nearby existing receptors would satisfy the strictest Federal Transportation Authority (FTA) groundborne vibration impact criteria of 72 VdB shown in Table 5 (regardless of number of vibration events from a source). Therefore, project construction would not result in the exposure of persons to excessive groundborne vibration levels.

As indicated in Table 4, the measured average vibration levels at the project site were well below the strictest FTA groundborne vibration impact criteria (ranged from 34-47 VdB RMS). Therefore, the project would not result in the exposure of persons to excessive groundborne vibration levels at the project site.

It is our understanding that the development is not proposing equipment that would generate significant vibration levels. Therefore, it is not expected that the proposed uses of the development will experience excessive groundborne vibration.

Because vibration levels due to and upon the proposed project will satisfy the applicable FTA groundborne impact vibration criteria, this impact is considered to be ***less than significant***.

Noise Impacts Upon the Project

On-Site Traffic Noise Impacts

The California Supreme Court issued an opinion in *California Building Industry Association v. Bay Area Air Quality Management District (2015)* holding that CEQA is primarily concerned with the impacts of a project on the environment and generally does not require agencies to analyze the impact of existing conditions on a project's future users or residents. Nevertheless, the City has policies that address existing/future conditions affecting the proposed project, which are discussed in the following section.

Impact 9: Future Exterior Traffic Noise Levels at Project Site

The FHWA Model was used to predict traffic noise levels at the project site. The FHWA Model provides reasonably accurate traffic noise predictions under "ideal" roadway conditions. Ideal conditions are generally considered to be long straight roadway segments with uniform vehicle speeds, a flat roadway surface, good pavement conditions, a statistically large volume of traffic, and an unimpeded view of the roadway from the receiver location. Such conditions appeared to be in effect at this project site. Nonetheless, BAC conducted a calibration of the FHWA Model through site-specific traffic noise level measurements and concurrent traffic counts.

The calibration process was performed at one location on the project site on the morning of February 5, 2019. The measurement was conducted at a height of 5 feet above existing grade to quantify traffic noise levels at the building facades of the proposed residences nearest to Fair Oaks Boulevard. The traffic noise measurements were conducted at measurement site ST-1, as shown on Figure 1. Detailed results of this procedure are provided in Appendix G.

As indicated in Appendix G, the FHWA Model was found to reasonably predict traffic noise levels. Predicted traffic noise levels by the model were within 0.3 dB of measured traffic noise levels. As a result, no calibration adjustment to the FHWA Model for the prediction of future traffic noise levels would be warranted.

The FHWA Model was used with future traffic data to predict future exterior traffic noise levels at the project site. Future average daily traffic volumes for Fair Oaks Boulevard were obtained from the traffic impact study conducted for the project by KHA. The predicted future traffic noise levels

at the project site are summarized in Table 14. Detailed FHWA Model inputs and results are provided in Appendix H.

Table 14
Predicted Future Exterior Traffic Noise Levels[1]

Roadway	Location[2]	Distance from Centerline (feet)[3]	Offset (dB)[4]	L_{dn} (dB)
Fair Oaks Boulevard	Recreational Area	450	-5	52
	First-floor facades	100	0	67
	Upper-floor facades	100	+3	70

Notes
1 A complete listing of FHWA Model inputs and results are provided in Appendix H.
2 Common outdoor recreational area identified on Figure 2.
3 Distances measured from indicated location to the centerline of Fair Oaks Boulevard.
4 A +3 dB offset was applied to the upper-floor facades due to reduced ground absorption at elevated floor levels. Because the outdoor activity area (recreational area) will be partially screened from view by the intervening project buildings, a conservative offset of -5 dB was applied.

Source: Bollard Acoustical Consultants, Inc.

Given the shielding provided by intervening buildings and setback from the roadway, future Fair Oaks Boulevard traffic noise levels at proposed common outdoor activity area of the project are predicted to be 52 dB L_{dn}. The City of Citrus Heights General Plan sets forth an exterior noise level standard of 65 dB L_{dn} for the common outdoor activity areas of multi-family developments. The predicted exterior noise level of 51 dB L_{dn} would satisfy the City's 65 dB L_{dn} exterior noise level standard. Because future traffic noise levels at the project site would satisfy the applicable City of Citrus Heights criteria, this impact is considered to be ***less than significant***.

Impact 10: Future Interior Traffic Noise Levels at Project Site

The Table 14 data indicate that at the nearest proposed building facades, future Fair Oaks Boulevard traffic noise levels are predicted to be 67 dB and 70 dB L_{dn} at first-floor and upper-floor facades, respectively. Standard residential construction (wood or stucco siding, Sound Transmission Class (STC) 27 windows, door weather-stripping, exterior wall insulation, composition plywood roof) typically results in a minimum exterior-to-interior noise level reduction (NLR) of 25 dB with windows closed, and approximately 15 dB with windows open. Therefore, at the buildings proposed nearest to Fair Oaks Boulevard, future Fair Oaks Boulevard traffic noise levels are predicted to be 42 dB and 45 dB L_{dn} within the interior of first-floor and upper-floor living spaces, respectively. The City of Citrus Heights General Plan sets forth an interior noise level standard of 45 dB L_{dn} for residential developments. Therefore, the predicted interior noise levels of 42-45 dB L_{dn} would satisfy the City's 45 dB L_{dn} interior noise level standard and no further consideration of noise mitigation would be warranted relative to the Day-Night Average (L_{dn}) noise level standard.

Noise level measurements conducted on the project site on February 6, 2019 indicate that average hourly maximum noise levels during the 24-hour survey period were 74 dB L_{max} at a position 5 feet above ground, 100 feet from the centerline of Fair Oaks Boulevard. Although average daily traffic volumes on the roadway are expected to increase in the future resulting in

elevated day-night average noise levels at the project site relative to existing conditions, individual maximum noise levels are not expected to vary significantly relative to existing maximum levels.

According to the project site plan, the buildings nearest to Fair Oaks Boulevard are setback approximately 100 feet from the centerline of the roadway. As mentioned previously, due to reduced ground absorption at elevated positions, average hourly maximum noise levels at the upper-floor facades of the residences would be 3 dB higher, or 77 dB L_{max}. After consideration of the 25 dB NLR provided by standard residential building construction, maximum noise levels due to Fair Oaks Boulevard traffic within the nearest first-floor and upper-floor living spaces are predicted to be 49 dB and 52 dB L_{max}, respectively.

For new residential developments, the City of Citrus Heights sets forth an interior maximum traffic noise level standard of 50 dB and 55 dB L_{max} within bedrooms and within all other habitable rooms, respectively. Within the buildings nearest to Fair Oaks Boulevard, maximum traffic noise levels are predicted to be 49 dB and 52 dB L_{max} within first-floor and upper-floor living spaces. As a result, noise impacts associated with maximum traffic noise levels within the nearest buildings are identified as being ***potentially significant.***

Mitigation for Impact 10: Building Improvement Measures

MM-10: The following measures should be incorporated into the building façade construction:

- For the two buildings located nearest to Fair Oaks Boulevard, the north-, east-, and south-facing building facades should maintain minimum window and door assembly STC ratings of 32. Figure 2 illustrates the facades requiring improved building construction.
- Standard residential construction practices (wood or stucco siding, STC-27 windows, door weather-stripping, exterior wall insulation, composition plywood roof) would be adequate for the remainder of the development.
- Mechanical ventilation (air conditioning) should be provided for all residences in this development to allow the occupants to close doors and windows as desired to achieve compliance with the applicable interior noise level criteria.

Significance of Impact 10 following Mitigation: *Less than Significant*

This concludes BAC's noise and vibration assessment for the proposed Fair Oaks Senior Apartments in Citrus Heights, California. Please contact Jonathan Lopez at (916) 663-0500 or jonl@bacnoise.com with any questions regarding this assessment.

Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.

Appendix B-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-023 Fair Oaks Senior Apartments
Description: Baseline (2019)
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Fair Oaks Blvd	North of Greenback Ln	13,650	80		20	2	1	45	100	
2		Greenback Ln to Sunrise E Way	15,160	80		20	2	1	45	100	
3		Sunrise E Way to Walnut Hills Way	15,200	80		20	2	1	45	100	
4		Walnut Hills Way to Teecrest Ave	15,190	80		20	2	1	45	100	
5		Teecrest Ave to Madison Ave	15,080	80		20	2	1	45	100	
6		South of Madison Ave	12,490	80		20	2	1	45	100	
7	Sunrise Blvd	North of Kingswood Dr	21,220	80		20	2	1	45	100	
8		South of Kingswood Dr	21,590	80		20	2	1	45	100	
9	Greenback Ln	West of Fair Oaks Blvd	24,490	80		20	2	1	40	100	
10		East of Fair Oaks Blvd	26,480	80		20	2	1	40	100	
11	Sunrise E Way	West of Fair Oaks Blvd	1,670	80		20	2	1	25	100	
12		East of Fair Oaks Blvd	730	80		20	2	1	25	100	
13	Walnut Hills Way	East of Fair Oaks Blvd	270	80		20	2	1	25	100	
14	Teecrest Ave	West of Fair Oaks Blvd	1,710	80		20	2	1	25	100	
15		East of Fair Oaks Blvd	580	80		20	2	1	25	100	
16	Madison Ave	West of Fair Oaks Blvd	27,920	80		20	2	1	50	100	
17		East of Fair Oaks Blvd	26,870	80		20	2	1	50	100	
18	Kingswood Drive	West of Sunrise Blvd	1,440	80		20	2	1	25	100	
19		East of Sunrise Blvd	1,410	80		20	2	1	25	100	
20		West of Celine Dr	980	80		20	2	1	25	100	
21	Celine Drive	North of Kingswood Dr	10	80		20	2	1	25	100	
22		South of Kingswood Dr	990	80		20	2	1	25	100	

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Appendix B-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-023 Fair Oaks Senior Apartments
Description: Baseline (2019) Plus Proposed Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Fair Oaks Blvd	North of Greenback Ln	13,650	80		20	2	1	45	100	
2		Greenback Ln to Sunrise E Way	15,217	80		20	2	1	45	100	
3		Sunrise E Way to Walnut Hills Way	15,295	80		20	2	1	45	100	
4		Walnut Hills Way to Teecrest Ave	15,304	80		20	2	1	45	100	
5		Teecrest Ave to Madison Ave	15,194	80		20	2	1	45	100	
6		South of Madison Ave	12,509	80		20	2	1	45	100	
7	Sunrise Blvd	North of Kingswood Dr	21,372	80		20	2	1	45	100	
8		South of Kingswood Dr	21,647	80		20	2	1	45	100	
9	Greenback Ln	West of Fair Oaks Blvd	24,547	80		20	2	1	40	100	
10		East of Fair Oaks Blvd	26,480	80		20	2	1	40	100	
11	Sunrise E Way	West of Fair Oaks Blvd	1,670	80		20	2	1	25	100	
12		East of Fair Oaks Blvd	730	80		20	2	1	25	100	
13	Walnut Hills Way	East of Fair Oaks Blvd	270	80		20	2	1	25	100	
14	Teecrest Ave	West of Fair Oaks Blvd	1,710	80		20	2	1	25	100	
15		East of Fair Oaks Blvd	580	80		20	2	1	25	100	
16	Madison Ave	West of Fair Oaks Blvd	28,015	80		20	2	1	50	100	
17		East of Fair Oaks Blvd	26,889	80		20	2	1	50	100	
18	Kingswood Drive	West of Sunrise Blvd	1,440	80		20	2	1	25	100	
19		East of Sunrise Blvd	1,619	80		20	2	1	25	100	
20		West of Celine Dr	1,189	80		20	2	1	25	100	
21	Celine Drive	North of Kingswood Dr	219	80		20	2	1	25	100	
22		South of Kingswood Dr	990	80		20	2	1	25	100	

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Appendix B-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-023 Fair Oaks Senior Apartments
Description: Baseline (2019) Plus Approved Projects
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Fair Oaks Blvd	North of Greenback Ln	14,530	80		20	2	1	45	100	
2		Greenback Ln to Sunrise E Way	16,670	80		20	2	1	45	100	
3		Sunrise E Way to Walnut Hills Way	17,350	80		20	2	1	45	100	
4		Walnut Hills Way to Teecrest Ave	17,440	80		20	2	1	45	100	
5		Teecrest Ave to Madison Ave	17,290	80		20	2	1	45	100	
6		South of Madison Ave	14,410	80		20	2	1	45	100	
7	Sunrise Blvd	North of Kingswood Dr	24,900	80		20	2	1	45	100	
8		South of Kingswood Dr	25,300	80		20	2	1	45	100	
9	Greenback Ln	West of Fair Oaks Blvd	25,640	80		20	2	1	40	100	
10		East of Fair Oaks Blvd	26,840	80		20	2	1	40	100	
11	Sunrise E Way	West of Fair Oaks Blvd	2,330	80		20	2	1	25	100	
12		East of Fair Oaks Blvd	940	80		20	2	1	25	100	
13	Walnut Hills Way	East of Fair Oaks Blvd	400	80		20	2	1	25	100	
14	Teecrest Ave	West of Fair Oaks Blvd	2,070	80		20	2	1	25	100	
15		East of Fair Oaks Blvd	630	80		20	2	1	25	100	
16	Madison Ave	West of Fair Oaks Blvd	30,750	80		20	2	1	50	100	
17		East of Fair Oaks Blvd	31,680	80		20	2	1	50	100	
18	Kingswood Drive	West of Sunrise Blvd	1,870	80		20	2	1	25	100	
19		East of Sunrise Blvd	1,930	80		20	2	1	25	100	
20		West of Celine Dr	1,220	80		20	2	1	25	100	
21	Celine Drive	North of Kingswood Dr	100	80		20	2	1	25	100	
22		South of Kingswood Dr	1,260	80		20	2	1	25	100	

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Appendix B-4

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-023 Fair Oaks Senior Apartments
Description: Baseline (2019) Plus Approved Projects Plus Proposed Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Fair Oaks Blvd	North of Greenback Ln	14,530	80		20	2	1	45	100	
2		Greenback Ln to Sunrise E Way	16,727	80		20	2	1	45	100	
3		Sunrise E Way to Walnut Hills Way	17,445	80		20	2	1	45	100	
4		Walnut Hills Way to Teecrest Ave	17,554	80		20	2	1	45	100	
5		Teecrest Ave to Madison Ave	17,404	80		20	2	1	45	100	
6		South of Madison Ave	14,429	80		20	2	1	45	100	
7	Sunrise Blvd	North of Kingswood Dr	25,052	80		20	2	1	45	100	
8		South of Kingswood Dr	25,357	80		20	2	1	45	100	
9	Greenback Ln	West of Fair Oaks Blvd	25,697	80		20	2	1	40	100	
10		East of Fair Oaks Blvd	26,840	80		20	2	1	40	100	
11	Sunrise E Way	West of Fair Oaks Blvd	2,330	80		20	2	1	25	100	
12		East of Fair Oaks Blvd	940	80		20	2	1	25	100	
13	Walnut Hills Way	East of Fair Oaks Blvd	400	80		20	2	1	25	100	
14	Teecrest Ave	West of Fair Oaks Blvd	2,070	80		20	2	1	25	100	
15		East of Fair Oaks Blvd	630	80		20	2	1	25	100	
16	Madison Ave	West of Fair Oaks Blvd	30,845	80		20	2	1	50	100	
17		East of Fair Oaks Blvd	31,699	80		20	2	1	50	100	
18	Kingswood Drive	West of Sunrise Blvd	1,870	80		20	2	1	25	100	
19		East of Sunrise Blvd	2,139	80		20	2	1	25	100	
20		West of Celine Dr	1,429	80		20	2	1	25	100	
21	Celine Drive	North of Kingswood Dr	309	80		20	2	1	25	100	
22		South of Kingswood Dr	1,260	80		20	2	1	25	100	

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Appendix B-5

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-023 Fair Oaks Senior Apartments
Description: Cumulative (2036)
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Fair Oaks Blvd	North of Greenback Ln	16,600	80		20	2	1	45	100	
2		Greenback Ln to Sunrise E Way	20,300	80		20	2	1	45	100	
3		Sunrise E Way to Walnut Hills Way	22,500	80		20	2	1	45	100	
4		Walnut Hills Way to Teecrest Ave	22,800	80		20	2	1	45	100	
5		Teecrest Ave to Madison Ave	22,500	80		20	2	1	45	100	
6		South of Madison Ave	19,000	80		20	2	1	45	100	
7	Sunrise Blvd	North of Kingswood Dr	33,700	80		20	2	1	45	100	
8		South of Kingswood Dr	34,200	80		20	2	1	45	100	
9	Greenback Ln	West of Fair Oaks Blvd	28,400	80		20	2	1	40	100	
10		East of Fair Oaks Blvd	27,700	80		20	2	1	40	100	
11	Sunrise E Way	West of Fair Oaks Blvd	3,900	80		20	2	1	25	100	
12		East of Fair Oaks Blvd	1,400	80		20	2	1	25	100	
13	Walnut Hills Way	East of Fair Oaks Blvd	700	80		20	2	1	25	100	
14	Teecrest Ave	West of Fair Oaks Blvd	2,900	80		20	2	1	25	100	
15		East of Fair Oaks Blvd	600	80		20	2	1	25	100	
16	Madison Ave	West of Fair Oaks Blvd	37,500	80		20	2	1	50	100	
17		East of Fair Oaks Blvd	43,200	80		20	2	1	50	100	
18	Kingswood Drive	West of Sunrise Blvd	2,900	80		20	2	1	25	100	
19		East of Sunrise Blvd	3,200	80		20	2	1	25	100	
20		West of Celine Dr	1,800	80		20	2	1	25	100	
21	Celine Drive	North of Kingswood Dr	300	80		20	2	1	25	100	
22		South of Kingswood Dr	1,900	80		20	2	1	25	100	

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Appendix B-6

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-023 Fair Oaks Senior Apartments
Description: Cumulative (2036) Plus Proposed Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Fair Oaks Blvd	North of Greenback Ln	16,600	80		20	2	1	45	100	
2		Greenback Ln to Sunrise E Way	20,357	80		20	2	1	45	100	
3		Sunrise E Way to Walnut Hills Way	22,595	80		20	2	1	45	100	
4		Walnut Hills Way to Teecrest Ave	22,914	80		20	2	1	45	100	
5		Teecrest Ave to Madison Ave	22,614	80		20	2	1	45	100	
6		South of Madison Ave	19,019	80		20	2	1	45	100	
7	Sunrise Blvd	North of Kingswood Dr	33,852	80		20	2	1	45	100	
8		South of Kingswood Dr	34,257	80		20	2	1	45	100	
9	Greenback Ln	West of Fair Oaks Blvd	28,457	80		20	2	1	40	100	
10		East of Fair Oaks Blvd	27,700	80		20	2	1	40	100	
11	Sunrise E Way	West of Fair Oaks Blvd	3,900	80		20	2	1	25	100	
12		East of Fair Oaks Blvd	1,400	80		20	2	1	25	100	
13	Walnut Hills Way	East of Fair Oaks Blvd	700	80		20	2	1	25	100	
14	Teecrest Ave	West of Fair Oaks Blvd	2,900	80		20	2	1	25	100	
15		East of Fair Oaks Blvd	600	80		20	2	1	25	100	
16	Madison Ave	West of Fair Oaks Blvd	37,595	80		20	2	1	50	100	
17		East of Fair Oaks Blvd	43,219	80		20	2	1	50	100	
18	Kingswood Drive	West of Sunrise Blvd	2,900	80		20	2	1	25	100	
19		East of Sunrise Blvd	3,409	80		20	2	1	25	100	
20		West of Celine Dr	2,009	80		20	2	1	25	100	
21	Celine Drive	North of Kingswood Dr	509	80		20	2	1	25	100	
22		South of Kingswood Dr	1,900	80		20	2	1	25	100	

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Legend

- A LT-1: Facing southeast (38°40'15.69"N 121°15'45.15"W)
- B LT-1: Facing north (38°40'15.69"N 121°15'45.15"W)
- C ST-1 & V-1: Facing northwest (38°40'15.84"N 121°15'45.15"W)
- D ST-2 & V-2: Facing west (38°40'12.21"N 121°15'47.87"W)

Note: Long-term monitoring completed on February 6, 2019. Short-term monitoring completed on April 10, 2019.

Fair Oaks Senior Apartments

Citrus Heights, California

Photographs of Noise and Vibration Survey Locations

Appendix C-1

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Legend

- A ST-3 & V-3: Facing southwest (38°40'13.55"N 121°15'49.65"W)
- B ST-3 & V-3: Facing west (38°40'13.55"N 121°15'49.65"W)
- C ST-4 & V-4: Facing east (38°40'15.04"N 121°15'52.59"W)
- D ST-4 & V-4: Facing east (38°40'15.04"N 121°15'52.59"W)

Note: Short-term monitoring completed on April 10, 2019.

Fair Oaks Senior Apartments

Citrus Heights, California

Photographs of Noise and Vibration Survey Locations

Appendix C-2

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Appendix D
Ambient Noise Monitoring Results - LT-1
Fair Oaks Senior Apartments - Citrus Heights, California
Wednesday, February 06, 2019

Hour	Leq	Lmax	L50	L90
12:00 AM	52	68	42	39
1:00 AM	50	69	41	37
2:00 AM	53	76	40	37
3:00 AM	50	69	40	38
4:00 AM	54	68	45	39
5:00 AM	59	73	54	45
6:00 AM	63	75	61	52
7:00 AM	66	75	64	56
8:00 AM	65	77	64	57
9:00 AM	63	75	61	53
10:00 AM	63	77	62	54
11:00 AM	63	80	62	54
12:00 PM	63	74	61	53
1:00 PM	62	73	61	52
2:00 PM	63	79	62	53
3:00 PM	64	74	63	56
4:00 PM	64	73	63	56
5:00 PM	65	78	64	58
6:00 PM	65	88	63	56
7:00 PM	62	79	61	52
8:00 PM	62	75	60	52
9:00 PM	60	69	58	49
10:00 PM	58	69	54	46
11:00 PM	56	67	49	43

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	66	60	63	63	50	57
Lmax (Maximum)	88	69	77	76	67	70
L50 (Median)	64	58	62	61	40	47
L90 (Background)	58	49	54	52	37	42

Computed Ldn, dB	65
% Daytime Energy	87%
% Nighttime Energy	13%

GPS Coordinates	38°40'15.69"N
	121°15'45.15"W

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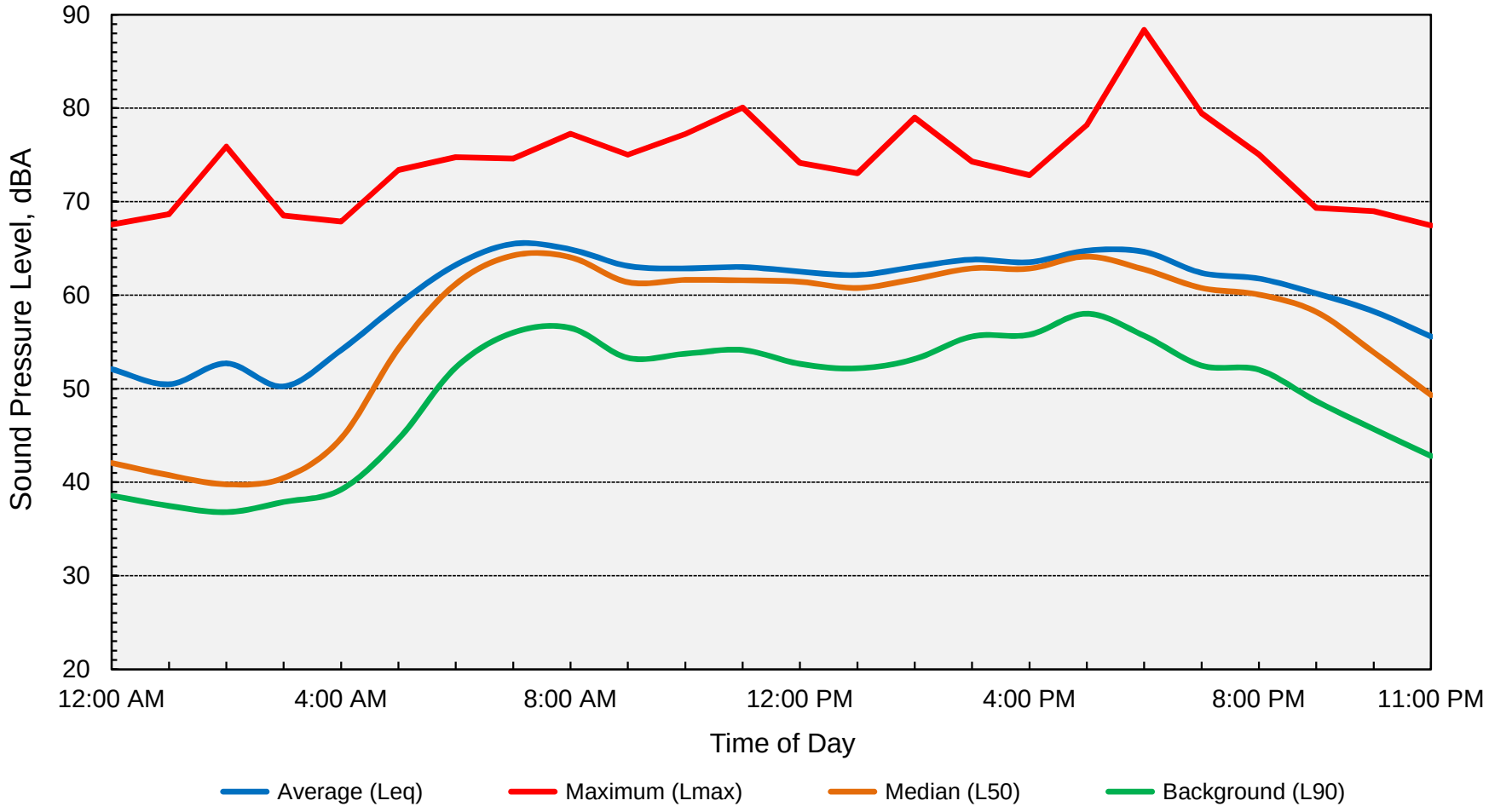
Appendix E
Ambient Noise Monitoring Results - LT-1
Fair Oaks Senior Apartments - Citrus Heights, California
Wednesday, February 06, 2019



Computed Ldn = 65 dB

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Appendix F – City of Citrus Heights Noise Ordinance

ARTICLE III. - NOISE CONTROL[3]

Footnotes:

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Editor's note— Ord. No. 2015-011, § 1, adopted January 14, 2016, repealed the former article III, §§ 34-81—34-104, and enacted a new article III as set out herein. The former article III pertained to similar subject matter and derived from Ord. No. 97-01, adopted January 2, 1997; Ord. No. 97-13, adopted March 26, 1997 and Ord. No. 97-17, adopted September 24, 1997.

Sec. 34-81. - Findings.

The city council finds:

(1) Excessive, unnecessary or offensive noise within the city is detrimental to the public health, safety, welfare and the peace and quiet of the inhabitants of the city and therefore is declared a public nuisance;

(2) Every person in the city is entitled to live in an environment free from excessive, unnecessary or offensive noise levels; and

(3) The establishment of maximum permissible noise levels will further the public health, safety, welfare and peace and quiet of city inhabitants.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-82. - Declaration of policy.

It is declared to be the policy and purpose of this article to assess complaints of noises alleged to exceed the ambient noise levels. Further, it is declared to be the policy to contain sound levels in the city at their present levels with the ultimate goal of reducing such levels, when and where feasible and without causing undue burdens, to meet the noise standards set forth in this article.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-83. - Liberal construction.

This article shall be liberally construed to effectuate its purposes.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-84. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Acoustic specialist means a person or persons trained in acoustic sampling, qualified to measure sound levels in A-weighted and C-weighted networks and one-third octave band frequencies.

Ambient noise level means the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

A-weighting means the standard A-weighted frequency response of a sound level meter, which de-emphasizes low and high frequencies of sound in a manner similar to the human ear for moderate sounds.

C-weighting means the standard C-weighted frequency response of a sound level meter, which de-emphasizes high frequencies of sound in a manner similar to the human ear for relatively loud sounds.

Cumulative period means an additive period of time composed of individual time segments which may be continuous or interrupted.

Decibel and *dB* mean a unit which denotes the ratio between two quantities which are proportional to power; the number of decibels corresponding to the ratio of two amounts of power is ten times the logarithm to the base of ten of this ratio.

Emergency work means the use of any machinery, equipment, vehicle, human power or other activity in an effort to protect, maintain, provide or restore safe conditions in the community or for citizenry, or work by private or public utilities when restoring utility service.

Equivalent hourly sound level ("Leq") means the sound level corresponding to a steady state A-weighted sound level containing the same total energy as the actual time-varying sound level over a one-hour period.

Hertz means a unit of measurement of frequency, numerically equal to cycles per second.

Impulsive noise means a noise characterized by brief excursions of sound pressures the peak levels of which are very much greater than the ambient noise level, such as might be produced by the impact of a piledriver, punchpress or a drop hammer, typically with one second or less duration.

Low frequency noise means a noise which occurs in the frequency range of 160 Hertz or less.

Noise level means the sound pressure level in decibels obtained by using a sound level meter using A-weighting and C-weighting networks, or one-third octave band frequency at slow response (or fast response when required by this article for the measurement of impulsive sounds or low frequency noise) with a reference pressure of 20 micropascals. The unit of measurement shall be designated as dBA or dBC, as appropriate. The meter setting for slow or fast response shall be noted.

One-third octave band means a band of frequencies, in Hertz, which is one-third of an octave wide, as defined by the current version of the American National Standards Institute (ANSI) Standard S1.11. Examples of one-third octave band center frequencies in the range of audible sound include 20, 25, 31.5, 40 and 63 Hertz. Describing sound pressure levels in one-third octave bands provides information as to the tone or pitch, of noise (low frequency versus high frequency), as well as the amplitude of the sound.

Residential property means a parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels.

Simple tone noise and *pure tone noise* mean a noise characterized by the presence of a predominant frequency such as might be produced by whistle or hum.

Sound level meter means an instrument meeting ANSI Standard S1.4-1983 for type 1 or type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

Sound pressure level means a sound pressure level of a sound, in decibels, as defined in ANSI Standard S1.4-1983; that is, 20 times the logarithm to the base ten of the ratio of the pressure of the sound to a reference pressure, which reference pressure shall be explicitly stated.

Zone means any of the zones specified in the zoning code of the city, as such zones are presently identified therein and as they may be subsequently modified or altered.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-85. - Sound level measurement generally.

(a) Any noise level measurements made pursuant to this article shall be performed using a sound level meter as defined in section 34-84. The sound level meter shall be set to A-weighting at slow meter response, except as provided in this article.

(b) The location selected for measuring exterior noise levels shall be at a point at least one foot inside the property line of the affected residential property. Where feasible, the microphone shall be at a height of three to five feet above ground level and shall be at least four feet from walls or similar reflecting surfaces. For interior noise measurements, the windows shall be in normal seasonal configuration, and the measurement shall be made at a point at least four feet from the wall, ceiling or floor nearest the affected occupied area.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-86. - Exterior noise standards.

(a) The following noise standards, unless otherwise specifically indicated in this article, shall apply to all properties within a designated noise area, measured pursuant to section 34-85(b):

Noise Area	City Zoning Districts	Time Period	Exterior Noise Standard
1	RD-1, RD-2, RD-3, RD-4, RD-5, R-7, RD-10, R15, RD-20, R-25, RD-30, MH	7:00 a.m. to 10:00 p.m. (Daytime) 10:00 p.m. to 7:00 a.m. (Nighttime)	55 dBA (Leq) 50 dBA (Leq)

b) It is unlawful for any person at any location within the city to create any noise which causes the noise levels on an affected property, when measured in the designated noise area pursuant to section 34-85(b), to exceed, for the duration of time set forth following, the specified exterior noise standards in any one hour by:

Cumulative Duration of the Intrusive Sound	Allowance Decibels

(1) Cumulative period of 30 minutes per hour 0

(2) Cumulative period of 15 minutes per hour ..... +5

(3) Cumulative period of five minutes per hour ..... +10

(4) Cumulative period of one minute per hour ..... +15

(5) Level not to be exceeded for any time per hour ..... +20

(c) Each of the noise limits specified in subsection (b) of this section shall be reduced by five dBA for impulsive or simple tone noises or for noises consisting of speech or music.

(d) If the ambient noise level exceeds that permitted by any of the first four noise limit categories specified in subsection (b) of this section, the allowable noise limit shall be increased in five-dBA

increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category.

(e) It is unlawful for any person at any location within the city to create low-frequency noise or impulsive noise which causes the noise level on an affected residential property to exceed the noise level standards as indicated below. Exterior noise level shall be measured pursuant to the requirements set forth in section 34-85(b).

Sound Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Leq, A weighting dBA	50	45
Leq, C weighting dBC	75	70
One-third octave band	10 dB increase in any one-third octave band	

(1) The noise level measurements conducted under this subsection (e) shall be conducted with the sound level meter set to fast response.

(2) If separation of low frequency noise or impulsive noise from the background ambient noise can be determined with the sound level meter set to A-weighting, noise levels from the low frequency noise shall not exceed an Leq of 50 dBA daytime and 45 dBA nighttime for any one minute period.

(3) If separation of low frequency noise or impulsive noise from the background ambient noise cannot be determined with the sound level meter on A-weighting, the meter shall be switched to C-weighting to emphasize the low frequency noise. If separation of low frequency noise or impulsive noise from background ambient noise can be determined with the meter set to the C-weighting, the noise level from the low frequency noise or impulsive noise shall not exceed an Leq of 75 dBC daytime and 70 dBC nighttime for any one minute period.

(4) If existing background ambient noise levels are higher than standards identified in the table above, then the maximum sound levels due to amplified sound shall not exceed the background sound levels by more than three dB for A-weighted measurements and five dB for C-weighted measurements.

(5) If separation of low frequency noise or impulsive noise from the background ambient noise cannot be determined with the sound level meter set to either A or C weighting, and low frequency noises or impulsive noise are clearly audible to the acoustics specialist, a sound level measurement shall be taken using one-third octave band frequencies. A 10 dB increase in any one-third octave band due to the amplified noise shall be considered a violation of this article.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-87. - Interior noise standards.

(a) In any apartment, condominium, townhouse, duplex or multiple-dwelling unit, it is unlawful for any person to create any noise from inside his or her unit that causes the noise level, when measured in a neighboring unit during the periods 10:00 p.m. to 7:00 a.m., to exceed the following:

(1) Forty-five dBA for a cumulative period of more than five minutes in any hour.

(2) Fifty dBA for a cumulative period of more than one minute in any hour.

(3) Fifty-five dBA for any period of time.

(b) If the ambient noise level exceeds that permitted by any of the noise level categories specified in subsection (a) of this section, the allowable noise limit shall be increased in five-dBA increments in each category to encompass the ambient noise level.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-88. - Exemptions.

The following activities shall be exempted from this article:

(1) School bands, school athletic and school entertainment events.

(2) Outdoor gatherings, public dances, shows and sporting and entertainment events, provided the events are conducted pursuant to a license or permit issued by the city.

(3) Activities conducted on parks, public playgrounds and school grounds, provided such parks, playgrounds and school grounds are owned and operated by a public entity or private school.

(4) Any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work.

(5) Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided the activities do not take place between the hours of 8:00 p.m. and 6:00 a.m. on weekdays and Friday commencing at 8:00 p.m. through and including 7:00 a.m. on Saturday, Saturdays commencing at 8:00 p.m. through and including 7:00 a.m. on the next following Sunday, and on each Sunday after the hour of 8:00 p.m. However, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 8:00 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

(6) Noise sources associated with agricultural operations, provided such operations do not take place between the hours of 8:00 p.m. and 6:00 a.m.

(7) Any mechanical device, apparatus or equipment which is utilized for the protection or salvage of agricultural crops during periods of adverse weather conditions or when the use of mobile noise sources is necessary for pest control.

(8) Noise sources associated with maintenance of residential area property, provided the activities take place between the hours of 6:00 a.m. and 8:00 p.m. on any day except Saturday or Sunday, or between the hours of 7:00 a.m. and 8:00 p.m. on Saturday or Sunday.

(9) Any activity, to the extent provisions of 42 USC 65 and Public Utilities Code §§ 21661—21669.6 and 21670—21679.5 preempt local control of noise regulations and land use regulations related to noise control of airports and their surrounding geographical areas; any noise source associated with the construction, development, manufacture, maintenance, testing or operation of any aircraft engine or of any weapons system or subsystems which are owned, operated or under the jurisdiction of the United States; or any other activity to the extent regulation thereof has been preempted by state or federal law or regulation.

(10) Any noise sources associated with the maintenance and operation of aircraft or airports which are owned or operated by the United States.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-89. - Transition period for preexisting industrial or commercial facilities.

(a) The following words, terms and phrases, when used in this section, shall have the meanings ascribed to them in this subsection, except where the context clearly indicates a different meaning:

Commercial facility means any building, structure, premises or portion thereof used for wholesale or retail commercial purposes.

Industrial facility means any building, structure, factory, plant, premises or portion thereof used for manufacturing or industrial purposes.

(b) Any industrial or commercial facility shall be subject to all applicable requirements of this article.

(c) If any facility which is not in compliance by the end of the one-year period applies for a variance pursuant to section 34-100, in deciding whether to grant a variance, the hearing board shall take into account the extent to which the applicant has endeavored to reduce noise during the one-year period to meet the standards specified in this article.

(d) This section applies only to a commercial or industrial facility which was already in existence or for which the work of improvement has commenced prior to July 1, 1976.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-90. - Schools, hospitals and churches.

It is unlawful for any person to create any noise which causes the noise level at any school, hospital or church, while the school, hospital or church is in use, to exceed the noise standards specified in section 34-86 or to create any noise which unreasonably interferes with the use of such institution or unreasonably disturbs or annoys patients in the hospital. In any disputed case, interfering noise which is ten dBA or more, greater than the ambient noise level at the building, shall be deemed excessive and unlawful.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-91. - Machinery, equipment, fans and air conditioning.

(a) It is unlawful for any person to operate any mechanical equipment, pump, fan, air conditioning apparatus, stationary pumps, stationary cooling towers, stationary compressors, similar mechanical devices, or any combination thereof installed after July 1, 1976 in any manner so as to create any noise which would cause the maximum noise level to exceed the following:

(1) Sixty dBA at any point at least one foot inside the property line of the affected residential property and three to five feet above ground level.

(2) Fifty-five dBA in the center of a neighboring patio three to five feet above ground level.

(3) Fifty-five dBA outside of the neighboring living area window nearest the equipment location. Measurements shall be taken with the microphone not more than three feet from the window opening but at least three feet from any other surface.

(b) Equipment installed five years after July 1, 1976, must comply with a maximum limit of 55 dBA at any point at least one foot inside the property line of the affected residential property and three to five feet above ground level.

(c) Equipment installed before December 17, 1970, must comply with a limit of 65 dBA maximum in sound level at any point at least one foot inside the affected property line and three to five feet above ground level by January 1, 1977. Equipment installed between December 16, 1970, and July 1, 1976, must comply with a limit of 65 dBA maximum sound level at any point at least one foot inside the property line of the affected residential property and three to five feet above ground level.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-92. - Off-road vehicles.

It is unlawful for any person to operate any motorcycle or recreational off-road vehicle within the city in such a manner that the noise level exceeds the exterior noise standards specified in section 34-86.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-93. - Waste disposal vehicles.

(a) It is unlawful for any person authorized to engage in waste disposal service or garbage collection to operate any truck-mounted waste or garbage loading and/or composting equipment or similar mechanical device in any manner so as to create any noise exceeding the following level, when measured at a distance of 50 feet from the equipment in an open area:

(1) New equipment purchased or leased on or after a date six months from July 1, 1976, shall not exceed a noise level of 80 dBA.

(2) New equipment purchased or leased on or after 42 months from July 1, 1976, shall not exceed a noise level of 75 dBA.

(3) Present equipment shall not exceed a noise level of 80 dBA on or after five years from July 1, 1976.

(b) This section shall not abridge or conflict with the powers of the state over motor vehicle control.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-94. - Radios, tape players on publicly owned property.

(a) As used in this section, the phrase "a person of normal hearing sensitivity" means a person who has a hearing threshold level of between zero decibels and 25 decibels HL averaged over the frequencies 500, 1,000 and 2,000 hertz.

(b) Notwithstanding any other section of this Code and in addition thereto, it is unlawful for any person to permit or cause any noise, sound, music or program to be emitted from any radio, tape player, tape recorder, record player or television outdoors on or in any publicly owned property, park or place when such noise, sound, music or program is audible to a person of normal hearing sensitivity 100 feet from the radio, tape player, tape recorder, record player or television.

(c) Notwithstanding any other section of this Code, any person violating this section shall be guilty of an infraction and upon conviction thereof, is punishable as provided in section 1-21.

(d) Notwithstanding sections 46-1 and 46-2 or any other section of this Code, no citation or notice to appear shall be issued or criminal complaint shall be filed for a violation of this section unless the offending party is first given a verbal or written notification of violation by any peace officer, public officer, park ranger or other person charged with enforcing this section and the offending party given an opportunity to correct the violation.

(e) This section shall not apply to broadcasting from any aircraft, vehicle or stationary sound amplifying equipment as defined and regulated in chapter 5.56 of the Sacramento County Code; the use of radios, tape players, tape recorders, record players or televisions in the course of an assembly or festival for which a license has been issued pursuant to section 9.36.072 of the Sacramento County Code; a parade for which a permit has been issued pursuant to section 10.32.020 of the Sacramento County Code; or any other activity, assembly or function for which a permit or license has been duly issued pursuant to any section of this Code or the Sacramento County Code.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-95. - General noise regulations.

(a) Notwithstanding any other section of this article and in addition thereto, it is unlawful for any person to willfully make or continue or cause to be made or continued any loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

(b) The standards which shall be considered in determining whether a violation of this section exists shall include but not be limited to the following:

(1) The sound level of the objectionable noise.

(2) The sound level of the ambient noise.

(3) The proximity of the noise to residential sleeping facilities.

(4) The nature and zoning of the area within which the noise emanates.

(5) The density of the inhabitation of the area within which the noise emanates.

(6) The time of day or night the noise occurs.

(7) The duration of the noise and its tonal informational or musical content.

(8) Whether the noise is continuous, recurrent or intermittent.

(9) Whether the noise is produced by a commercial or noncommercial activity.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-96. - Administration.

The administration of this article is vested in the community and economic development director.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-98. - Violations.

(a) Any violation of any of the provisions of this article shall be and is hereby declared a public nuisance.

(b) Any person who violates any provision of this article shall be guilty of a separate offense for each and every day during any portion of which any such person commits, continues, permits, or causes a violation thereof and, shall be punished accordingly.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-99. - Administrative enforcement.

If the community and economic development director determines that a violation of this article has occurred or is occurring, the community and economic development director shall have the authority to issue a notice of administrative violation to the responsible party and impose administrative penalties pursuant to section 50-96 et seq., or to seek enforcement of this article pursuant to any applicable laws or ordinances, including, but not limited to, injunctions or criminal penalties.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-100. - Criminal penalties.

Violations of this article are hereby declared to be infractions. A conviction of an infraction shall be punishable by fine as follows: upon a first conviction, a fine not exceeding $100.00; upon the second conviction within one year of a prior conviction, by a fine not exceeding $200.00; upon any subsequent conviction within one year of two prior convictions, by a fine of not exceeding $500.00.

(Ord. No. 2015-011, § 1, 1-14-2016)

Sec. 34-101. - Civil injunction.

The violation of any provision of this article shall be and is hereby declared to be contrary to the public interest and shall, at the discretion of city, create a cause for injunctive relief.

(Ord. No. 2015-011, § 1, 1-14-2016)

Secs. 34-102—34-130. - Reserved.

Appendix G

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Calibration Worksheet

Project Information:	Job Number:	2019-023
	Project Name:	Fair Oaks Senior Apartments
	Roadway Tested:	Fair Oaks Boulevard
	Test Location:	ST-1
	Test Date:	February 5, 2019
Weather Conditions:	Temperature (Fahrenheit):	45
	Relative Humidity:	56%
	Wind Speed and Direction:	W 5 MPH
	Cloud Cover:	Partly Cloudy
Sound Level Meter:	Sound Level Meter:	LDL Model 820 (BAC #4)
	Calibrator:	LDL Model CAL200
	Meter Calibrated:	Immediately before
	Meter Settings:	A-weighted, slow response
Microphone:	Microphone Location:	On project site
	Distance to Centerline (feet):	100
	Microphone Height:	5 feet above ground
	Intervening Ground (Hard or Soft):	**Soft**
	Elevation Relative to Road (feet):	5
Roadway Condition:	Pavement Type	Asphalt
	Pavement Condition:	Good
	Number of Lanes:	4
	Posted Maximum Speed (mph):	45
Test Parameters:	Test Time:	3:52 PM
	Test Duration (minutes):	15
	Observed Number Automobiles:	385
	Observed Number Medium Trucks:	0
	Observed Number Heavy Trucks:	0
	Observed Average Speed (mph):	45
Model Calibration:	Measured Average Level (L_{eq}):	63.3
	Level Predicted by FHWA Model:	63.6
	Difference:	***0.3 dB***

Conclusions: Model accurately predicting traffic noise levels at project site. No calibration offset warranted.

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Appendix H

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet

Project Information:

Job Number: 2019-023
Project Name: Fair Oaks Senior Apartments
Roadway Name: Fair Oaks Boulevard

Traffic Data:

Year:	2036
Average Daily Traffic Volume:	22,800
Percent Daytime Traffic:	83
Percent Nighttime Traffic:	17
Percent Medium Trucks (2 axle):	2
Percent Heavy Trucks (3+ axle):	1
Assumed Vehicle Speed (mph):	45
Intervening Ground Type (hard/soft):	**Soft**

Traffic Noise Levels:

				----------L_{dn}, dB----------			
Location	**Description**	**Distance**	**Offset (dB)**	**Autos**	**Medium Trucks**	**Heavy Trucks**	**Total**
1	Outdoor activity area	450	-5	51	42	43	52
2	Nearest 1st-Floor Facades	100	0	65	57	58	67
3	Nearest Upper-Floor Facades	100	3	68	60	61	70

Traffic Noise Contours (No Calibration Offset):

L_{dn} Contour, dB	Distance from Centerline, (ft)
75	28
70	60
65	128
60	276

Notes:
1. Future average daily traffic volume for Fair Oaks Boulevard obtained from the Traffic Impact Study conducted for the project by Kimley Horn (May 6, 2019).
2. Offset of -5 dB conservatively applied at common recreational area to account for the shielding provided by the intervening building structures.
3. Offset of +3 dB applied at upper-floor facades to account for reduced ground absorption of sound at elevated positions.

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Attachment 7

FAIR OAKS SENIOR APARTMENTS
12057 FAIROAKS BOULEVARD CITRUS HEIGHTS
TREE INVENTORY AND IMPACT ASSESSMENT

TREE #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						Rating (1-6)	Preser-vation (1-3)	Pro-tected Species	Const Rem	Const Enc	NOTABLE CHARACTERISTICS	MAINTENANCE RECOMMENDATIONS	PERCIEVED IMPACTS	DISPOSITION
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR									
24011	Interior Live Oak	*(Quercus wislizeni)*	3,4,6	13	22	Poor to fair	Poor	Poor to fair	Fair	Poor	Fair	4	2	13		1	Suppressed. Out of balance and lying prone on grade to the northeast. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24012	Valley Oak	*(Quercus lobata)*		7	19	Fair	Poor to fair	Fair	Dormant	Poor to fair	Fair	4	2	7		1	Suppressed. Out of balance to the northeast. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24016	Valley Oak	*(Quercus lobata)*		10	17	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	10		1	Above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24017	Interior Live Oak	*(Quercus wislizeni)*		8	16	Fair	Fair	Fair	Fair	Fair	Fair	3	1	8		1	Slightly out of balance to the east. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24019	Interior Live Oak	*(Quercus wislizeni)*		12	21	Fair	Poor to fair	Fair	Fair	Poor to fair	Fair	4	2	12		1	Suppressed. Out of balance and growing at an angle to the southeast. Slightly above average amount of deadwood.	None at this time.	Moderate enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24021	Interior Live Oak	*(Quercus wislizeni)*		13	22	Fair	Fair	Fair	Fair	Fair	Fair	3	1	13		1	Slightly out of balance to the west. Slightly above average amount of deadwood.	None at this time.	Moderate enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24023	Valley Oak	*(Quercus lobata)*		8	17	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	4	1	8		1	Suppressed. Out of balance to the east. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24028	Interior Live Oak	*(Quercus wislizeni)*		6	15	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	1	6		1	Suppressed. Out of balance to the southeast. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24029	Interior Live Oak	*(Quercus wislizeni)*		11	20	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	2	11		1	Measured at 1' above grade. Suppressed. Out of balance to the east. Forks 3' above grade. Weak attachments. Slightly above average amount of deadwood.	None at this time.	Moderate enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24030	Blue Oak	*(Quercus douglasii)*		6	8	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	6		1	Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24031	Interior Live Oak	*(Quercus wislizeni)*		8	17	Poor	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	5	2	8		1	Past partial failure of the root system has left the tree growing one-sided at an angle to the southeast. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24034	Blue Oak	*(Quercus douglasii)*		6	7	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	6		1	Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24037	Valley Oak	*(Quercus lobata)*		11	22	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	11	11		Slightly above average amount of deadwood.	None at this time.	Significant impacts for bio swale const.	Remove
24038	Valley Oak	*(Quercus lobata)*		10	16	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	10	10		Slightly above average amount of deadwood.	None at this time.	Significant impacts for bio swale const.	Remove
24046	Interior Live Oak	*(Quercus wislizeni)*		6	14	Fair	Fair	Fair	Fair	Fair	Fair	3	1	6	6		Suppressed. Out of balance to the west. Slightly above average amount of deadwood.	None at this time.	Significant impacts for bio swale const.	Remove

24048	Interior Live Oak	*(Quercus wislizeni)*	4,6	10	15	Fair	Fair	Fair	Fair	Fair	Fair	3	1	10		1	Slightly above average amount of deadwood.	None at this time.	Minor to moderate encroachment for parking lot and landscape planter const.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24050	Blue Oak	*(Quercus douglasii)*		31	30	Fair	Fair	Fair	Dormant	Fair	Fair	3	2	31		1	Located 15' east of the east property line. Above average amount of deadwood. Tag on fence.	None at this time.	Minor to moderate encroachment for parking lot and landscape planter const.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24051	Interior Live Oak	*(Quercus wislizeni)*	4,6,7	17	15	Fair	Fair	Fair	Fair	Fair	Fair	3	1	17	17		Forks approximately 1' above grade. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24052	Interior Live Oak	*(Quercus wislizeni)*	3,4,4,5	16	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	16	16		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24053	Valley Oak	*(Quercus lobata)*		8	13	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	8	8		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24054	Valley Oak	*(Quercus lobata)*	30,34	64	31	Poor to fair	Poor	Poor	Dormant	Poor	Fair	5	3	64		1	Callusing basal lower trunk wounds, various locations. Suspect interior decay. Callusing wound, southwest side, 2'-12' above grade with obvious decay. Excessive end weight.		May require removal pending additional diagnostics. If preserved minor to moderate encroachment for landscape grading and walking path.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24055	Interior Live Oak	*(Quercus wislizeni)*		27	29	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	2	27		1	Measured at 3' above grade. Forks 3'-5' above grade. Inherently weak primary crotch with an exposed seam. Slightly above average amount of deadwood.	None at this time.	Minor to moderate encroachment for landscape grading and walking path.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24056	California Black Walnut	*(Juglans californica)*		6	6	Fair	Fair	Fair	Dormant	Fair	Fair	3	2		6		Slightly above average amount of deadwood.	None at this time.	Minor to moderate encroachment for landscape grading and walking path.	Remove
24057	Valley Oak	*(Quercus lobata)*		6	8	Fair	Poor	Poor to fair	Dormant	Poor	Fair	6	3	0	0		Tree actually grows through a chain-link fence in two locations.	***Recommend removal due to nature and extent of noted defects.***		Remove
24058	Interior Live Oak	*(Quercus wislizeni)*		8	10	Poor to fair	Poor	Fair	Fair	Poor	Fair	6	3	0	0		Embedded chain-link in the lower 3' of the trunk. Other wounding, various locations, with minor decay. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects.***		Remove
24059	Valley Oak	*(Quercus lobata)*		7	9	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	4	2	7	7		Embedded chain-link in the lower trunk.	Cut chain-link.	Grading impacts	Remove
24061	Interior Live Oak	*(Quercus wislizeni)*		13	16	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	2	13	13		Suppressed. Out of balance to the west. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24062	Valley Oak	*(Quercus lobata)*		24	25	Fair	Poor to fair	Fair	Dormant	Fair	Fair	4	2	24	24		Callused lower trunk wound, north side, with possible interior decay. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24064	Interior Live Oak	*(Quercus wislizeni)*		7	10	Poor to fair	Poor to fair	Poor to fair	Poor to fair	Poor to fair	Poor to fair	5	3	7	7		Lower trunk covered in ivy. Out of balance to the east. Above average amount of deadwood. Substantial amount of brown foliage.	None at this time.	Grading impacts	Remove
24066	Blue Oak	*(Quercus douglasii)*		9	16	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	9	9		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24067	Interior Live Oak	*(Quercus wislizeni)*	10,11	21	22	Fair	Fair	Fair	Fair	Fair	Fair	3	1	21	21		Forks at grade with weak attachments. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove

24068	Interior Live Oak	*(Quercus wislizeni)*		28	30	Poor	Poor	Fair	Fair	Poor	Fair	6	3	0	0		What remains is approximately one-half of a very large tree that has partially failed. Severe decay evident. The measurement was taken 5' above grade. Over 60% of the lower trunk has been compromised.	***Recommend removal due to nature and extent of noted defects.***		Remove
24069	California Black Walnut	*(Juglans californica)*	9,14,14	37	22	Poor to fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	6	3	0	0		Forks from grade to 1.5' above grade. Weak attachments. Defects in the upper canopy. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects.***		Remove
24070	Blue Oak	*(Quercus douglasii)*		24	30	Poor	Poor	Poor to fair	Dormant	Poor	Poor to fair	6	3	0		1	**OFF SITE Tree;** Callusing basal trunk wound, south side, to 2' above grade. Moderate decay. Trunk has an abrupt bend 8' above grade to the east growing horizontal. Recent fracture 18' from the root collar compromised over half of the trunk. Some persistent brown foliage on the ends.	***Recommend removal due to nature and extent of noted defects. The Tree owner should be notified.***	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24071	Blue Oak	*(Quercus douglasii)*		32	33	Poor	Poor	Poor to fair	Dormant	Poor	Fair	6	3	0		1	**OFF SITE Tree**; Callusing basal trunk wound with moderate decay in various locations. Inherently weak primary crotch 8' above grade with inclusions and weak attachments. Scaffold failures in the upper canopy. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects. The Tree owner should be notified.***	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24072	Blue Oak	*(Quercus douglasii)*		30	29	Poor	Poor	Poor to fair	Dormant	Poor	Fair	6	3	0		1	**OFF SITE Tree**; Callusing basal trunk cavity, south side, from grade to 3' above grade. Significant interior decay. Failures of scaffolds in the upper canopy.	***Recommend removal due to nature and extent of noted defects. The Tree owner should be notified.***	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24073	Interior Live Oak	*(Quercus wislizeni)*	3,4,5,6	18	12	Fair	Fair	Fair	Fair	Fair	Fair	3	1	18		1	Forks at grade. Weak attachments. Above average amount of deadwood.	None at this time.	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24074	Interior Live Oak	*(Quercus wislizeni)*		8	15	Fair	Fair	Fair	Fair	Fair	Fair	3	1	8		1	Slightly out of balance to the south. Slightly above average amount of deadwood.	None at this time.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain
24075	Interior Live Oak	*(Quercus wislizeni)*		7	16	Fair	Fair	Fair	Fair	Fair	Fair	3	1	7	7		Slightly above average amount of deadwood.	None at this time.		Remove
24076	Interior Live Oak	*(Quercus wislizeni)*		8	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	8		1	Slightly above average amount of deadwood.	None at this time.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24077	Blue Oak	*(Quercus douglasii)*		30	31	Poor to fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	3	30		1	Weak attachments, over burdened branches.	Prune to reduce excessive weight, evaluate for support system.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24078	Blue Oak	*(Quercus douglasii)*		32	30	Poor to fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	3	32	0		Weak attachments. Severely out of balance to the southwest.	***Recommend removal due to nature and extent of noted defects.***		Remove

24081	Interior Live Oak	*(Quercus wislizeni)*		6	14	Fair	Fair	Fair	Fair	Fair	Fair	3	1	6		1	Slightly above average amount of deadwood.	None at this time.	Minor encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24083	Blue Oak	*(Quercus douglasii)*		35	36	Poor to fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	3	35			Weak attachments with inclusions. Out of balance to the east. Limb cavities with decay.	***Recommend removal due to nature and extent of noted defects.***		Remove
24084	Blue Oak	*(Quercus douglasii)*		8	10	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	2	8		1		None at this time.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24085	Blue Oak	*(Quercus douglasii)*		15	23	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	2	15		1	Out of balance to the north.	Prune to reduce excessive weight.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24086	Blue Oak	*(Quercus douglasii)*		35	36	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	3	35	0		Weak attachments. Overburdened limbs. Sparse foliage.	***Recommend removal due to nature and extent of noted defects.***		Remove
24087	Blue Oak	*(Quercus douglasii)*		14	25	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	2	14		1	Out of balance to the northwest.	Prune to reduce excessive weight.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24088	Interior Live Oak	*(Quercus wislizeni)*		40	35	Poor to fair	Poor	Poor to fair	Fair	Poor	Fair	6	3	0	0		Measured at 2' above grade. Callusing basal lower trunk wounds/cavities, various locations. Moderate to significant decay. Forks 8' above grade into codominant stems, one tending northwest and the other south.	***Recommend removal due to nature and extent of noted defects.***		Remove
24089	Blue Oak	*(Quercus douglasii)*		30	32	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	3	30	0		Out of balance to the south and west. Weak attachments. Sparse foliage.	***Recommend removal due to nature and extent of noted defects.***		Remove
24090	Blue Oak	*(Quercus douglasii)*		26	35	Poor	Poor	Poor to fair	Dormant	Poor to fair	Fair	6	3	0	0		Suppressed. Out of balance to the west. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects.***		Remove
24091	Interior Live Oak	*(Quercus wislizeni)*		50	40	Poor	Poor	Poor to fair	Fair	Poor	Fair	6	3	0	0		Callusing basal lower trunk wounds, various locations. Minor to moderate decay. Out of balance to the south and west. Several failures of scaffolds with resulting decay into the main stem.	***Recommend removal due to nature and extent of noted defects.***		Remove
24092	Interior Live Oak	*(Quercus wislizeni)*		12	17	Fair	Fair	Fair	Fair	Fair	Fair	3	1	12	12		Measured at 3' above grade. Out of balance to the south. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24093	Interior Live Oak	*(Quercus wislizeni)*		6	8	Fair	Fair	Fair	Fair	Fair	Fair	3	1	6	6		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24094	Interior Live Oak	*(Quercus wislizeni)*	3,5,5	13	6	Fair	Fair	Fair	Fair	Fair	Fair	3	1	13	13		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24095	Valley Oak	*(Quercus lobata)*		6	11	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	6	6		Out of balance to the east. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24096	Interior Live Oak	*(Quercus wislizeni)*	5,6	11	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	11	11		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove

24097	Valley Oak	*(Quercus lobata)*		7	9	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	7	7		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24100-24120	***# Not Used***																			
24121	Interior Live Oak	*(Quercus wislizeni)*		10	12	Fair	Fair	Fair	Fair	Fair	Fair	3	1	10	10		Slightly above average amount of deadwood. Tag on fence.	None at this time.	Grading impacts	Remove
24123	Blue Oak	*(Quercus douglasii)*		19	24	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	4	2	19	19		Suppressed. Out of balance to the east. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24124	Blue Oak	*(Quercus douglasii)*		29	30	Fair	Fair	Poor to fair	Dormant	Poor to fair	Fair	4	2	29	29		Weak attachments. Above average amount of deadwood.	None at this time.	Grading impacts	Remove
24126	Interior Live Oak	*(Quercus wislizeni)*	6,8	14	17	Fair	Fair	Fair	Fair	Fair	Fair	3	1	14	14		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24127	Valley Oak	*(Quercus lobata)*		7	8	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	7	7		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24128	Interior Live Oak	*(Quercus wislizeni)*	6,7,13	26	24	Poor to fair	Poor to fair	Fair	Fair	Poor to fair	Fair	4	3	26	26		Tree grew as an old stump sprout with up to 2' of separation between the bases of the stems. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24129	Interior Live Oak	*(Quercus wislizeni)*		10	12	Fair	Fair	Fair	Fair	Fair	Fair	3	1	10	10		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24131	Interior Live Oak	*(Quercus wislizeni)*		26	30	Poor	Poor	Poor to fair	Fair	Poor	Fair	6	3	0	0		Callusing basal trunk cavity from grade to 4' above grade. Significant decay has left the main stem compromised. Appears as though the tree may be leaning on the garage.	***Recommend removal due to nature and extent of noted defects.***		Remove
24132	Blue Oak	*(Quercus douglasii)*	11,14	25	20	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	3	2	0	0		Out of balance to the west. Slightly above average amount of deadwood. Recent failure of 11" stem.	***Recommend removal due to nature and extent of noted defects.***		Remove
24133	Interior Live Oak	*(Quercus wislizeni)*		30	35	Poor to fair	Poor	Poor to fair	Fair	Poor	Fair	5	3	30	0		Growing at an angle/out of balance to the northeast, over apartment building. Weak attachments. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects.***		Remove
24134	Blue Oak	*(Quercus douglasii)*		30	30	Fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3	3	30		1	Out of balance to the south. Slightly above average amount of deadwood.	Prune to reduce excessive weight and evaluate for a support system.	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24135	Interior Live Oak	*(Quercus wislizeni)*	19,25,36	80	40	Poor to fair	Poor to fair	Fair	Fair	Poor to fair	Fair	5	3	80	0		Callusing basal lower trunk wounds. Moderate to severe decay visible in various locations, with fruiting bodies present. Weak attachments. Above average amount of deadwood. Severe mistletoe canker damage.	***Recommend removal due to nature and extent of noted defects.***		Remove
24136	Blue Oak	*(Quercus douglasii)*	30,36	66	42	Poor	Poor	Poor	Fair	Poor	Fair	6	3	0	0		Measured 3' and 3.5' above grade. Tree was originally codominant, forking 3' above grade, but has failed and lying in two parts. Southerly part is lying prone on grade, and the northerly part is still upright.	***Recommend removal due to nature and extent of noted defects.***		Remove
24137	Interior Live Oak	*(Quercus wislizeni)*	6,6	12	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	12		1	Slightly above average amount of deadwood.	None at this time.	Appears to be located off site. Minor encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.

24139	Interior Live Oak	*(Quercus wislizeni)*	9,12	21	26	Poor to fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3	1	21		1	Chain-link embedded in the lower trunk. Out of balance, one sided to the south. Weak attachments and included bark.	***Recommend removal due to nature and extent of noted defects.***	Appears to be located off site. Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24140	Interior Live Oak	*(Quercus wislizeni)*	5,5	10	25	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	1	10		1	Suppressed. Out of balance to the south. Slightly above average amount of deadwood.	None at this time.	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24141	Interior Live Oak	*(Quercus wislizeni)*		7	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	7	7		Slightly above average amount of deadwood.	None at this time.	Appears to be located off site. Moderate encroachment for pad/landscape grading and perimeter wall construction.	Remove
24142	Interior Live Oak	*(Quercus wislizeni)*		6	6	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	6	3	0		1	Tree is growing through a chain-link fence with embedded wire. Codominant failure 7' above grade compromised the main stem by 50%. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects.***	Appears to be located off site. Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24143	Interior Live Oak	*(Quercus wislizeni)*		11	16	Fair	Fair	Fair	Fair	Fair	Fair	3	1	11		1	Slightly above average amount of deadwood.	None at this time.	Appears to be located off site. Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24144	Interior Live Oak	*(Quercus wislizeni)*		12	23	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	1	12		1	Suppressed. Out of balance to the west. Inherently weak primary crotch with included bark.	None at this time.	Appears to be located off site. Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24145	Valley Oak	*(Quercus lobata)*		6	17	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	6	6		Suppressed. Out of balance to the south. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24147	Valley Oak	*(Quercus lobata)*	16,17	33	29	Poor to fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	2	33		1	Tree is growing against a wooden retaining wall with fill on the west side. Out of balance to the east. Forks 3.5' above grade into codominant stems with included bark in the primary crotch. Slightly above average amount of deadwood.	Prune to clean crown and reduce end weight. Evaluate for a support system.	Moderate to significant encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24148	Camphor	*(Cinnamomum camphora)*	10,10	20	18	Fair	Fair	Fair	Fair	Fair	Fair	3	2		0		Slightly above average amount of deadwood.		Significant impact for retaining wall & Bio swale construction.	Remove
24149	Valley Oak	*(Quercus lobata)*		11	18	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	11		1	Slightly out of balance to the east. Slightly above average amount of deadwood.	None at this time.		Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24151	Valley Oak	*(Quercus lobata)*		8	10	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	8		1	Slightly above average amount of deadwood.	None at this time.		Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24152	Valley Oak	*(Quercus lobata)*		6	7	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	6		1	Slightly above average amount of deadwood.	None at this time.		Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.

24154	Black Acacia	*(Acacia melanoxylon)*	10,12	22	19	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	3	0	0		Forks at grade. Weak attachments. Slightly above average amount of deadwood.	None at this time.		Remove
24156	Valley Oak	*(Quercus lobata)*		17	25	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	4	1	17		1	Forks 12' above grade. Inherently weak primary crotch with included bark. Slightly above average amount of deadwood.		Moderate encroachment for grading, drainage, retaining wall and perimeter wall.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24157	Valley Oak	*(Quercus lobata)*		7	17	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	4	1	7	7		Out of balance to the north. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24161	Interior Live Oak	*(Quercus wislizeni)*		14	23	Fair	Fair	Fair	Fair	Fair	Fair	3	1	14	14		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24162	Interior Live Oak	*(Quercus wislizeni)*		8	12	Fair	Fair	Fair	Fair	Fair	Fair	3	1	8	8		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24163	Interior Live Oak	*(Quercus wislizeni)*	6,7	13	17	Fair	Fair	Poor to fair	Fair	Fair	Fair	3	1	13	13		Smaller stem has embedded chain-link 3' above grade.	Cut wire.	Grading impacts	Remove
24164	Interior Live Oak	*(Quercus wislizeni)*	7,8	15	15	Fair	Fair	Fair	Fair	Fair	Fair	3	1	15	15		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24165	Interior Live Oak	*(Quercus wislizeni)*	5,6	11	12	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	1	11		1	Embedded chain-link in the lower trunk. Out of balance to the west. Slightly above average amount of deadwood.	Cut wire.	Minor grading impacts	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24167	Interior Live Oak	*(Quercus wislizeni)*	4,8	12	20	Fair	Fair	Fair	Fair	Fair	Fair	3	1	12	12		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24168	Interior Live Oak	*(Quercus wislizeni)*	3,4,4	11	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	11		1	Slightly above average amount of deadwood.	None at this time.	Minor grading impacts	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24169	Interior Live Oak	*(Quercus wislizeni)*	5,5	10	13	Fair	Fair	Fair	Fair	Fair	Fair	3	1	10		1	Slightly above average amount of deadwood.	None at this time.	Minor grading impacts	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.

TOTAL PROTECTED, INVENTORIED TREES = 95 trees (1,652 aggregate diameter inches)
TOTAL RECOMMENDED REMOVALS = 23 trees (504 aggregate diameter inches)
TOTAL CONSTRUCTION REMOVALS = 36 trees (414 aggregate diameter inches)
Rating (1-6, where 6 is remove): 1=0 trees; 2=0 trees; 3=48 trees; 4=19 trees; 5=13 trees; 6=13 trees
Suitability for Preservation (1-3, where 3 is remove): 1=50 trees; 2=19 trees; 3=24 trees

Attachment 8

PARTNER
Engineering and Science, Inc.®

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

12057 Fair Oaks Boulevard
Fair Oaks, California 95628

Report Date: April 26, 2019
Partner Project No. 19-243045.1

Prepared for:

Stamas Corporation
3007 Douglas Boulevard, Suite 170
Roseville, California 95661

April 26, 2019

Sam Stamas
Stamas Corporation
3007 Douglas Boulevard, Suite 170
Roseville, California 95661

Subject: Phase I Environmental Site Assessment
12057 Fair Oaks Boulevard
12057 Fair Oaks Boulevard
Fair Oaks, California 95628
Partner Project No. 19-243045.1

Dear Mr. Stamas:

Partner Engineering and Science, Inc. (Partner) is pleased to provide the results of the *Phase I Environmental Site Assessment* (Phase I ESA) report of the abovementioned address (the "subject property"). This assessment was performed in conformance with the scope and limitations as detailed in the ASTM Practice E1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

This assessment included a site reconnaissance as well as research and interviews with representatives of the public, property ownership, site manager, and regulatory agencies. An assessment was made, conclusions stated, and recommendations outlined.

We appreciate the opportunity to provide environmental services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact me at (916) 237-0245.

Sincerely,

DRAFT

John Wharff
Relationship Manager

EXECUTIVE SUMMARY

Partner Engineering and Science, Inc. (Partner) has performed a Phase I Environmental Site Assessment (ESA) in accordance with the scope of work and limitations of ASTM Standard Practice E1527-13, the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312) and set forth by Stamas Corporation for the property located at 12057 Fair Oaks Boulevard in Fair Oaks, Sacramento County, California (the "subject property"). The Phase I Environmental Site Assessment is designed to provide Stamas Corporation with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the subject property.

Property Description

The subject property is located on the western side of Fair Oaks Boulevard and the northeastern side of Celine Drive within a residential area of Sacramento County. Please refer to the table below for further description of the subject property:

Subject Property Data	
Address:	12057 Fair Oaks Boulevard, Fair Oaks, California
Property Use:	Residential
Land Acreage (Ac):	4.56
Number of Buildings:	One
Number of Floors:	One
Gross Building Area (SF):	2,940 SF
Date of Construction:	1966
Assessor's Parcel Number (APN):	233-0430-002 (Parcel A); 233-0430-041 (Parcel B); 233-0430-007 (Parcel C)
Type of Construction:	Wood-Framed
Current Tenants:	Residential
Site Assessment Performed By:	Mark Lerner of Partner
Site Assessment Conducted On:	April 16, 2019

The subject property is currently occupied by a single-family residence with associated small-scale livestock husbandry for residential use. Onsite operations consist of residential living, the routine feeding of chickens, pigs, and peacocks, and routine property maintenance. In addition to the current structures, the subject property is also improved with several wooden fences throughout the property, a gated entrance along Fair Oaks Boulevard on the eastern portion, and associated landscaping.

According to available historical sources, the subject property was formerly undeveloped as early as 1891; developed agriculturally in 1937; and developed with the current structure in 1966. Tenants on the subject property have included Engel Christian Homes (1977-1992) and a residence (1971, 1995-Present).

The immediately surrounding properties consist of Sierra Square Apartments and a Transformer Station to the north; nine single-family residences to the southwest, south, and southeast; four single-family residences to the east across Fair Oaks Boulevard; and three single-family residences to the west.

According to a previous subsurface investigation conducted on a nearby property (Sears Auto Center #6799 at 5900 Sunrise Mall and Case #T10000010976) and topographic map interpretation, the depth of groundwater in the vicinity of the subject property is inferred to be approximately 40 feet below ground surface (bgs), and groundwater flow is inferred to be toward the north-northwest.

Findings

A *recognized environmental condition (REC)* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. The following was identified during the course of this assessment:

- Partner did not identify any recognized environmental conditions during the course of this assessment.

A *controlled recognized environmental condition (CREC)* refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. The following was identified during the course of this assessment:

- Partner did not identify any controlled recognized environmental conditions during the course of this assessment.

A *historical recognized environmental condition (HREC)* refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. The following was identified during the course of this assessment:

- Partner did not identify any historical recognized environmental conditions during the course of this assessment.

An *environmental issue* refers to environmental concerns identified by Partner, which do not qualify as RECs; however, warrant further discussion. The following was identified during the course of this assessment:

- The subject property parcel was historically used for agricultural purposes. There is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used and stored onsite. The subject property is either paved over or covered by building structures that minimize direct contact to any potential remaining concentrations in the soil. Additionally, during previous site development activities, near surface soils (where residual agricultural chemical concentrations would have most likely been present, if at all) were likely mixed with fill material or disturbed during grading. Also, it is common that engineered fill material is placed over underlying soils as part of the development activities. These additional variables serve to further reduce the potential for exposure to residual agricultural chemicals (if

any). Based on these reasons, Partner concludes that the possible former use of agricultural chemicals is not expected to represent a significant environmental concern at this time.

- Due to the age of the subject property buildings, there is a potential that asbestos-containing material (ACM) and lead-based paint (LBP) are present. Overall, all suspect ACMs and painted surfaces were observed in good condition and do not pose a health and safety concern to the occupants of the subject property at this time. Should these materials be replaced, the identified suspect ACMs would need to be sampled to confirm the presence or absence of asbestos prior to any renovation or demolition activities to prevent potential exposure to workers and/or building occupants.

Conclusions, Opinions and Recommendations

Partner has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of 12057 Fair Oaks Boulevard in Fair Oaks, Sacramento County, California (the "subject property"). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property; however, environmental issues were identified. Based on the conclusions of this assessment, Partner recommends no further investigation of the subject property at this time.

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1.0 INTRODUCTION

Partner Engineering and Science, Inc. (Partner) has performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Standard Practice E1527-13 and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312) for the property located at 12057 Fair Oaks Boulevard in Fair Oaks, Sacramento County, California (the "subject property"). Any exceptions to, or deletions from, this scope of work are described in the report.

1.1 Purpose

The purpose of this ESA is to identify existing or potential Recognized Environmental Conditions (as defined by ASTM Standard E1527-13) affecting the subject property that: 1) constitute or result in a material violation or a potential material violation of any applicable environmental law; 2) impose any material constraints on the operation of the subject property or require a material change in the use thereof; 3) require clean-up, remedial action or other response with respect to Hazardous Substances or Petroleum Products on or affecting the subject property under any applicable environmental law; 4) may affect the value of the subject property; and 5) may require specific actions to be performed with regard to such conditions and circumstances. The information contained in the ESA Report will be used by Client to: 1) evaluate its legal and financial liabilities for transactions related to foreclosure, purchase, sale, loan origination, loan workout or seller financing; 2) evaluate the subject property's overall development potential, the associated market value and the impact of applicable laws that restrict financial and other types of assistance for the future development of the subject property; and/or 3) determine whether specific actions are required to be performed prior to the foreclosure, purchase, sale, loan origination, loan workout or seller financing of the subject property.

This ESA was performed to permit the *User* to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on scope of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601) liability (hereinafter, the "*landowner liability protections*," or "*LLPs*"). ASTM Standard E1527-13 constitutes "*all appropriate inquiry* into the previous ownership and uses of the *property* consistent with good commercial or customary practice" as defined at 42 U.S.C. §9601(35)(B).

1.2 Scope of Work

The scope of work for this ESA is in accordance with the requirements of ASTM Standard E1527-13. This assessment included: 1) a property and adjacent site reconnaissance; 2) interviews with key personnel; 3) a review of historical sources; 4) a review of regulatory agency records; and 5) a review of a regulatory database report provided by a third-party vendor. Partner contacted local agencies, such as environmental health departments, fire departments and building departments in order to determine any current and/or former hazardous substances usage, storage and/or releases of hazardous substances on the subject property. Additionally, Partner researched information on the presence of activity and use limitations (AULs) at these agencies. As defined by ASTM E1527-13, AULs are the legal or physical restrictions or limitations on the use of, or access to, a site or facility: 1) to reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil or groundwater on the subject

property; or 2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or engineering controls (IC/ECs), are intended to prevent adverse impacts to individuals or populations that may be exposed to hazardous substances and petroleum products in the soil or groundwater on the property.

If requested by Client, this report may also include the identification, discussion of, and/or limited sampling of asbestos-containing materials (ACMs), lead-based paint (LBP), mold, and/or radon.

1.3 Limitations

Partner warrants that the findings and conclusions contained herein were accomplished in accordance with the methodologies set forth in the Scope of Work. These methodologies are described as representing good commercial and customary practice for conducting an ESA of a property for the purpose of identifying recognized environmental conditions. There is a possibility that even with the proper application of these methodologies there may exist on the subject property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. Partner believes that the information obtained from the record review and the interviews concerning the subject property is reliable. However, Partner cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete. The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. The conclusions presented in the report are based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of agreed-upon services or the time and budgeting restraints imposed by the Client. No other warranties are implied or expressed.

Some of the information provided in this report is based upon personal interviews, and research of available documents, records, and maps held by the appropriate government and private agencies. This report is subject to the limitations of historical documentation, availability, and accuracy of pertinent records, and the personal recollections of those persons contacted.

This practice does not address requirements of any state or local laws or of any federal laws other than the all appropriate inquiry provisions of the LLPs. Further, this report does not intend to address all of the safety concerns, if any, associated with the subject property.

Environmental concerns, which are beyond the scope of a Phase I ESA as defined by ASTM include the following: ACMs, LBP, radon, and lead in drinking water. These issues may affect environmental risk at the subject property and may warrant discussion and/or assessment; however, are considered non-scope issues. If specifically requested by the Client, these non-scope issues are discussed in Section 6.3.

1.4 User Reliance

Stamas Corporation engaged Partner to perform this assessment in accordance with an agreement governing the nature, scope and purpose of the work as well as other matters critical to the engagement. All reports, both verbal and written, are for the sole use and benefit of Stamas Corporation. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work.

In the absence of a written agreement with Partner granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against Partner, its officers, employees, vendors, successors or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, Client and their respective officers, employees, vendors, successors and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees) and costs attributable to such Use. Unauthorized use of this report shall constitute acceptance of and commitment to these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted. Additional legal penalties may apply.

1.5 Limiting Conditions

The findings and conclusions contain all of the limitations inherent in these methodologies that are referred to in ASTM E1527-13.

Specific limitations and exceptions to this ESA are more specifically set forth below:

- Interviews with past owners, operators and occupants were not reasonably ascertainable and thus constitute a data gap. Based on information obtained from other historical sources (as discussed in Section 3.0), this data gap is not expected to alter the findings of this assessment.
- Partner submitted Freedom of Information Act (FOIA) requests to the Citrus Heights Building and Permit Department for a complete building permit history associated with the subject property. As of this writing, this agency has not responded to Partner's request. Based on information obtained from other historical sources, this limitation is not expected to alter the overall findings of this assessment.
- Partner was unable to access the residence and interior of the subject property due to the presence of a locked gate. However, based on the observations from the boundaries of the subject property, the nature of the current use, and the planned removal of the residence, this limited method of survey is not expected to alter the overall findings of this assessment.

2.0 SITE DESCRIPTION

2.1 Site Location and Legal Description

The subject property at 12057 Fair Oaks Boulevard in Fair Oaks, California is located on the western side of Fair Oaks Boulevard and the northeastern side of Celine Drive. According to the Sacramento County Assessor, the subject property is Identified as Assessor Parcel Numbers (APNs) 233-0430-041, 233-0430-007, and 233-0430-002, and ownership has been vested in Christian Engel 2004 Revocable Trust since at least 2004, and Randhir Heer since March 5, 2015.

Please refer to Figure 1: Site Location Map, Figure 2: Site Plan, Figure 3: Topographic Map, and Appendix A: Site Photographs for the location and site characteristics of the subject property.

2.2 Current Property Use

The subject property is currently occupied by a single-family residence with associated small-scale livestock husbandry for residential use. Onsite operations consist of residential living, the routine feeding of chickens, pigs, and peacocks, and routine property maintenance. The subject property consists of the one-story single-family residence located on the northern portion of the property and two smaller outbuildings associated with the animal husbandry operations located to the west and northwest of the residence. In addition to the current structures, the subject property is also improved with several wooden fences throughout the property, a gated entrance along Fair Oaks Boulevard on the eastern portion, and associated landscaping.

The subject property is designated for RD10 for medium-density residential development by the City of Fair Oaks.

The subject property was not identified in the regulatory database report of Section 4.2.

2.3 Current Use of Adjacent Properties

The subject property is located within a residential area of Sacramento County. During the vicinity reconnaissance, Partner observed the following land use on properties in the immediate vicinity of the subject property:

Immediately Surrounding Properties	
North:	Sierra Square Apartments (8059 Targa Circle) and a Transformer Station (8028 Sunrise East Way)
South:	Several single-family residences (12021, 12009 Fair Oaks Boulevard; 5636, 5642 Gitta Ria Court; 5650, 5656, 5700, 5706, 5707 Celine Drive)
East:	Fair Oaks Boulevard beyond which are four single-family residences (8102 Walnut Hills Way; 5801, 5803, 5807 Shelldrake Court)
West:	Three single-family residences (8049, 8053, 8057 Sawgrass Circle)

No adjacent properties were identified in the regulatory database report of Section 4.2.

2.4 Physical Setting Sources

2.4.1 Topography

The United States Geological Survey (USGS) *Citrus Heights, California* Quadrangle 7.5-minute series topographic map was reviewed for this ESA. According to the contour lines on the topographic map, the subject property is located at approximately 202 feet above mean sea level (MSL). The contour lines in the area of the subject property indicate the area is sloping gently toward the west-southwest. The subject property is depicted on the 2012 map as situated within a developed area in which only structures typically associated with institutional, religious, and large commercial/industrial facilities are portrayed.

A copy of the most recent topographic map is included as Figure 3 of this report.

2.4.2 Hydrology

According to topographic map interpretation, the direction of groundwater flow in the vicinity of the subject property is inferred to be toward the west-southwest. The nearest surface water in the vicinity of the subject property is the Arcade Creek located approximately a mile to the north-northwest of the subject property. No settling ponds, lagoons, surface impoundments, wetlands or natural catch basins were observed at the subject property during this assessment.

According to available information, a public water system operated by the Fair Oaks Water District serves the subject property vicinity. According to the 2017 Consumer Confidence Report, shallow groundwater beneath the subject property is not utilized for domestic purposes. The sources of public water for Fair Oaks is surface water from the American River (65%) which is supplemented by groundwater (35%).

According to a previous subsurface investigation conducted on a nearby property (Sears Auto Center #6799 at 5900 Sunrise Mall and Case #T10000010976) the depth of groundwater in the vicinity of the subject property is inferred to be approximately 40 feet below ground surface (bgs).

2.4.3 Geology/Soils

According to information obtained from the United States Geological Survey (USGS), the subject property lies within the central portion of the Sacramento Valley and is situated in the Great Valley geomorphic province of California. The geology of the Great Valley is typified by thick sequences of sedimentary deposits of Jurassic through Holocene age. The California Division of Mines of Geology (CDMG) and the USGS have mapped a large portion of the local area as being underlain by the lower member of the Quaternary-aged Riverbank formation. The Riverbank formation represents dissected alluvial fans and is generally composed of alluvial gravel, sand and silt derived from the western slopes of the Sierra Nevada Range. The Great Valley of California is generally considered to be an elongated sedimentary trough, approximately 450 miles long and 50 miles wide, which has been filled by a thick sequence of Jurassic to Holocene continental and marine sediments. The sediments have been folded into an asymmetric syncline, the axis of which lies immediately east of the interior Coast Ranges. The Great Valley province is further divided into four geomorphic subunits: the Delta, River Floodplain, Alluvial Floodplain, and Low Foothills.

Based on information obtained from the USDA Natural Resources Conservation Service Web Soil Survey online database, the subject property is mapped primarily as Urban Land, Xerarents, Fiddyment Complex.

The urban land complex consists of very deep, highly permeable soils that formed from alluvium derived from granite.

2.4.4 Flood Zone Information

Partner performed a review of the Flood Insurance Rate Map, published by the Federal Emergency Management Agency. According to Community Panel Number 06067C0092H, dated August 16, 2012, the subject property appears to be located in Zone X (unshaded), an area located outside of the 100-year and 500-year flood plains.

A copy of the reviewed flood map is not included in Appendix B of this report.

3.0 HISTORICAL INFORMATION

Partner obtained historical use information about the subject property from a variety of sources. A chronological listing of the historical data found is summarized in the table below:

Historical Use Information		
Period/Date	**Source**	**Description/Use**
1891-1911	Topographic Maps	Undeveloped/Native land
1937-1966	Aerial Photographs, Interviews, Topographic Maps	Agricultural Land
1966-Present	Aerial Photographs. City Directories, Interviews, Onsite Observations	Residential/Light agriculture

Tenants on the subject property have included Engel Christian Homes (1977-1992) and a residence (1971, 1995-Present).

The subject property parcel was historically used for agricultural purposes. There is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used and stored onsite. The subject property is either paved over or covered by building structures that minimize direct contact to any potential remaining concentrations in the soil. Additionally, during previous site development activities, near surface soils (where residual agricultural chemical concentrations would have most likely been present, if at all) were likely mixed with fill material or disturbed during grading. Also, it is common that engineered fill material is placed over underlying soils as part of the development activities. These additional variables serve to further reduce the potential for exposure to residual agricultural chemicals (if any). Based on these reasons, Partner concludes that the possible former use of agricultural chemicals is not expected to represent a significant environmental concern at this time.

No other potential environmental concerns were identified in association with the current or former use of the subject property.

3.1 Aerial Photograph Review

Partner obtained available aerial photographs of the subject property and surrounding area from Environmental Data Resources, Inc. (EDR) on April 8, 2019. The following was observed on the subject property and adjacent properties during the aerial photograph review:

Date: 1937	***Scale: 1"=500'***
Subject Property:	Appears to be developed with agricultural fields
North:	Appears to be vacant land beyond an unimproved road
South:	Appears to be vacant land
East:	Appears to be developed with agricultural fields beyond an improved road
West:	Appears to be vacant land

Date: 1947, 1952, 1957, 1964	***Scale: 1"=500'***
Subject Property:	No significant changes visible
North:	No significant changes visible
South:	Appears to be developed with a single-family residence to the southeast; no other significant changes are visible
East:	No significant changes visible

Date:	*1947, 1952, 1957, 1964*	*Scale:*	*1"=500'*

West: No significant changes visible

Date:	*1966, 1972*	*Scale:*	*1"=500'*

Subject Property: Appears to be developed with the existing single-family residence located on the northern portion of the subject property; the agricultural development is still apparent
North: No significant changes visible
South: Appears to have been developed with an additional single-family residence to the southeast; no other significant changes are visible
East: No significant changes visible
West: No significant changes visible

Date:	*1984*	*Scale:*	*1"=500'*

Subject Property: No significant changes visible
North: Appears to be developed with the existing apartment complex and the transformer station to the north
South: Appears to have been further developed with the residences to the south and southwest
East: Appears to have been developed with the single-family residences to the east across Fair Oaks Boulevard
West: Appears to be developed with two of the single-family residences to the west

Date:	*1993, 1998, 2006*	*Scale:*	*1"=500'*

Subject Property: No significant changes visible
North: No significant changes visible
South: No significant changes visible
East: No significant changes visible
West: Appears to be further developed with the existing single-family residences

Copies of select aerial photographs are included in Appendix B of this report.

3.2 Fire Insurance Maps

Partner reviewed the collection of Sanborn Fire insurance maps from EDR on April 8, 2019. Sanborn map coverage was not available for the subject property.

3.3 City Directories

Partner reviewed historical city directories obtained from EDR on April 10, 2019 for past names and businesses that were listed for the subject property and adjacent properties. The findings are presented in the following table:

City Directory Search for 12057 Fair Oaks Boulevard (Subject Property)

Year(s)	Occupant Listed
1971	Residential
1977	Engel Christian Homes
1982	Engel Christian Homes
1987	Engel Cristian Homes

City Directory Search for 12057 Fair Oaks Boulevard (Subject Property)	
Year(s)	**Occupant Listed**
1992	Engel Christian Homes
1995	Residential
2000	Residential
2005	Residential
2010	Residential
2014	Residential

Based on the city directory review, no environmentally sensitive listings were identified for the subject property address.

City Directory Search for Adjacent Properties	
Year(s)	**Occupant Listed**
1995	Occupant Unknown (12021 Fair Oaks Boulevard)
2005	Occupant Unknown (12009 Fair Oaks Boulevard); Residential (12021 Fair Oaks Boulevard)
2010	Occupant Unknown (12009 and 12021 Fair Oaks Boulevard)
2014	Residential (12021 Fair Oaks Boulevard)

Based on the city directory review, no environmentally sensitive listings were identified for the adjacent property addresses.

Copies of reviewed city directories are included in Appendix B of this report.

3.4 Historical Topographic Maps

Partner reviewed historical topographic maps obtained from EDR on April 8, 2019. The following was observed on the subject property and adjacent properties during the topographic map review:

Date:	*1891, 1892, 1893*
Subject Property:	Undeveloped
North:	Depicted with a river to the northeast; undeveloped in the remainder
South:	Undeveloped
East:	Undeveloped
West:	Undeveloped

Date:	*1902, 1911*
Subject Property:	No significant changes depicted
North:	Depicted as developed with an unimproved road to the northeast
South:	No significant changes depicted
East:	No significant changes depicted
West:	No significant changes depicted

Date:	*1951*
Subject Property:	Depicted as developed with agricultural fields
North:	Depicted as undeveloped land beyond an improved road
South:	Depicted as developed with a residence to the southeast; no other significant changes are depicted

Date: 1951	
East:	Depicted as developed with agricultural fields across Fair Oaks Boulevard
West:	No significant changes depicted

Date: 1967	
Subject Property:	Depicted as developed with the existing single-family residence on the northern portion of the property
North:	No significant changes depicted
South:	Depicted as further developed with two additional residences to the southeast
East:	No significant changes depicted
West:	No significant changes depicted

Date: 1975	
Subject Property:	No significant changes depicted
North:	Depicted as developed with the existing apartment homes to the north
South:	No significant changes are depicted
East:	No significant changes depicted
West:	No significant changes depicted

Date: 1980	
Subject Property:	No significant changes are depicted
North:	No significant changes are depicted
South:	Shaded to depict urban development to the southwest; no other significant changes are depicted
East:	Depicted as vacant land across Fair Oaks Boulevard
West:	No significant changes depicted

Date: 1992	
Subject Property:	Shaded to depict dense, urban development; no site-specific features are noted on the 1992 and 2012 maps
North:	Shaded to depict dense, urban development; no site-specific features are noted on the 1992 and 2012 maps
South:	Shaded to depict dense, urban development; no site-specific features are noted on the 1992 and 2012 maps
East:	Shaded to depict dense, urban development; no site-specific features are noted on the 1992 and 2012 maps
West:	Shaded to depict dense, urban development; no site-specific features are noted on the 1992 and 2012 maps

Copies of reviewed topographic maps are included in Appendix B of this report.

4.0 REGULATORY RECORDS REVIEW

4.1 Regulatory Agencies

4.1.1 Health Department

Regulatory Agency Data	
Name of Agency:	Sacramento County Environmental Management Department (SCEMD)
Point of Contact:	Natasha Drane
Agency Address:	10590 Armstrong Avenue, Mather
Agency Phone Number:	(916) 875-8484
Date of Contact:	April 18, 2019
Method of Communication:	Online
Summary of Communication:	No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the SCEMD.

Copies of pertinent documents are included in Appendix B of this report.

4.1.2 Fire Department

Regulatory Agency Data	
Name of Agency:	Sacramento Fire Department (SFD)
Point of Contact:	N/A
Agency Address:	5770 Freeport Boulevard, Suite 200, Sacramento
Agency Phone Number:	(916) 808-1300
Date of Contact:	January 4, 2019
Method of Communication:	Telephone
Summary of Communication:	Based on prior contact with the SFD, records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property would be on file with the SCEMD.

Copies of pertinent documents are included in Appendix B of this report.

4.1.3 Air Pollution Control Agency

Regulatory Agency Data	
Name of Agency:	Sacramento Metropolitan Air Quality Management District (SMAQMD)
Point of Contact:	Virginia Muller
Agency Address:	777 12th Street, Third Floor, Sacramento
Agency Phone Number:	(916)874-4809
Date of Contact:	April 18, 2019
Method of Communication:	Online/Email
Summary of Communication:	No Permits to Operate (PTO), Notices of Violation (NOV), or Notices to Comply (NTC) or the presence of AULs, dry cleaning machines, or USTs were on file for the subject property with the SMAQMD.

Copies of pertinent documents are included in Appendix B of this report.

4.1.4 Regional Water Quality Agency

Regulatory Agency Data	
Name of Agency:	Central Valley Regional Water Quality Control Board (CVRWQCB)
Point of Contact:	http://geotracker.waterboards.ca.gov/
Agency Address:	11020 Sun Center Drive, Rancho Cordova
Agency Phone Number:	(916) 464-3291
Date of Contact:	April 18, 2019
Method of Communication:	Online
Summary of Communication:	No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the CVRWQCB.

Copies of pertinent documents are included in Appendix B of this report.

4.1.5 Department of Toxic Substances Control

Regulatory Agency Data	
Name of Agency:	California Department of Toxic Substances Control (DTSC)
Point of Contact:	https://www.envirostor.dtsc.ca.gov/public/
Agency Address:	8800 Cal Center Drive, Sacramento
Agency Phone Number:	(916) 255-3545
Date of Contact:	April 18, 2019
Method of Communication:	Online
Summary of Communication:	No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the DTSC.

Copies of pertinent documents are included in Appendix B of this report.

4.1.6 Building Department

Regulatory Agency Data	
Name of Agency:	Citrus Heights Building and Permit Department (CHBPD)
Point of Contact:	Greg Anderson
Agency Address:	6360 Fountain Square Drive, Citrus Heights
Agency Phone Number:	(916) 727-4760
Date of Contact:	April 22, 2019
Method of Communication:	Telephone/Email
Summary of Communication:	As of the date of this report, Partner has not received a response from the CHBPD for inclusion in this report.

4.1.7 Planning Department

Regulatory Agency Data	
Name of Agency:	Fair Oaks Planning District (FOPD)
Point of Contact:	http://www.per.saccounty.net/Documents/Maps/fair-oaks-cp.pdf
Agency Address:	5229 Hazel Avenue, Suite B, Fair Oaks
Agency Phone Number:	(916) 875-2593
Date of Contact:	April 18, 2019
Method of Communication:	Online

Regulatory Agency Data	
Summary of Communication:	According to records reviewed, the subject property is RD10 for medium density residential development by the City of Fair Oaks.

Copies of pertinent documents are included in Appendix B of this report.

4.1.8 Oil & Gas Exploration

Regulatory Agency Data	
Name of Agency:	California Division of Oil, Gas and Geothermal Resources (DOGGR)
Point of Contact:	https://maps.conservation.ca.gov/doggr/wellfinder/#close/-118.94276/37.12009/6
Agency Address:	801 K Street, Sacramento
Agency Phone Number:	(916) 445-0692
Date of Contact:	April 18, 2019
Method of Communication:	Online
Summary of Communication:	According to DOGGR, no oil or gas wells are located on or adjacent to the subject property.

Copies of pertinent documents are included in Appendix B of this report.

4.1.9 Assessor's Office

Regulatory Agency Data	
Name of Agency:	Sacramento County Assessor
Point of Contact:	http://assessorparcelviewer.saccounty.net/jsviewer/assessor.html
Agency Address:	3701 Power Inn Road, Sacramento
Agency Phone Number:	(916) 875-0730
Date of Contact:	April 18, 2019
Method of Communication:	Online
Summary of Communication:	According to records reviewed, the subject property is identified by APNs 233-0430-041, 233-0430-007, and 233-0430-002 and ownership has been vested in Christian Engel 2004 Revocable Trust since at least 2004, and Randhir Heer since March 5, 2015. The current building was constructed in 1966 and totals 2,940 square feet on a 4.56-acre lot.

Copies of pertinent documents are included in Appendix B of this report.

4.2 Mapped Database Records Search

Information from standard federal, state, county, and city environmental record sources was provided by Environmental Data Resources, Inc. (EDR). Data from governmental agency lists are updated and integrated into one database, which is updated as these data are released. The information contained in this report was compiled from publicly available sources and the locations of the sites are plotted utilizing a geographic information system, which geocodes the site addresses. The accuracy of the geocoded locations is approximately +/-300 feet.

Using the ASTM definition of migration, Partner considers the migration of hazardous substances or petroleum products in any form onto the subject property during the evaluation of each site listed on the radius report, which includes solid, liquid, and vapor.

4.2.1 Regulatory Database Summary

Radius Report Data				
Database	**Search Radius (mile)**	**Subject Property**	**Adjacent Properties**	**Sites of Concern**
Federal NPL or Delisted NPL Site	1.00	N	N	N
Federal CERCLIS Site	0.50	N	N	N
Federal CERCLIS-NFRAP Site	0.50	N	N	N
Federal RCRA CORRACTS Facility	1.00	N	N	N
Federal RCRA TSDF Facility	0.50	N	N	N
Federal RCRA Generators Site (LQG, SQG, CESQG)	0.25	N	N	N
Federal IC/EC Registries	0.50	N	N	N
Federal ERNS Site	Subject Property	N	N	N
State/Tribal Equivalent NPL	1.00	N	N	N
State/Tribal Equivalent CERCLIS	1.00	N	N	N
State/Tribal Landfill/Solid Waste Disposal Site	0.50	N	N	N
State/Tribal Leaking Storage Tank Site	0.50	N	N	N
State/Tribal Registered Storage Tank Sites (UST/AST)	0.25	N	N	N
State/Tribal Voluntary Cleanup Sites (VCP)	0.50	N	N	N
State/Tribal Spills	0.50	N	N	N
Federal Brownfield Sites	0.50	N	N	N
State Brownfield Sites	0.50	N	N	N
EDR MGP	Varies	N	N	N
EDR US Hist Auto Station	Varies	N	N	N
EDR US Hist Cleaners	Varies	N	N	N

4.2.2 Subject Property Listings

The subject property is not identified in the regulatory database report.

4.2.3 Adjacent Property Listings

The adjacent properties are not identified in the regulatory database report.

4.2.4 Sites of Concern Listings

No sites of concern are identified in the regulatory database report. Listed sites within the specified search radius of the subject property which appeared on local, State, or Federally published lists of sites that have had releases of hazardous substances, have been granted regulatory closure, were determined to be of sufficient distance, and/or are situated hydrologically cross- or down-gradient such that impact to the subject property is unlikely. Based on the findings, vapor migration is not expected to represent a significant environmental concern at this time.

4.2.5 Orphan Listings

Partner reviewed EDR's Orphan Summary, which is a listing of sites that have not been geocoded based on lack of sufficient data regarding their exact location within the general area. The subject property was not identified as an Unmapped Site.

None of the Unmapped Sites identified on the Orphan Summary appear to be located within the ASTM-designated radii of the subject property, and therefore, Partner has no reason to believe that these sites had an impact on the subject property.

A copy of the regulatory database report is included in Appendix C of this report.

5.0 USER PROVIDED INFORMATION AND INTERVIEWS

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the *Brownfields Amendments*), the *User* must conduct the following inquiries required by 40 CFR 312.25, 312.28, 312.29, 312.30, and 312.31. The *User* should provide the following information to the *environmental professional*. Failure to provide this information could result in a determination that *all appropriate inquiries* is not complete. The *User* is asked to provide information or knowledge of the following:

- Review Title and Judicial Records for Environmental Liens and AULs
- Specialized Knowledge or Experience of the User
- Actual Knowledge of the User
- Reason for Significantly Lower Purchase Price
- Commonly Known or *Reasonably Ascertainable* information
- Degree of Obviousness
- Reason for Preparation of this Phase I ESA

Fulfillment of these user responsibilities is key to qualification for the identified defenses to CERCLA liability. Partner requested our Client to provide information to satisfy User Responsibilities as identified in Section 6 of the ASTM guidance.

Pursuant to ASTM E1527-13, Partner requested the following site information from Stamas Corporation (User of this report).

User Responsibilities				
Item	**Provided By User**	**Not Provided By User**	**Discussed Below**	**Does Not Apply**
Environmental Pre-Survey Questionnaire			**X**	
Title Records, Environmental Liens, and AULs			**X**	
Specialized Knowledge			**X**	
Actual Knowledge			**X**	
Valuation Reduction for Environmental Issues			**X**	
Identification of Key Site Manager	**Section 5.1.3**			
Reason for Performing Phase I ESA	**Section 1.1**			
Prior Environmental Reports		**X**		
Other		**X**		

5.1 Interviews

5.1.1 Interview with Owner

The owner of the subject property since 2004, identified as Christian Engel 2004 Revocable Trust, was not available to be interviewed at the time of the assessment.

5.1.2 Interview with Report User

Please refer to Section 5.2 below for information requested from the Report User.

5.1.3 Interview with Key Site Manager

A key site manager was not available to be interviewed at the time of this assessment.

5.1.4 Interviews with Past Owners, Operators and Occupants

Interviews with past owners, operators and occupants were not conducted since information regarding the potential for contamination at the subject property was obtained from other sources.

5.1.5 Interview with Others

As the subject property is not an abandoned property as defined in ASTM 1527-13, interview with others were not performed.

5.2 User Provided Information

5.2.1 Title Records, Environmental Liens, and AULs

Partner was not provided with title records or environmental lien and AUL information for review as part of this assessment.

5.2.2 Specialized Knowledge

The User did not have specialized knowledge of environmental conditions associated with the subject property at the time of the assessment.

5.2.3 Actual Knowledge of the User

The User was not aware of environmental liens and/or AULs encumbering the subject property or in connection with the subject property at the time of the assessment.

5.2.4 Valuation Reduction for Environmental Issues

The User was not aware of any reductions in property value due to environmental issues.

5.2.5 Commonly Known or Reasonably Ascertainable Information

The User did not provide information that is commonly known or *reasonably ascertainable* within the local community about the subject property at the time of the assessment.

5.2.6 Previous Reports and Other Provided Documentation

No previous reports or other pertinent documentation was provided to Partner for review during the course of this assessment.

6.0 SITE RECONNAISSANCE

The weather at the time of the site visit was sunny and clear. Refer to Section 1.5 for limitations encountered during the field reconnaissance and Sections 2.1 and 2.2 for subject property operations. The table below provides the site assessment details:

Site Assessment Data	
Site Assessment Performed By:	Mark Lerner
Site Assessment Conducted On:	April 16, 2019

No subject property personnel were available to be interviewed at the time of the assessment.

No potential environmental concerns were identified during the onsite reconnaissance.

6.1 General Site Characteristics

6.1.1 Solid Waste Disposal

Solid waste generated at the subject property is disposed of in a residential trash bin located east on the subject property. An independent solid waste disposal contractor, Republic Services, removes solid waste from the subject property. According to information obtained from the report user and onsite reconnaissance, only household trash is collected in the on-site solid waste dumpsters.

6.1.2 Sewage Discharge and Disposal

Sanitary discharges on the subject property are directed into the municipal sanitary sewer system. The City of Fair Oaks services the subject property vicinity. No wastewater treatment facilities or septic systems were observed or reported on the subject property.

6.1.3 Surface Water Drainage

Storm water is removed from the subject property primarily by percolation into the ground surface. Site storm water from roofs, landscaped areas, and paved areas is directed to on-site swales, which drain to the public right of way, and to on-site storm water drains. The subject property is connected to a municipal owned and maintained storm drain system.

The subject property does not appear to be a designated wetland area, based on information obtained from the United States Fish & Wildlife Service; however, a comprehensive wetlands survey would be required in order to formally determine actual wetlands on the subject property. No surface impoundments, wetlands, natural catch basins, settling ponds, or lagoons are located on the subject property. No drywells were identified on the subject property.

6.1.4 Source of Heating and Cooling

Heating and cooling systems as well as domestic hot water equipment are fueled by electricity and natural gas provided by the Sacramento Metropolitan Utility District (SMUD) and Pacific Gas & Electric (PG&E). The mechanical system is comprised of a window-mounted PTAC system and a natural gas fired furnace. Hot water is provided by a natural gas hot water heater(s).

6.1.5 Wells and Cisterns

No aboveground evidence of wells or cisterns was observed during the site reconnaissance.

6.1.6 Wastewater

Domestic wastewater generated at the subject property is disposed by means of the sanitary sewer system. No industrial process is currently performed at the subject property.

6.1.7 Septic Systems

No septic systems were observed or reported on the subject property.

6.1.8 Additional Site Observations

No additional general site characteristics were observed during the site reconnaissance.

6.2 Potential Environmental Hazards

6.2.1 Hazardous Substances and Petroleum Products Used or Stored at the Site

No hazardous substances or petroleum products were observed on the subject property during the site reconnaissance.

6.2.2 Aboveground & Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs/USTs)

No evidence of current or former ASTs or USTs was observed during the site reconnaissance.

6.2.3 Evidence of Releases

No spills, stains or other indications that a surficial release has occurred at the subject property were observed.

6.2.4 Polychlorinated Biphenyls (PCBs)

No potential PCB-containing equipment (transformers, oil-filled switches, hoists, lifts, dock levelers, hydraulic elevators, etc) was observed on the subject property during Partner's reconnaissance.

6.2.5 Strong, Pungent or Noxious Odors

No strong, pungent or noxious odors were evident during the site reconnaissance.

6.2.6 Pools of Liquid

No pools of liquid were observed on the subject property during the site reconnaissance.

6.2.7 Drains, Sumps and Clarifiers

No drains, sumps, or clarifiers, other than those associated with storm water removal, were observed on the subject property during the site reconnaissance.

6.2.8 Pits, Ponds and Lagoons

No pits, ponds or lagoons were observed on the subject property.

6.2.9 Stressed Vegetation

No stressed vegetation was observed on the subject property.

6.2.10 Additional Potential Environmental Hazards

No additional environmental hazards, including landfill activities or radiological hazards, were observed.

6.3 Non-ASTM Services

6.3.1 Asbestos-Containing Materials (ACMs)

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.1101 requires certain construction materials to be *presumed* to contain asbestos, for purposes of this regulation. All thermal system insulation (TSI), surfacing material, and asphalt/vinyl flooring that are present in a building constructed prior to 1981 and have not been appropriately tested are "presumed asbestos-containing material" (PACM).

The subject property building was constructed in 1966 and may have asbestos containing materials (ACMs: materials containing >1% asbestiform components determined by the EPA 600/R-93/116 Method using Polarized Light Microscopy) present. The table below outlines suspect ACM that is generally found in buildings of this age:

Suspect ACMs

Suspect ACM	Location	Friable Yes/No	Physical Condition
Drywall Systems	Throughout Building Interior	No	Good
Floor Tiles	Throughout Building Interior	No	Good
Floor Tile Mastic	Throughout Building Interior	No	Good
Spray-Applied Acoustical Material	Throughout Building Interior	Yes	Good
Stucco	Throughout Building Exterior	Yes	Good

The limited visual survey consisted of noting observable materials (materials which were readily accessible and visible during the course of the site reconnaissance) that are commonly known to potentially contain asbestos. This activity was not designed to discover all sources of suspect ACM, PACM, or asbestos at the site; or to comply with any regulations and/or laws relative to planned disturbance of building materials such as renovation or demolition, or any other regulatory purpose. Rather, it is intended to give the User an indication if significant (significant due to quantity, accessibility, or condition) potential sources of ACM or PACM are present at the subject property. Additional sampling, assessment, and evaluation will be warranted for any other use.

Partner was not provided building plans or specifications for review, which may have been useful in determining areas likely to have used ACM.

According to the US EPA, ACM and PACM that is intact and in good condition can, in general, be managed safely in-place under an Operations and Maintenance (O&M) Program until removal is dictated by renovation, demolition, or deteriorating material condition. Prior to any disturbance of the construction materials within this facility, a comprehensive ACM survey is recommended.

6.3.2 Lead-Based Paint (LBP)

Lead is a highly toxic metal that affects virtually every system of the body. LBP is defined as any paint, varnish, stain, or other applied coating that has 1 mg/cm^2 (or 5,000 ug/g or 0.5% by weight) or more of lead. Congress passed the Residential Lead-Based Paint Hazard Reduction Act of 1992, also known as "Title X", to protect families from exposure to lead from paint, dust, and soil. Under Section 1017 of Title X, intact LBP on most walls and ceilings is not considered a "hazard," although the condition of the paint should be monitored and maintained to ensure that it does not become deteriorated. Further, Section 1018 of this law directed the Housing and Urban Development (HUD) and the US EPA to require the disclosure of known information on LBP and LBP hazards before the sale or lease of most housing built before 1978.

Based on the age of the subject property building (pre-1978), there is a potential that LBP is present. Interior and exterior painted surfaces were observed in good condition and therefore not expected to represent a "hazard," although the condition of the paint should be monitored and maintained to ensure that it does not become deteriorated.

6.3.3 Radon

Radon is a colorless, odorless, naturally occurring, radioactive, inert, gaseous element formed by radioactive decay of radium (Ra) atoms. The US EPA has prepared a map to assist National, State, and local organizations to target their resources and to implement radon-resistant building codes. The map divides the country into three Radon Zones, according to the table below:

EPA Radon Zones		
EPA Zones	**Average Predicted Radon Levels**	**Potential**
Zone 1	Exceed 4.0 pCi/L	Highest
Zone 2	Between 2.0 and 4.0 pCi/L	Moderate
Zone 3	Less than 2.0 pCi/L	Low

It is important to note that the EPA has found homes with elevated levels of radon in all three zones, and the US EPA recommends site-specific testing in order to determine radon levels at a specific location. However, the map does give a valuable indication of the propensity of radon gas accumulation in structures.

Radon sampling was not conducted as part of this assessment. Review of the US EPA Map of Radon Zones places the subject property in Zone 3. Based upon the radon zone classification, radon is not considered to be a significant environmental concern.

6.3.4 Lead in Drinking Water

According to available information, a public water system operated by the Fair Oaks Water District serves the subject property vicinity. According to the 2017 Consumer Confidence Report, shallow groundwater beneath the subject property is not utilized for domestic purposes. The sources of public water for Fair Oaks is surface water from the American River (65%) which is supplemented by groundwater (35%). According to the Fair Oaks Water District and the 2017 Annual Water Quality Report, water supplied to the subject property is in compliance with all State and Federal regulations pertaining to drinking water standards, including lead and copper. Water sampling was not conducted to verify water quality.

6.3.5 Mold

Molds are microscopic organisms found virtually everywhere, indoors and outdoors. Mold will grow and multiply under the right conditions, needing only sufficient moisture (e.g.in the form of very high humidity, condensation, or water from a leaking pipe, etc.) and organic material (e.g., ceiling tile, drywall, paper, or natural fiber carpet padding).

Partner observed accessible, interior areas for the subject property building for significant evidence of mold growth with the exceptions detailed in Section 1.5 of this report; however, this ESA should not be used as a mold survey or inspection. Additionally, this limited assessment was not designed to assess all areas of potential mold growth that may be affected by mold growth on the subject property. Rather, it is intended to give the client an indication as to whether or not conspicuous (based on observed areas) mold growth is present at the subject property. This evaluation did not include a review of pipe chases, mechanical systems, or areas behind enclosed walls and ceilings.

No obvious indications of water damage or mold growth were observed during Partner's visual assessment.

6.4 Adjacent Property Reconnaissance

The adjacent property reconnaissance consisted of observing the adjacent properties from the subject property premises. No items of environmental concern were identified on the adjacent properties during the site assessment, including hazardous substances, petroleum products, ASTs, USTs, evidence of releases, PCBs, strong or noxious odors, pools of liquids, sumps or clarifiers, pits or lagoons, stressed vegetation, or any other potential environmental hazards.

7.0 FINDINGS AND CONCLUSIONS

Findings

A *recognized environmental condition (REC)* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. The following was identified during the course of this assessment:

- Partner did not identify any recognized environmental conditions during the course of this assessment.

A *controlled recognized environmental condition (CREC)* refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. The following was identified during the course of this assessment:

- Partner did not identify any controlled recognized environmental conditions during the course of this assessment.

A *historical recognized environmental condition (HREC)* refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. The following was identified during the course of this assessment:

- Partner did not identify any historical recognized environmental conditions during the course of this assessment.

An *environmental issue* refers to environmental concerns identified by Partner, which do not qualify as RECs; however, warrant further discussion. The following was identified during the course of this assessment:

- The subject property parcel was historically used for agricultural purposes. There is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used and stored onsite. The subject property is either paved over or covered by building structures that minimize direct contact to any potential remaining concentrations in the soil. Additionally, during previous site development activities, near surface soils (where residual agricultural chemical concentrations would have most likely been present, if at all) were likely mixed with fill material or disturbed during grading. Also, it is common that engineered fill material is placed over underlying soils as part of the development activities. These additional variables serve to further reduce the potential for exposure to residual agricultural chemicals (if any). Based on these reasons, Partner concludes that the possible former use of agricultural chemicals is not expected to represent a significant environmental concern at this time.

- Due to the age of the subject property building/buildings, there is a potential that asbestos-containing material (ACM) and lead-based paint (LBP) are present. Overall, all suspect ACMs and painted surfaces were observed in good condition and do not pose a health and safety concern to the occupants of the subject property at this time. Should these materials be replaced, the identified suspect ACMs would need to be sampled to confirm the presence or absence of asbestos prior to any renovation or demolition activities to prevent potential exposure to workers and/or building occupants.

Conclusions, Opinions and Recommendations

Partner has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of 12057 Fair Oaks Boulevard in Fair Oaks, Sacramento County, California (the "subject property"). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property; however, environmental issues were identified. Based on the conclusions of this assessment, Partner recommends no further investigation of the subject property at this time.

8.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Partner has performed a Phase I Environmental Site Assessment of the property located at 12057 Fair Oaks Boulevard in Fair Oaks, Sacramento County, California in conformance with the scope and limitations of the protocol and the limitations stated earlier in this report. Exceptions to or deletions from this protocol are discussed earlier in this report.

By signing below, Partner declares that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR §312. Partner has the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the subject *property*. Partner has developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:

DRAFT

Mark Lerner
Staff Assessor

Reviewed By:

DRAFT

Michael Eng, M.S.
Senior Author

9.0 REFERENCES

Reference Documents

American Society for Testing and Materials, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation: E1527-13.

Environmental Data Resources (EDR), Radius Report, April 2019

Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, accessed via internet, April 2019

United States Department of Agriculture, Natural Resources Conservation Service, accessed via internet, April 2019

United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, accessed via the internet, April 2019

United States Environmental Protection Agency, EPA Map of Radon Zones (Document EPA-402-R-93-071), accessed via the internet, April 2019

United States Geological Survey, accessed via the Internet, April 2019

United States Geological Survey Topographic Map 1995, 7.5 minute series, accessed via internet, April 2019

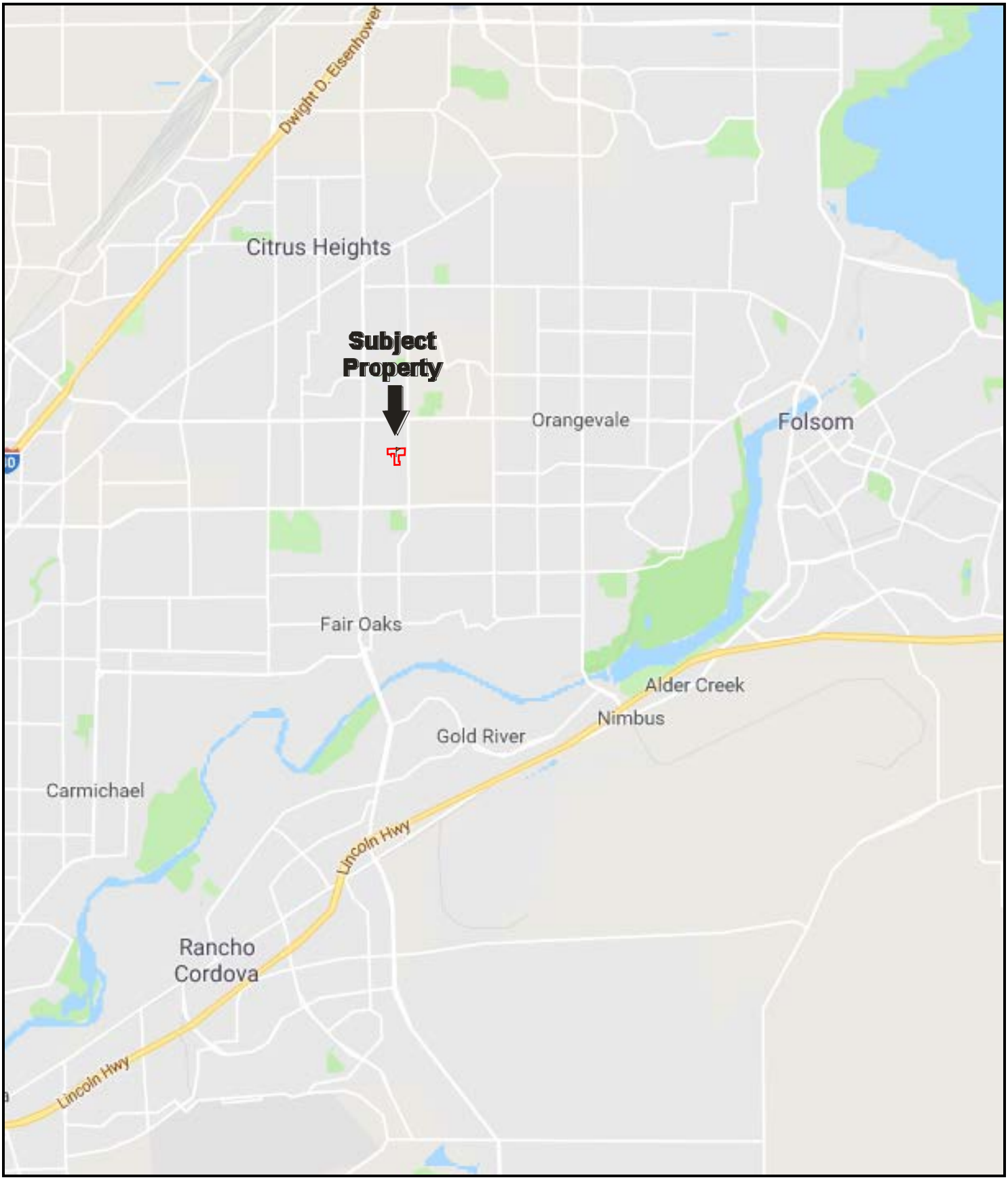
FIGURES

1 SITE LOCATION MAP

2 SITE PLAN

3 TOPOGRAPHIC MAP

PARTNER



N

Drawing Not To Scale

KEY:
Subject Property

FIGURE 1: SITE LOCATION MAP
Project No. 19-243045.1

PARTNER

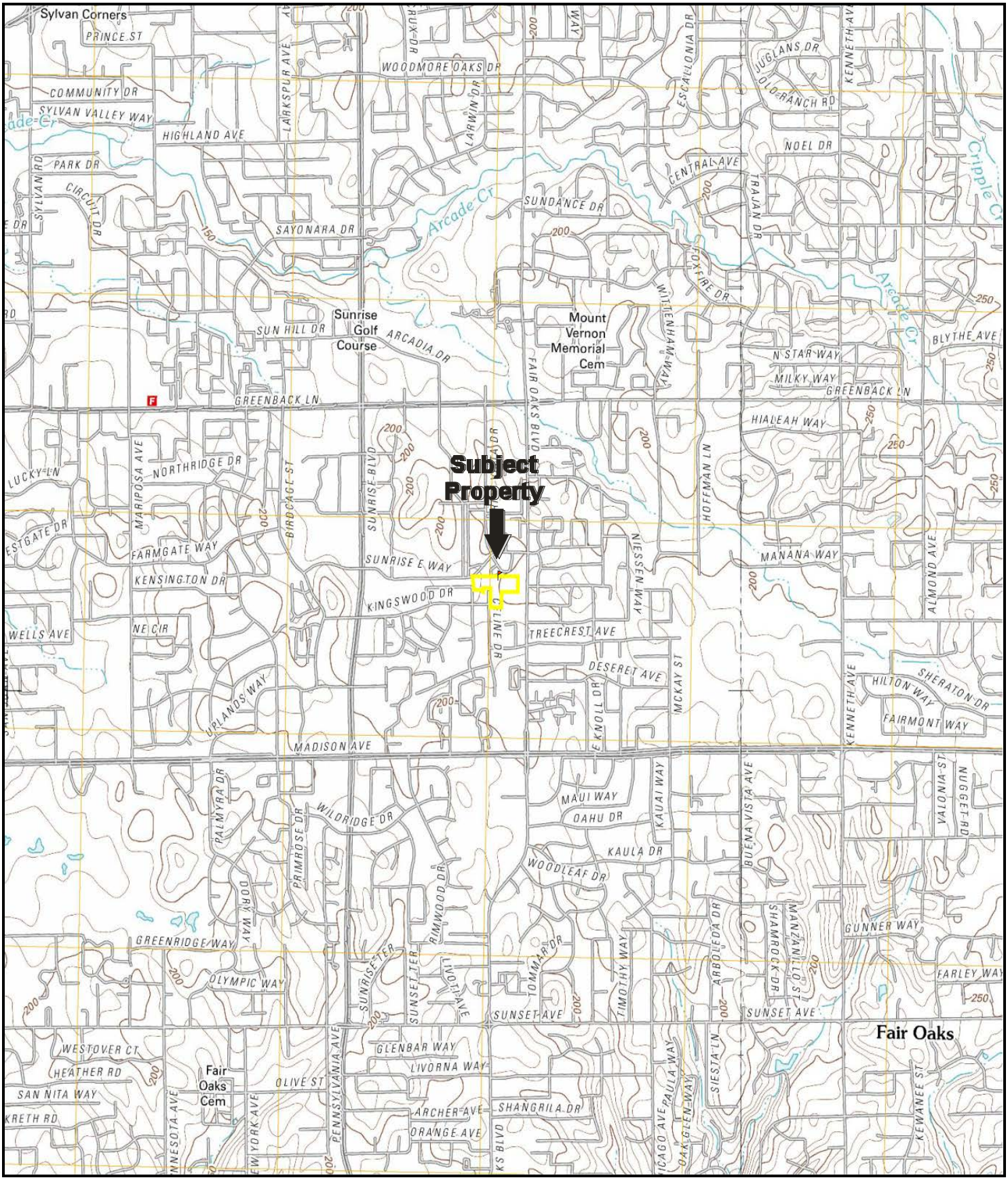
N

GROUNDWATER FLOW

KEY:
Subject Property

FIGURE 2: SITE PLAN
Project No. 19-243045.1

PARTNER



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USGS 7.5 Minute *Citrus Heights, California* Quadrangle
Created: 2012

KEY:
Subject Property

FIGURE 3: TOPOGRAPHIC MAP
Project No. 19-243045.1

PARTNER

APPENDIX A: SITE PHOTOGRAPHS

1. View of the entrance to the subject property along Fair Oaks Boulevard

2. View of the driveway of the subject property along Fair Oaks Boulevard

3. View of the northeastern portion of the subject property

4. View of the eastern portion of the subject property

5. View of the central western portion of the subject property

6. View of the western portion of the subject property

7. View of the west-southwest portion of the subject property

8. View of the single-family residence located centrally north on the subject property

9. View of the northern elevation of the single-family residence

10. View of the northern portion of the property

11. View from the northwestern corner of the property facing south

12. View from the northwestern corner of the property facing east

13. View of the animal husbandry operations

14. View of the western elevation of the animal husbandry barn located north on the property

15. View of the northeastern portion of the property facing southeast

16. View of the eastern elevation of the subject property building

17. View of the entrance along Celine Drive

18. View of a typical residence to the southwest (5706 Celine Drive)

19. View of a typical residence to the south (5636 Gitta Ria Court)

20. View of the southeastern adjacent residence (12021 Fair Oaks Boulevard)

21. View of an east-adjacent residence (8102 Walnut Hills Way)

22. View of an east-adjacent residence (5801 Shelldrake Court)

23. View of the north-adjacent Sierra Square Apartments (8059 Targa Circle)

24. View of the Transformer Station to the north (8028 Sunrise East Way)

APPENDIX B: HISTORICAL/REGULATORY DOCUMENTATION

12057 Fair Oaks Boulevard

12057 Fair Oaks Boulevard

Citrus Heights, CA 95610

Inquiry Number: 5614353.8

April 08, 2019

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

04/08/19

Site Name:

12057 Fair Oaks Boulevard
12057 Fair Oaks Boulevard
Citrus Heights, CA 95610
EDR Inquiry # 5614353.8

Client Name:

Partner Engineering and Science, Inc.
2154 Torrance Blvd, Suite 200
Torrance, CA 90501-0000
Contact: Aimee Tamayo

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	***Scale***	***Details***	***Source***
1937	1"=500'	Flight Date: August 17, 1937	USDA
1947	1"=500'	Flight Date: July 28, 1947	USGS
1952	1"=500'	Flight Date: July 24, 1952	USGS
1957	1"=500'	Flight Date: August 24, 1957	USDA
1964	1"=500'	Flight Date: May 19, 1964	USDA
1966	1"=500'	Flight Date: August 04, 1966	USGS
1972	1"=500'	Flight Date: July 06, 1972	USDA
1984	1"=500'	Flight Date: June 08, 1984	USDA
1993	1"=500'	Flight Date: May 23, 1993	USDA
1998	1"=500'	Acquisition Date: August 17, 1998	USGS/DOQQ
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2016	1"=500'	Flight Year: 2016	USDA/NAIP

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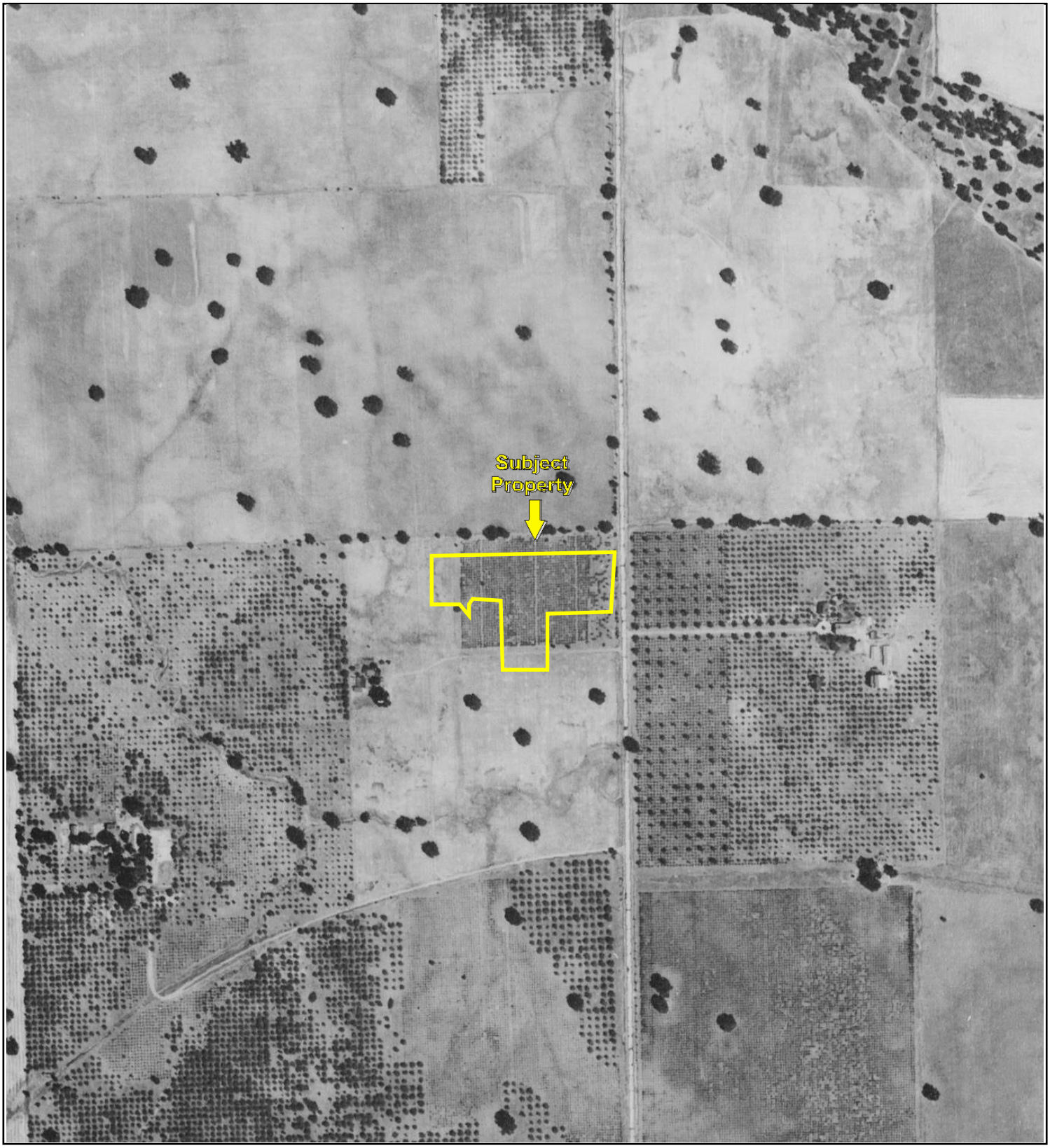
Aerial Photograph Year: 1937



500 1000 2000

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Key: Subject Property

APPENDIX B: AERIAL PHOTOGRAPHS

Project No. 19-243045.1

PARTNER

Aerial Photograph Year: 1947

500 1000 2000

N

Key: Subject Property

Aerial Photograph Year: 1952

500 1000 2000

N

Key: Subject Property

Aerial Photograph Year: 1957

500 1000 2000

N

Key: Subject Property

Aerial Photograph Year: 1964

500 1000 2000

N

Key: Subject Property

Aerial Photograph Year: 1966

500 1000 2000

N

Key: Subject Property

APPENDIX B: AERIAL PHOTOGRAPHS

Project No. 19-243045.1

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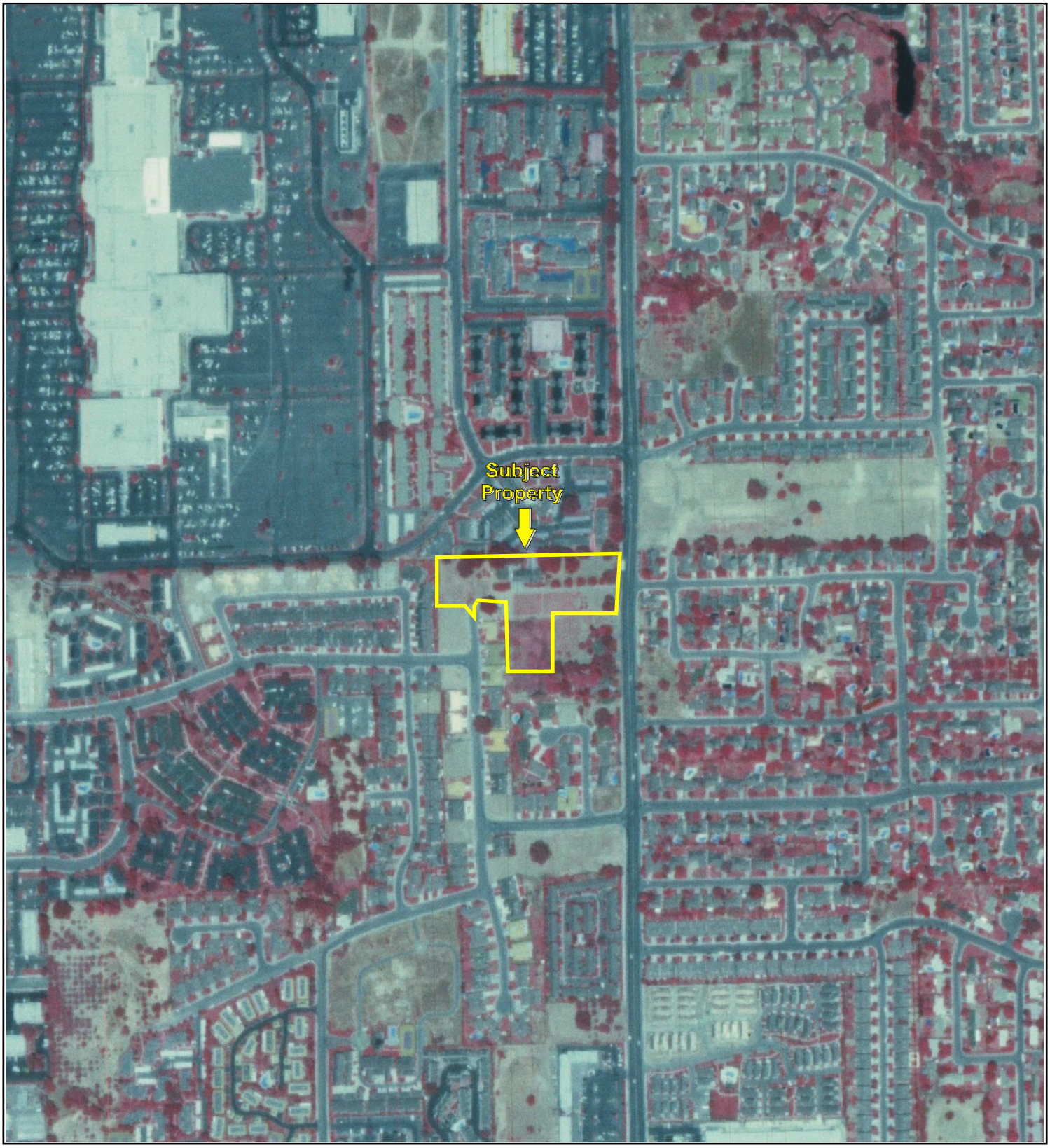
Key: Subject Property

Aerial Photograph Year: 1984



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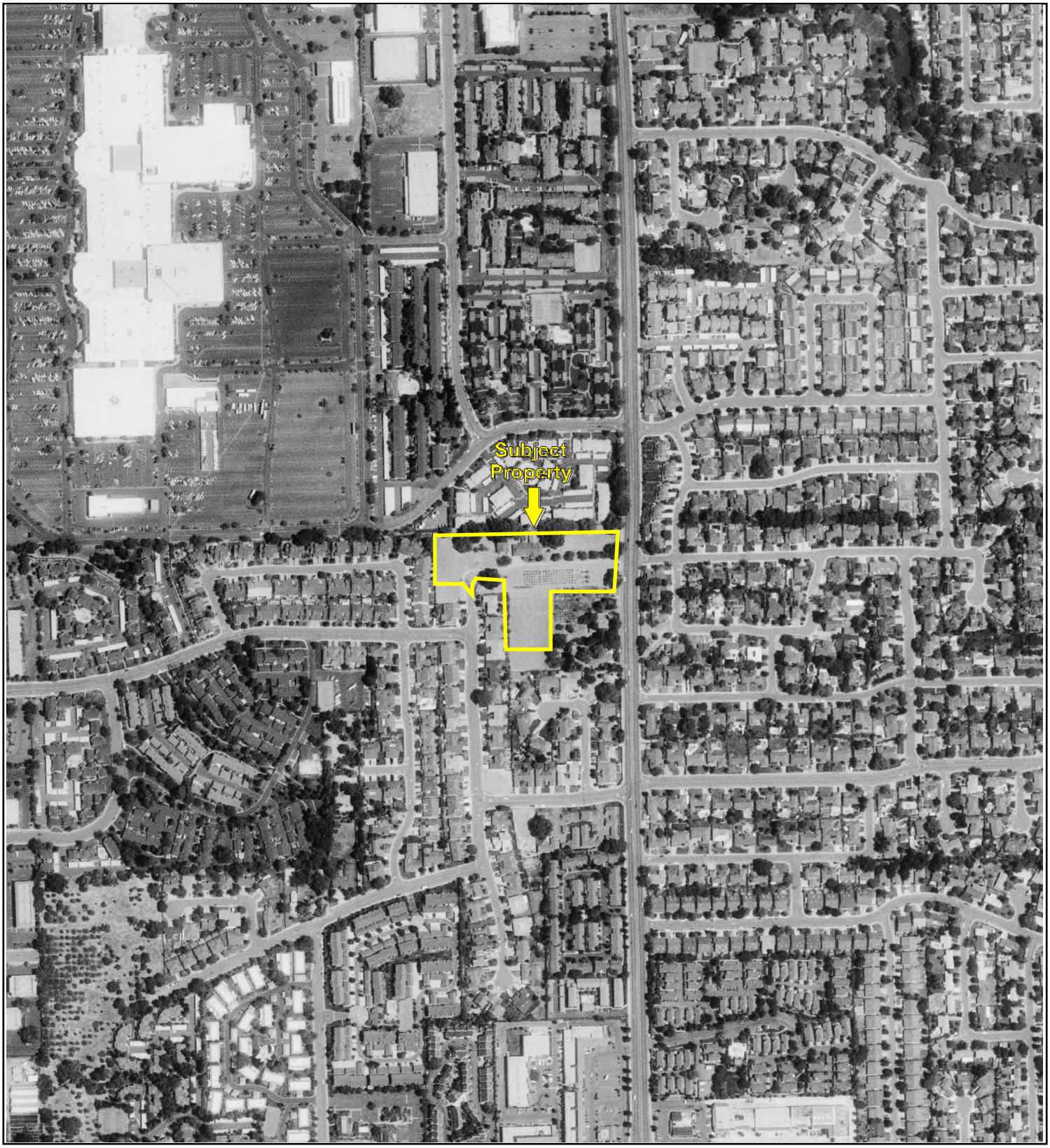
Key: Subject Property

Aerial Photograph Year: 1993



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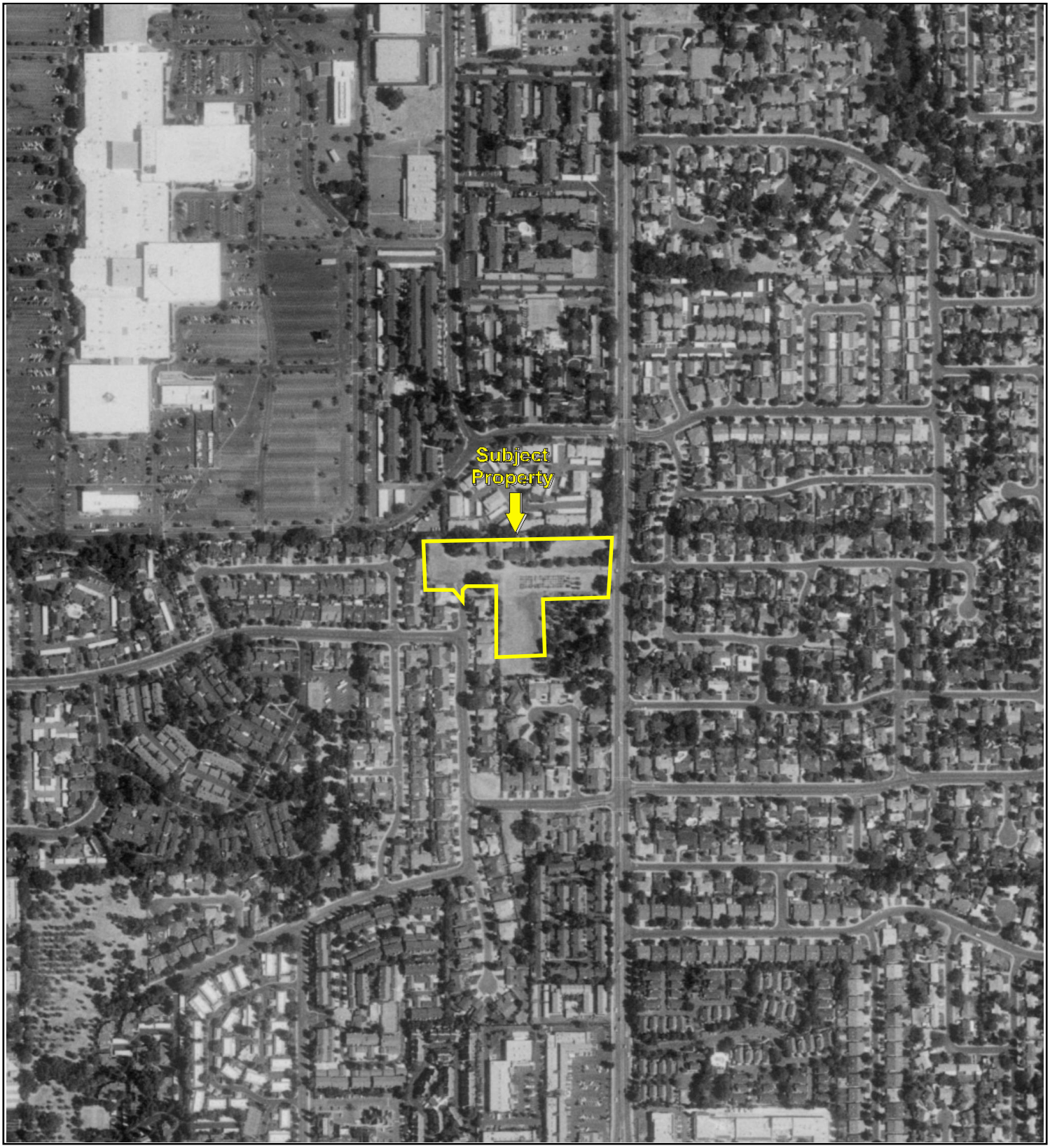
Key: Subject Property

Aerial Photograph Year: 1998



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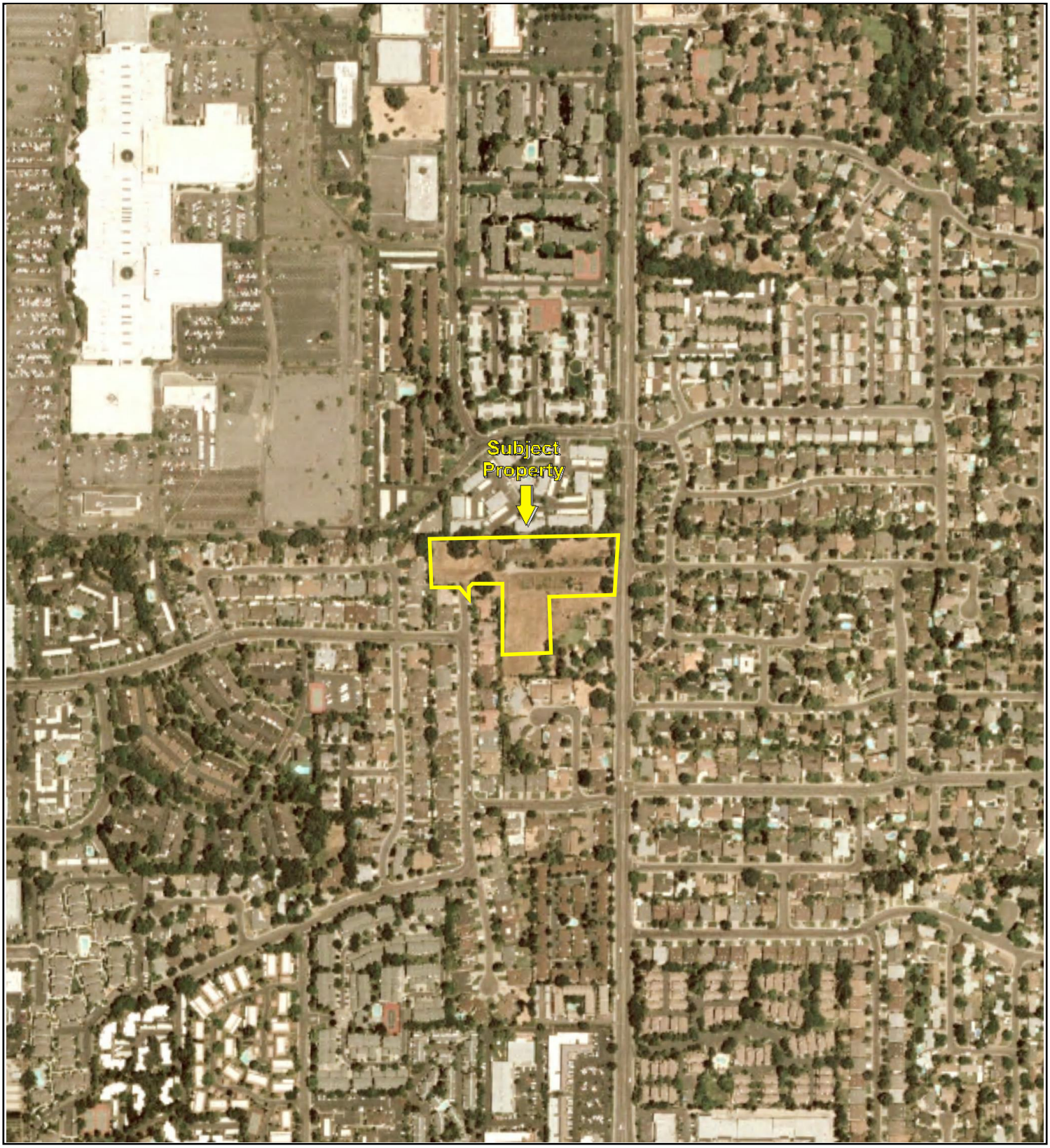
Key: Subject Property

Aerial Photograph Year: 2006



500 1000 2000

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Key: Subject Property

Aerial Photograph Year: 2009

500 1000 2000

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Key: Subject Property

Aerial Photograph Year: 2012

500 1000 2000

N

Key: Subject Property

Aerial Photograph Year: 2016

500 1000 2000

N

Key: Subject Property

12057 Fair Oaks Boulevard

12057 Fair Oaks Boulevard
Citrus Heights, CA 95610

Inquiry Number: 5614353.5
April 10, 2019

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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SECTION

Executive Summary

Findings

City Directory Images

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with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☐	EDR Digital Archive
1987	☑	☐	EDR Digital Archive
1982	☑	☐	EDR Digital Archive
1977	☑	☐	EDR Digital Archive
1971	☑	☐	HAINES AND COMPANY
1966	☐	☐	POLK DIRECTORY CO
1963	☐	☐	POLK DIRECTORY CO

FINDINGS

TARGET PROPERTY STREET

12057 Fair Oaks Boulevard
Citrus Heights, CA 95610

Year	*CD Image*	*Source*	
FAIR OAKS BLVD			
2014	pg A2	EDR Digital Archive	
2010	pg A4	EDR Digital Archive	
2005	pg A6	EDR Digital Archive	
2000	pg A8	EDR Digital Archive	
1995	pg A9	EDR Digital Archive	
1992	pg A10	EDR Digital Archive	
1987	pg A11	EDR Digital Archive	
1982	pg A12	EDR Digital Archive	
1977	pg A13	EDR Digital Archive	
1971	pg A14	HAINES AND COMPANY	
1966	-	POLK DIRECTORY CO	Street not listed in Source
1963	-	POLK DIRECTORY CO	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 2014

11970	STEWART, CIERA B
11980	RIVES, JEANIE V
11990	OCCUPANT UNKNOWN,
12000	BURROWS, DAVID A
12021	FOOTE, CAROLYN A
12023	CAL STATE FENCE AND CNSTR
	GALLEGOS, JENNIFER L
12057	ENGEL, STEPHANIE Z
12200	KROUSE, THOMAS D
12202	BLACKNEY, BROOKE
	CULOTTA, PAULA D
	DURAN, JAMES P
	FAIR OAKS MEADOWS APTS
	GODSEY, MELISSA
	JCM FAIR OAKS
	RATHJEN, SCOTT
	SIMMONS, NICOLE Y
	THOMAS, KRISTI
	WESSLING, RON D
12206	BOURKE, SCOTT
	NISHIJIMA, PETER A
	OCONNORS, MICHAEL
	ROSE, NINA
12208	FEIGHT, KATHY E
	HALL, EVA M
	HANGAR 3 PRODUCTIONS
	HASTINGS, AMBER
	JAHANI, AFSANEH
	MCHATTON, LAURA
	RANDALL, ROBERT B
	SMITH, PEPPER
	STOKES, CRYSTAL
	SUHRIE PRTNERS A CAL LTD PRTNR
	VESTAL, ALLEN J
12210	HANES, ANDREA
	KUCKELMANN, JOY
	LI, TAO
	LIOTTA, ANTHONY J
	LUI, MICHAEL D
	MCLAIN, LUKE
	PAULSEN, HEIDI
	PRITCHETT, JEAN L
	ROSENSTRAUCH, KRIS L
	STUCKEY, MARCELLE R
	WOODWARD, KIMBERLY A
12212	BAILEY, KATE
	BELL, CHARLES L
	BOYES, TONY V
	HOLLAND-GACHES, DEBRA A
	HOWARD, ALLISON

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 2014 (Cont'd)

12212	JASPER, JANET J
	LABRIE, VIRGINIA W
	LIEB, RACHEL
	MACINTOSH, TIMOTHY A
	MCLAIN, LUKE
	PENROSE, TODD D
	PHIFER, THOMAS J
	QUIJANO, MIGUELITO
	RATHBUN, RICHARD
	REYES, BERNICE G
	ROPER, JAMIE K
	SABOURIN, TINA M
	SINCOFF, KURT
	STEADHAM, ANGELA R
	WATERS, BRIANNA L
	WING, DEBORAH K
12220	GOEBL, AMANDA
	GUIDO ARCHILLE BORGHESI
	MENDOZA, MARK
	MURRAY, JOHN
	NICHOLS, DONALD S
	SHANK, SAMANTHA A
	SINDEL, STACY L
	SULLIVAN, JENNIFER
	TAIRY, SHARON L
	WELCH, ARIELLE M

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 2010

11970	STEWART, CIERA
11980	RIVES, JEANIE V
11990	OCCUPANT UNKNOWN,
12000	CHAPMAN, ROBERT D
	ETRADE WAS LAST EMPLOYER
12009	OCCUPANT UNKNOWN,
12021	OCCUPANT UNKNOWN,
12023	HOLT, TERRI M
12057	BULL SMITH LLC
	OCCUPANT UNKNOWN,
12200	OCCUPANT UNKNOWN,
12202	BRAZIL, BOBBY E
	CLIZBE, ASHLY
	COX, KATHY
	DEHOFF, DELORES R
	DURAN, JAMES P
	FAIR OAKS MEADOWS APTS
	FEIGHT, KATHY E
	GUST, LACEY
	HANSON, DEBORAH A
	HARPER, RONALD E
	JANUSZAK, KATE
	JCM FAIR OAKS
	LAI, IVY
	MCHAN, MATTHEW S
	MICHALAK, JESSIE
	TORRES, RENE
	WEBSTER, PHILIP
12206	GAHANI, ASANEH
	JAHANI, AFSANEH
	MATTEY, EDGAR J
	NICHOLS, ERIN
	NISHIJIMA, PETER A
	TAYLOR, VIRGINIA M
	YADYASAR, KIARASH
12208	CARDENAS, SALVADOR S
	DITTO, MERANDA
	EISENBRANDT, MITCHELL W
	FREEMAN, JENNIFER
	GARCIA, ALMADELIA
	GRISHAM, FRANKLIN
	HANGAR 3 PRODUCTIONS
	MCCARTY, KEVIN
	NAZARI, MEHRI R
	SUHRIE PRTNERS A CAL LTD PRTNR
	WILSON, JENI W
12210	GARCIA, LISA
	JENSEN, J
	MALONY, TARA S
	MCLAIN, LUKE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 2010 (Cont'd)

12210	MIDDLETON, DEBORAH A
	PRITCHETT, JEAN L
	TSUMURA TOBUYKI
	WOODWARD, KIMBERLY A
12212	BERGELECTRIC
	BURCH, JESSICA
	CADALBERT, RUTH
	HENRY, ESTELLA M
	HULLIGAN, DAVID
	MCELMURY, RYAN G
	MCFARLANE, JUDIE M
	RICE, JONATHAN
	ROPER, JAMIE K
	SARVIA, LEMUS
	SORACCO, SANDRA A
12220	BURROWS, CLINTON A
	CHAPMAN, GILBERT
	COMBS, CATHY L
	JELLE, ADAM
	MENDOZA, MARK
	SINDEL, STACY L

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 2005

11980	OCCUPANT UNKNOWN,
11990	OCCUPANT UNKNOWN,
12000	KRUSKAMP, JOHN P
12009	OCCUPANT UNKNOWN,
12021	CANLEY, CAITLAN
12023	DAVIS, LINDA
12057	ENGEL, CHRISTIAN
12200	LEE, MEGAN R
12202	BILLINGSLEY, MONICA
	CANDELA, MELISSA
	CHARLES, JENNIFER
	COX, KATHRYN M
	FAIR OAKS MEADOWS APTS
	FEIGHT, KATHY E
	LAMONT, MATTHEW A
	LITTLE, BARBARA L
	MARIA, K
	MARSHALL, MICHAEL
	WESSLING, RON D
	WOLFF, JEFF
12206	BUCKNELL, ERIN
	GAYED, HANY
	ROWE, STEVEN L
12208	CLEAN & BRIGHT CLEANING SVCS
	DITTO, M
	HOLDEN, HEATHER N
	LOPEZ, GABRIEL
	MAYTANES, KIMBERLI
	OKUDA, TAMMY T
	WANSTREET, KARENE D
12210	GORNEY, NIN D
	KERNS, PAUL M
	KURTZ, BRIEANNA
	LO, N
	MAGNISON, BETTY E
	NOONAN, LAURA
	RYAN, D
	TIVEY, LIZABETH M
	TSUMURA TOBUYKI
12212	CARLILE, MARK
	CHHLANG, NEAY
	COLE, ANDY L
	CRESTELO, KIM L
	DAMERON, CHARLES R
	DARING, JENNIFER
	ESCARCIGA, MANUEL
	HARPE, JENNIFER
	HENRY, ESTELLA M
	JIMENEZ, LISA
	JOHNSTON, MARGARET E

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 2005 (Cont'd)

12212	LEWIS, MARY
	LORENCE, FRANK D
	NGUYEN, CAROL
	OCKO, ALEXSANDAR
	PARKER, SCOTT
	PENNINGTON, CHUCK
	PLANTE, JUDITH N
	ROUX, MICHELE
	RYBOLT, DAVID W
	WEDDLE, THOMAS G
	WRIGHT, GREGORY A
	ZANOLI, BRYAN
12220	DETI, FRANKIE D
	JACKSON, JESSE M
	WOO, DENISE A

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 2000

12023	EVANS, JOY L
12057	ENGEL, C
12202	FEIGHT, KATHY
	JULITA, S R
	KATROS, MELISSA A
	KEHOE, SALLY J
	KHAN LYNARD
	PARMETER, B
	ROBERTS, JORDAN N
	STRALEY, RICHARD J
	WELLS, JAY C
12206	MADSEN, MEGAN M
12208	BASINGER, MARY M
	CHAPMAN, S V
	DICKSON, RICHARD
	SARMIENTO, ROWELLA I
	THOMASON, TERRY
	VERVILLE, WILLIAM A
12210	BLASZOWSKI, SABRINA J
	DEGOLIA, KRISTA M
	FREEDLE, ERIC T
	HOWES, CELESTE E
	KEPHART, C J
	KIEFFER, H
	MAGNISON, BETTY E
	PRITCHETT, JEAN L
	WILLIAMS, R
12212	ADAMS, JUSTIN G
	ADENI, SAMEER
	BODAY, C V
	FIELDING, KELLIE M
	HEILNER, GREG A
	HUFF, GREG J
	LANDERS, C R
	NOMA, NANCY N
	PRICE, CATHY A
	SEALS, DAVID B
	STARKWEATHER, E H
	TOMPKINS, LINDA A
	YI, YOUNG R
12220	BOND, CHERYL
	BREHM, KATHY
	CLEMONS, BRIAN M
	GALDAMEZ, A
	GUTTERON, JANET
	RASCO, JAMES E

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 1995

12021	OCCUPANT UNKNOWNN
12023	MAHON, LIANNE
12057	ENGEL CHRISTIAN
	ENGEL, C
12200	OCCUPANT UNKNOWNN
12202	COCHRANE, TERRI
	GLEASON, CHERI P
	KHAN LYNARD
	SEGAL, ARLENE
	WESSLING, BETHANY
12206	BARNETT, LIN
	FISH, BRANT H
	MARCHADESCH, ROSARIO S
12208	CHAPMAN, KERI
	FOLTZ, DAVID
	MCWILLIAMS, JAMES R
	SCHWIESON, KERI
12210	BENNETT, SUSAN
	FELDING, KELLIE
	MURPHY, KEVIN
	WHITSITT, LINDA
12212	BALESTRIERI, WALTER
	BONANNO, DANIEL T
	BROWN, CHRIS
	BURGESS, PAUL
	CHENOWETH, MICHAEL
	FUHER, GREG
	GARCIA, LINDA
	GOODMAN, A
	HOLT, MICHAEL
	MARTINEZ, MICHAEL R
	MATHEWS, KAREY
	METZLER, ROY
	MILLER, HELEN M
	NICHOLSON, YVONNE
	PUTNAM, AMY
	SONNTAG, LISA
	WEST, M
12220	CONNELLY, CHYANNE C
	COSGROVE, MARA
	CULLEN, S
	FOSTER, DONNELL
	GRAY, MARA
	GUDENBERT, LARS
	THI, CUC D
	TOMLINSON, LISA
	WEST, LAURA

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 1992

12057	ENGEL CHRISTIAN HOMES
	ENGEL, C
12206	ROWLAND, M
	VETTE, RUJI
12208	BLACK, CHONG
	WOLPERT, SANDRA
12212	BARNETT, LIN
	SCHRIVER, H W
	TRAPP, AIMEE
	WILLIAMS, L
12220	DUSTIN, CATHY
	THI, CUC D

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 1987

12057 ENGEL CHRISTIAN HOMES
12212 PHOTO & COPY SHOP THE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 1982

12057 ENGEL CHRISTIAN HOMES
12200 S W L BUILDERS DEVELOPERS
12212 PHOTO & COPY SHOP THE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

FAIR OAKS BLVD 1977

12057 ENGEL CHRISTIAN HOMES

Target Street	Cross Street	Source
✓	-	HAINES AND COMPANY

FAIR OAKS BLVD 1971

11407 URSENBACH GRANT	961-0281
11417 NELSON EUGENE REV	967-5127
11427*DIAL A PRAYER	967-4781
*FAIR OAKS PRSBY CH	967-3202+1
*FAIR OKS PRSBYTN CH	967-4784
11430*ST FRANCIS EPISCPAL	966-2261
11632*MISS PATS HAIR FSHN	967-2915
11845 MADDEN JAS H	967-4539
11990 REDFERN POMER E	961-7342
12000 BAXTER MARY M	967-0125
12008 DUNLAP GARY R	961-7525
12009 JACKER L F	967-7089
12012 HUGHES S H	967-4357
12021 EMPEY ANNE C	967-4244
LUHRS CHARLOTTE M	967-4244
12023 MOISAN JOHN J	961-7091
12030 HAGA JOHN JR	961-9612
SCHULZ EVELYN MRS	967-5298
12040 HORNE B A	966-2542+1
12057*CHRISTIAN ENGEL HMS	961-9119
*ENGEL CHRISTIAN	961-9119
ENGEL GITTA	961-7764
12100 MILLER WALTER L	967-5385
12144 ADAIR DONALD E	967-6285
12212 MULLER W C P	967-5892
12400 MYERS L G	967-3235
12417*B&B CLUB	726-1435+1
12421*WOOD DICTATING CO	726-1060+1
12427*REALTY RESEARCH	725-2133
12429*PROSPECT PROPERTIES	967-1218
12439*EVANS BODY SHOP	726-1203+1
12441*ALERT PRINTERS	725-2420
NO # LOTH NYOL	967-7137
* 574 BUS 676 RES	509 NEW

12057 Fair Oaks Boulevard

12057 Fair Oaks Boulevard

Citrus Heights, CA 95610

Inquiry Number: 5614353.3

April 08, 2019

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

04/08/19

Site Name:	Client Name:
12057 Fair Oaks Boulevard	Partner Engineering and Science, Inc.
12057 Fair Oaks Boulevard	2154 Torrance Blvd, Suite 200
Citrus Heights, CA 95610	Torrance, CA 90501-0000
EDR Inquiry # 5614353.3	Contact: Aimee Tamayo

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Certified Sanborn Results:

Certification # 4749-489B-8698

PO # 19-243045.1

Project 19-243045.1

UNMAPPED PROPERTY

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Sanborn® Library search results

Certification #: 4749-489B-8698

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- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

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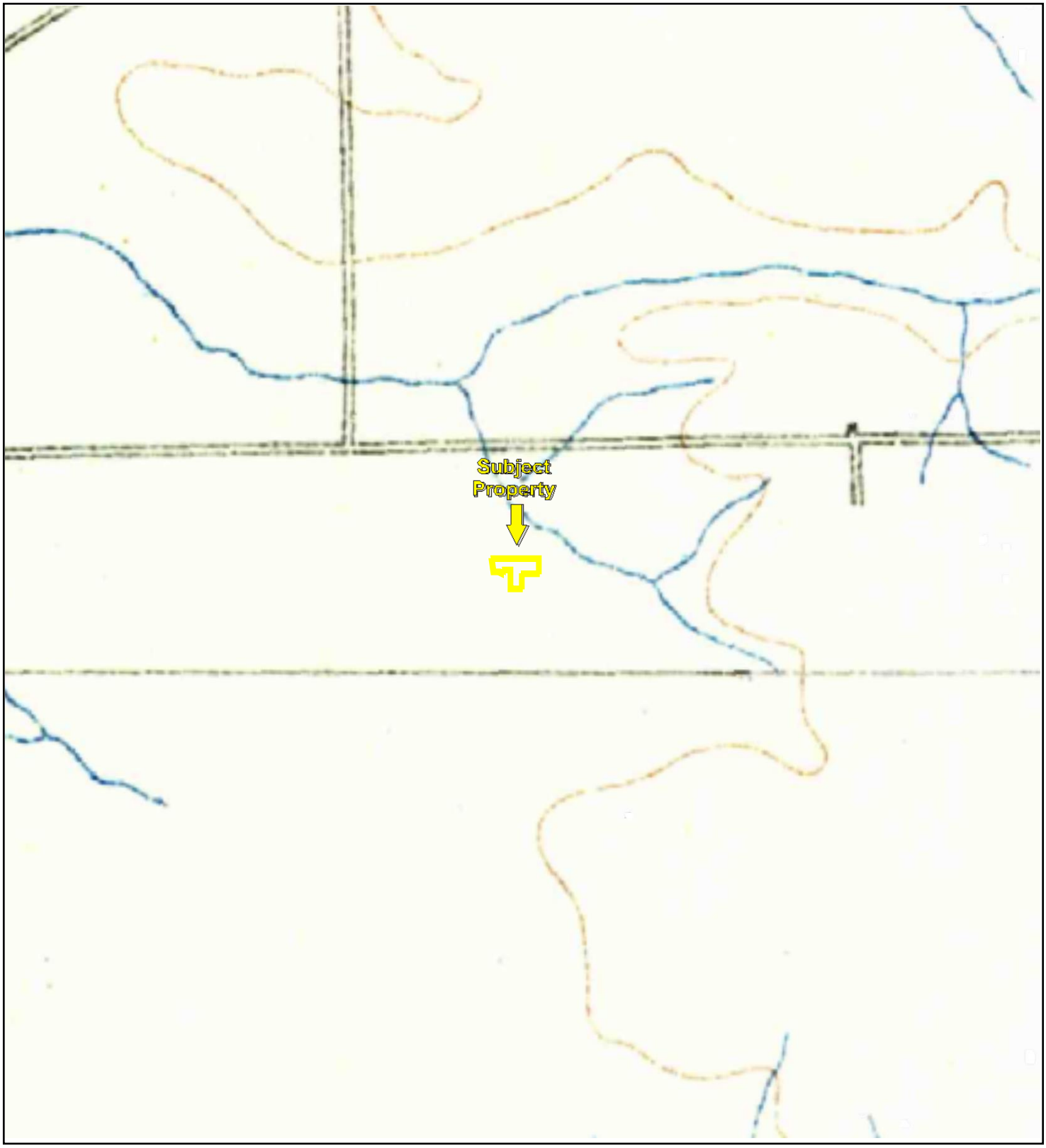
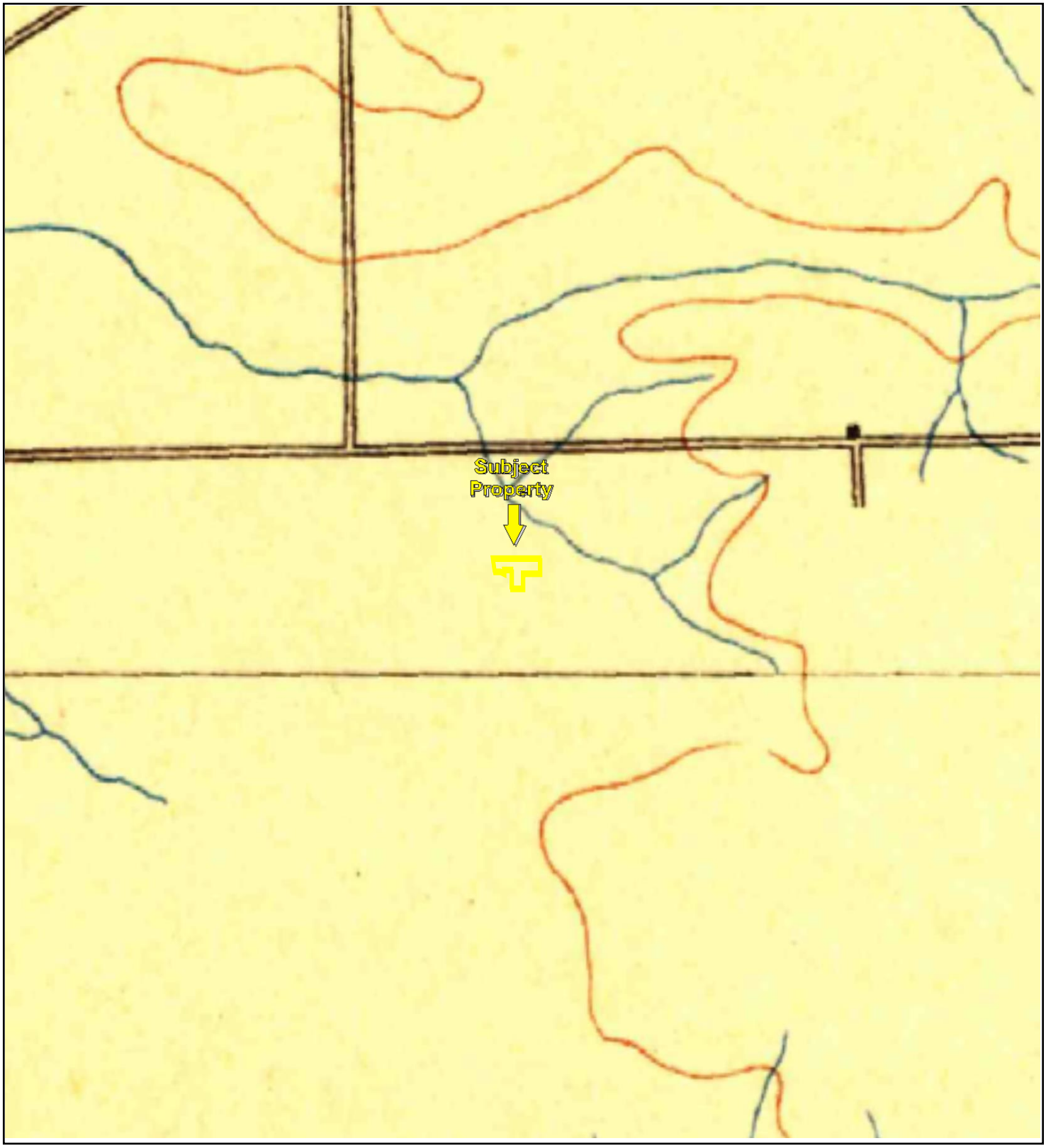


TP, Sacramento, 1891, 30-minute

0 Miles 0.25 0.5 1 1.5

N

Key: Subject Property



TP, Sacramento, 1892, 30-minute

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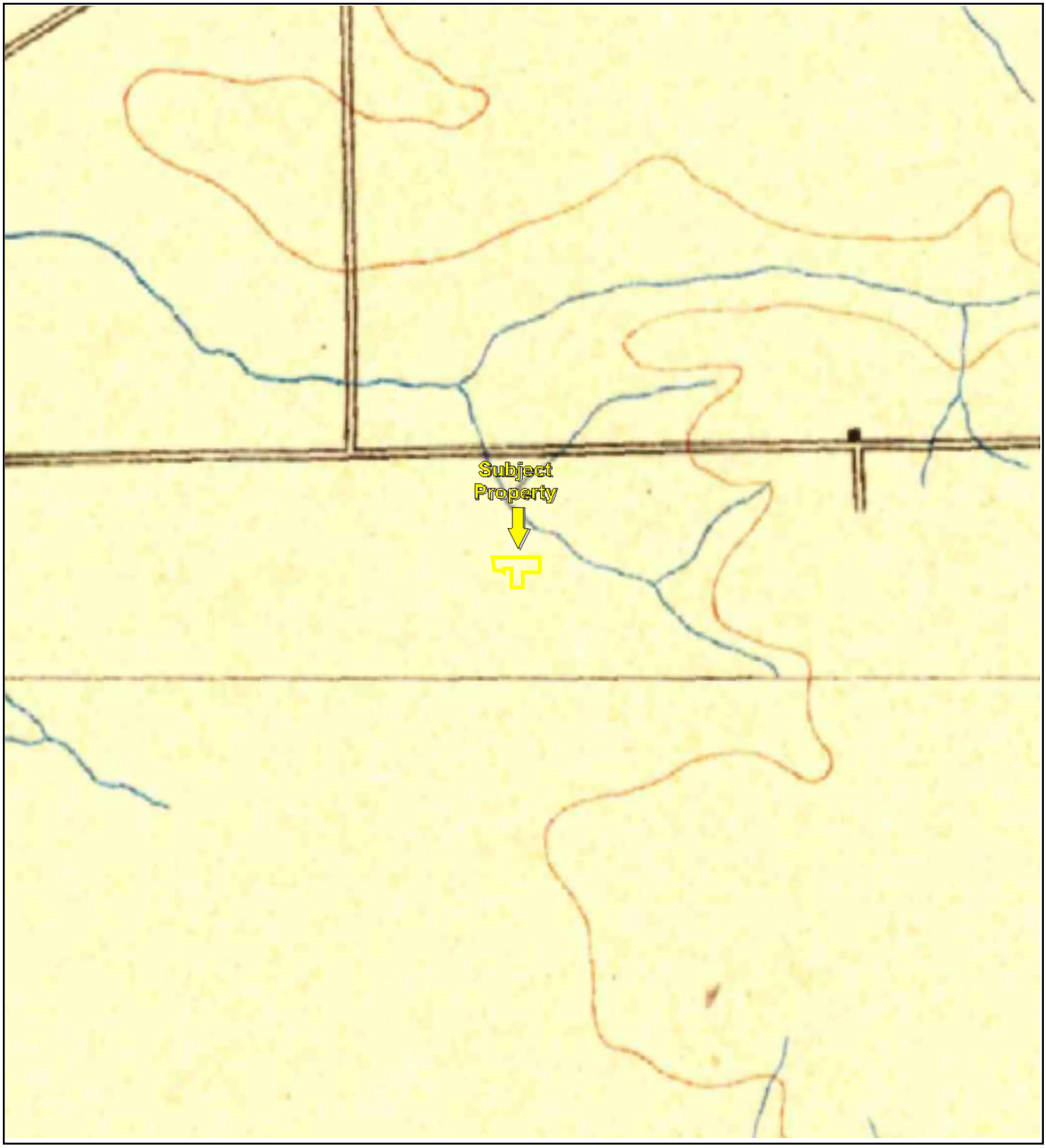
Key: Subject Property



TP, Sacramento, 1893, 30-minute

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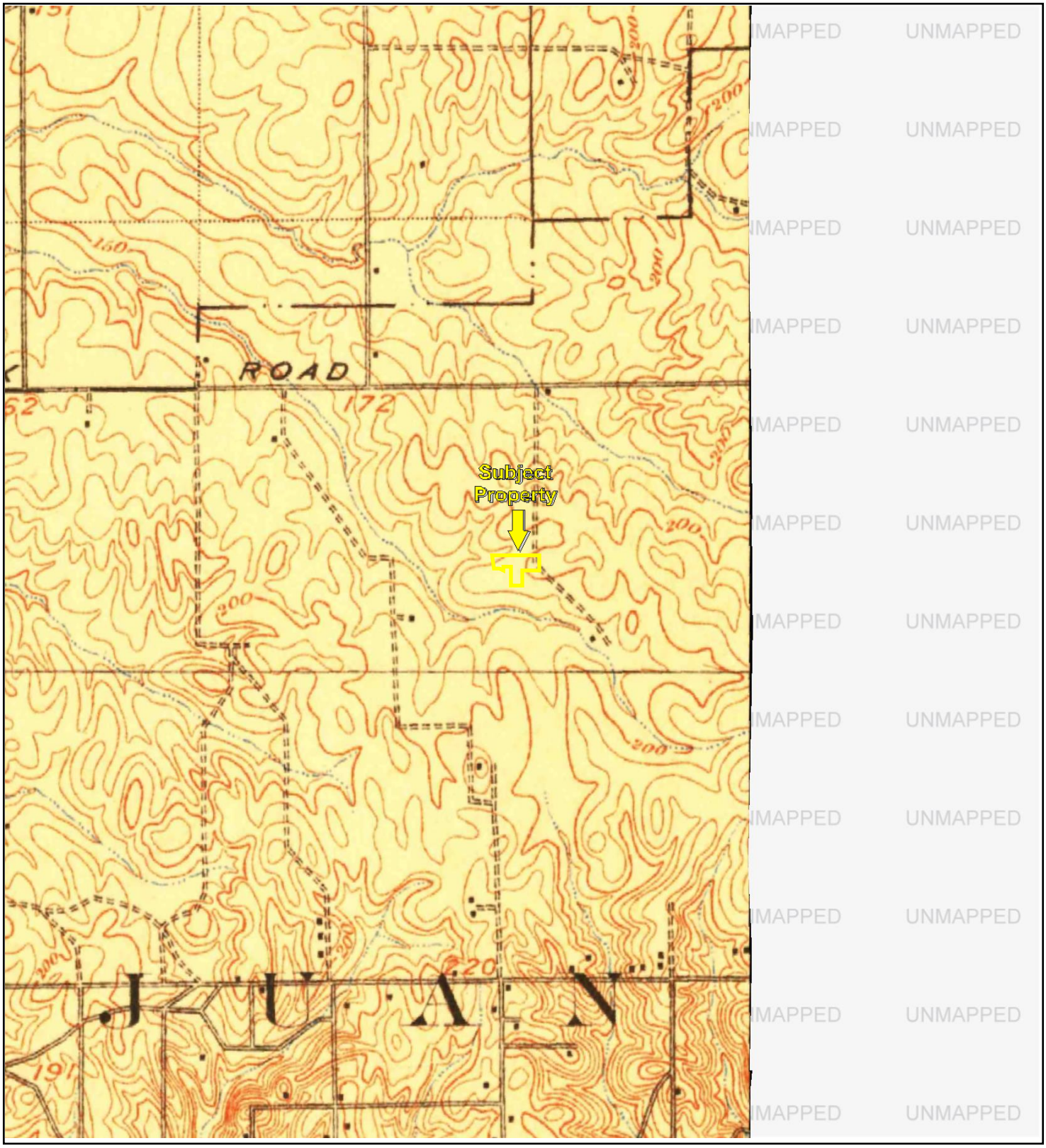
Key: Subject Property



TP, Fairoaks, 1902, 15-minute

0 Miles 0.25 0.5 1 1.5

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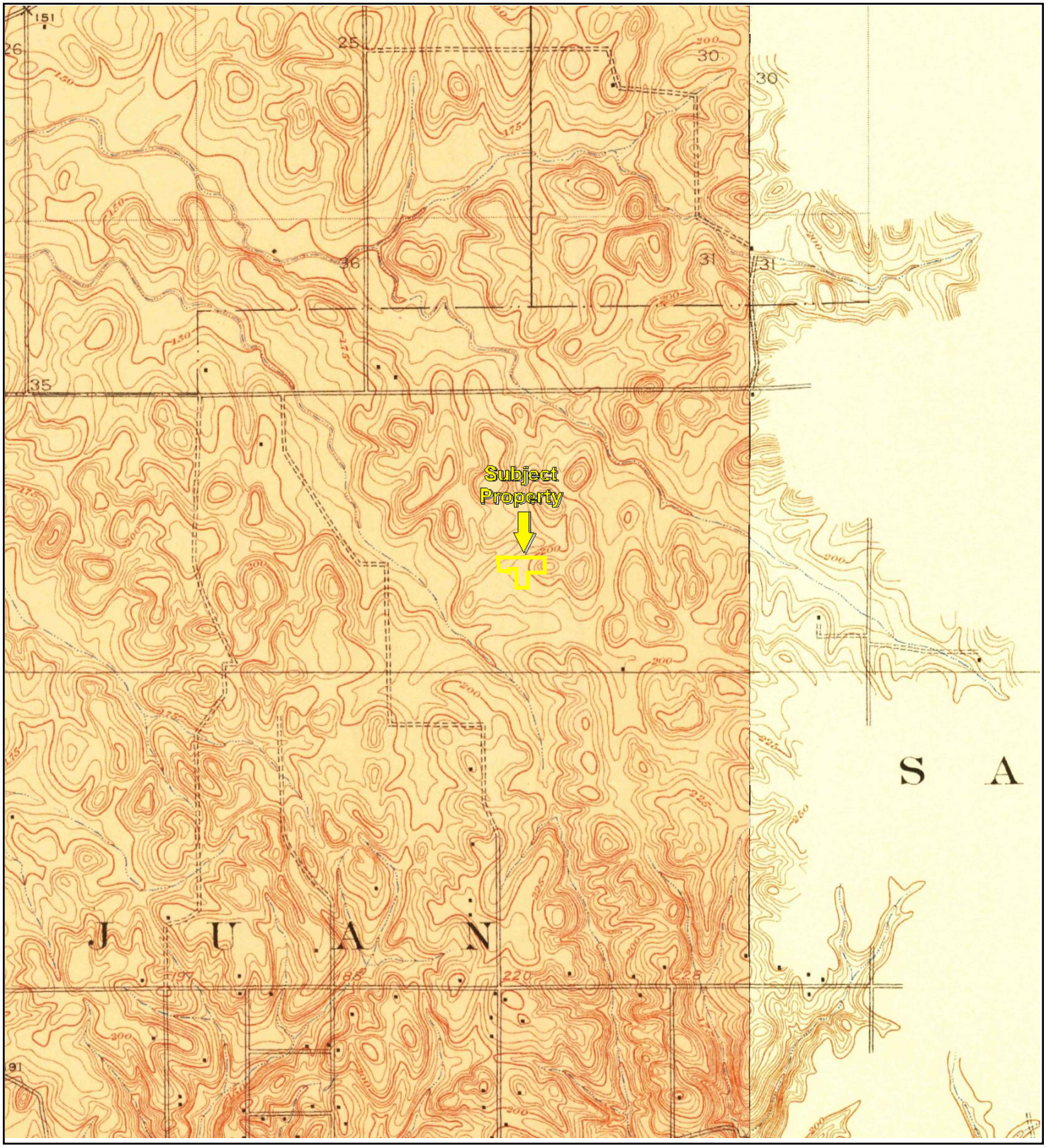
Key: Subject Property

APPENDIX B: Topographic Maps

Project No. 19-243045.1

PARTNER



TP, Antelope, 1911, 7.5-minute
E, Folsom, 1914, 7.5-minute

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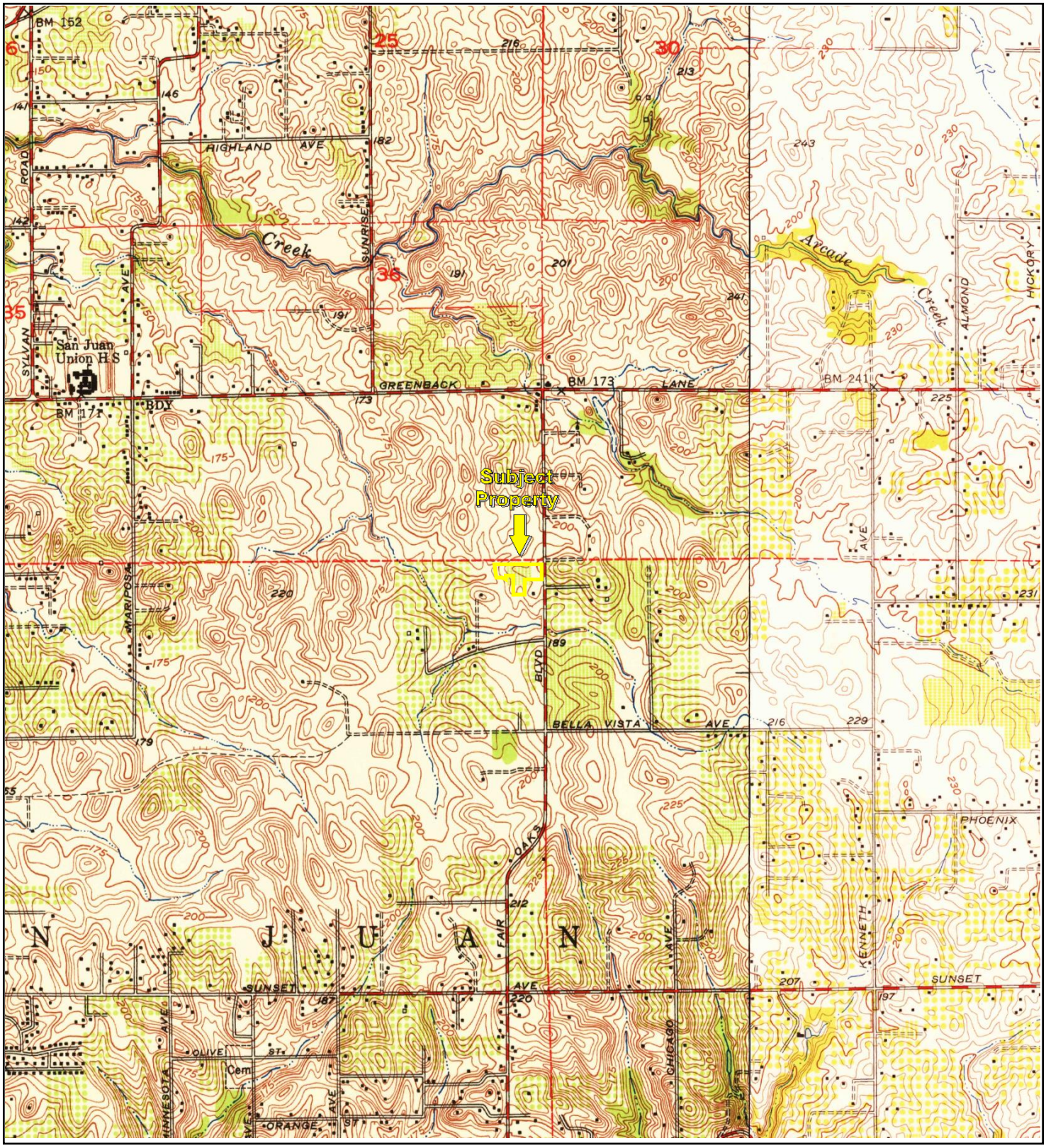
Key: Subject Property

APPENDIX B: Topographic Maps

Project No. 19-243045.1

PARTNER



TP, Citrus Heights, 1951, 7.5-minute
E, Folsom, 1954, 7.5-minute

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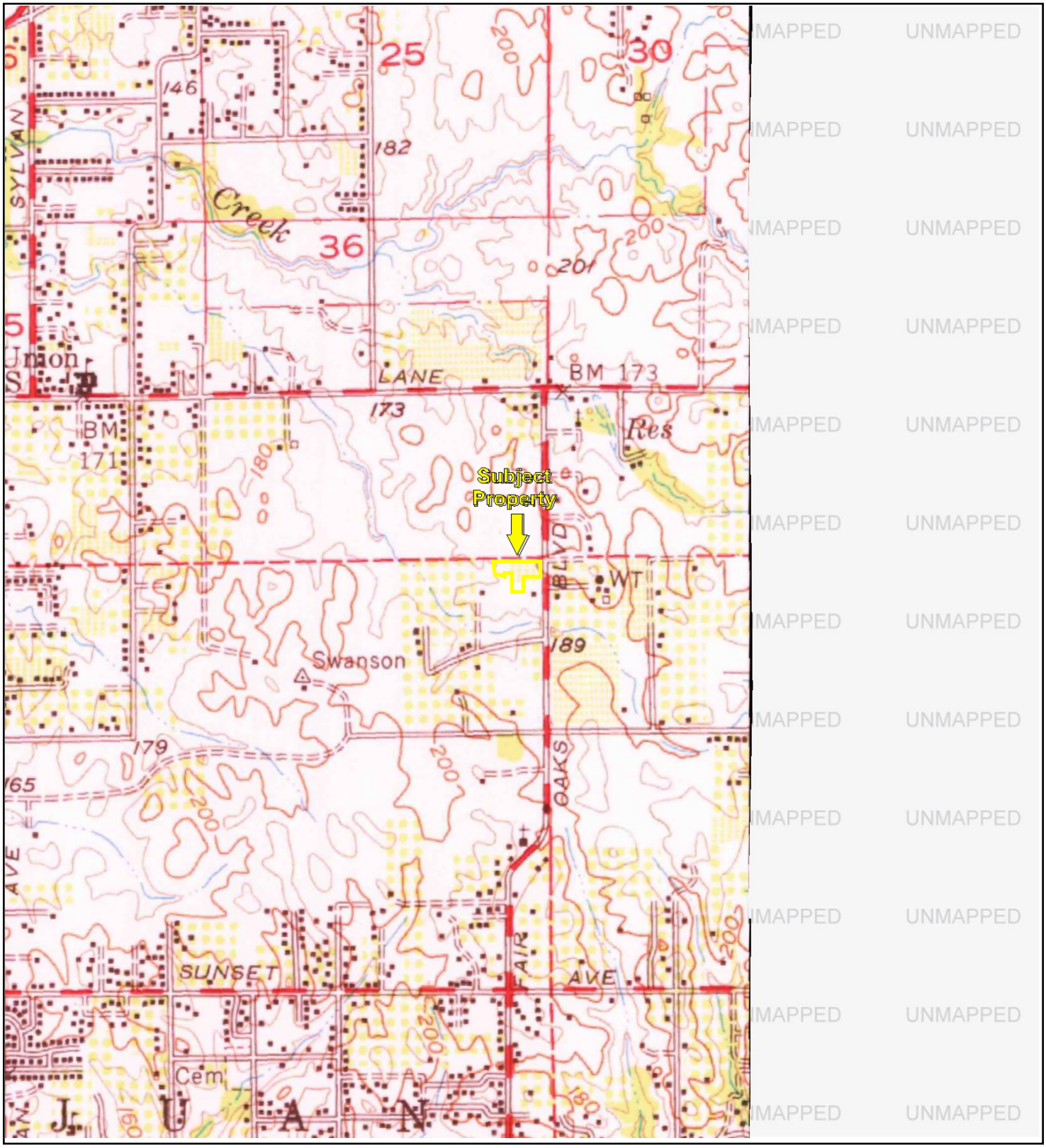
Key: Subject Property

APPENDIX B: Topographic Maps

Project No. 19-243045.1

PARTNER



TP, Fair Oaks, 1954, 15-minute

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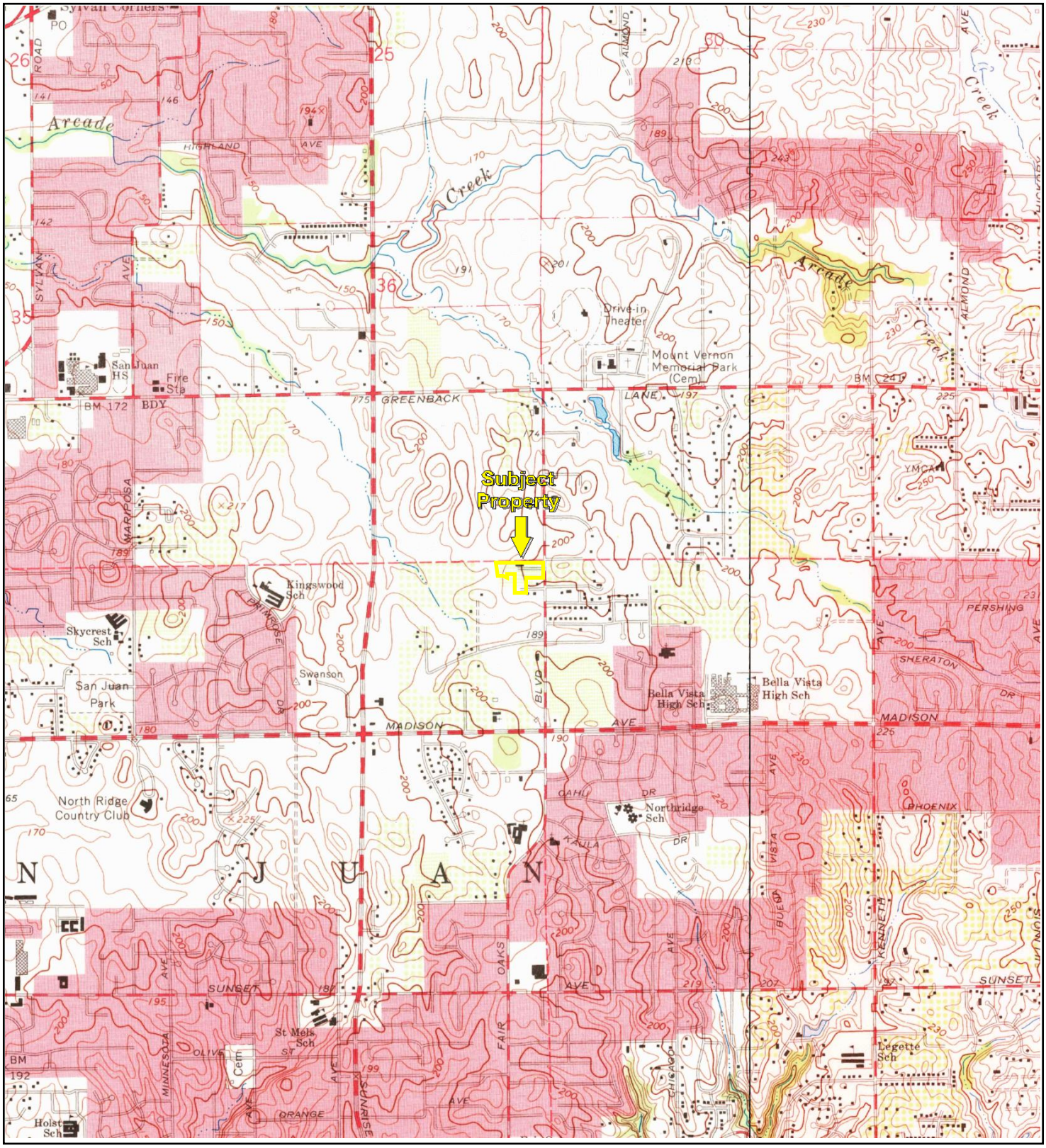
Key: Subject Property

APPENDIX B: Topographic Maps

Project No. 19-243045.1

PARTNER



TP, Citrus Heights, 1967, 7.5-minute
E, Folsom, 1967, 7.5-minute

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Key: Subject Property

APPENDIX B: Topographic Maps

Project No. 19-243045.1

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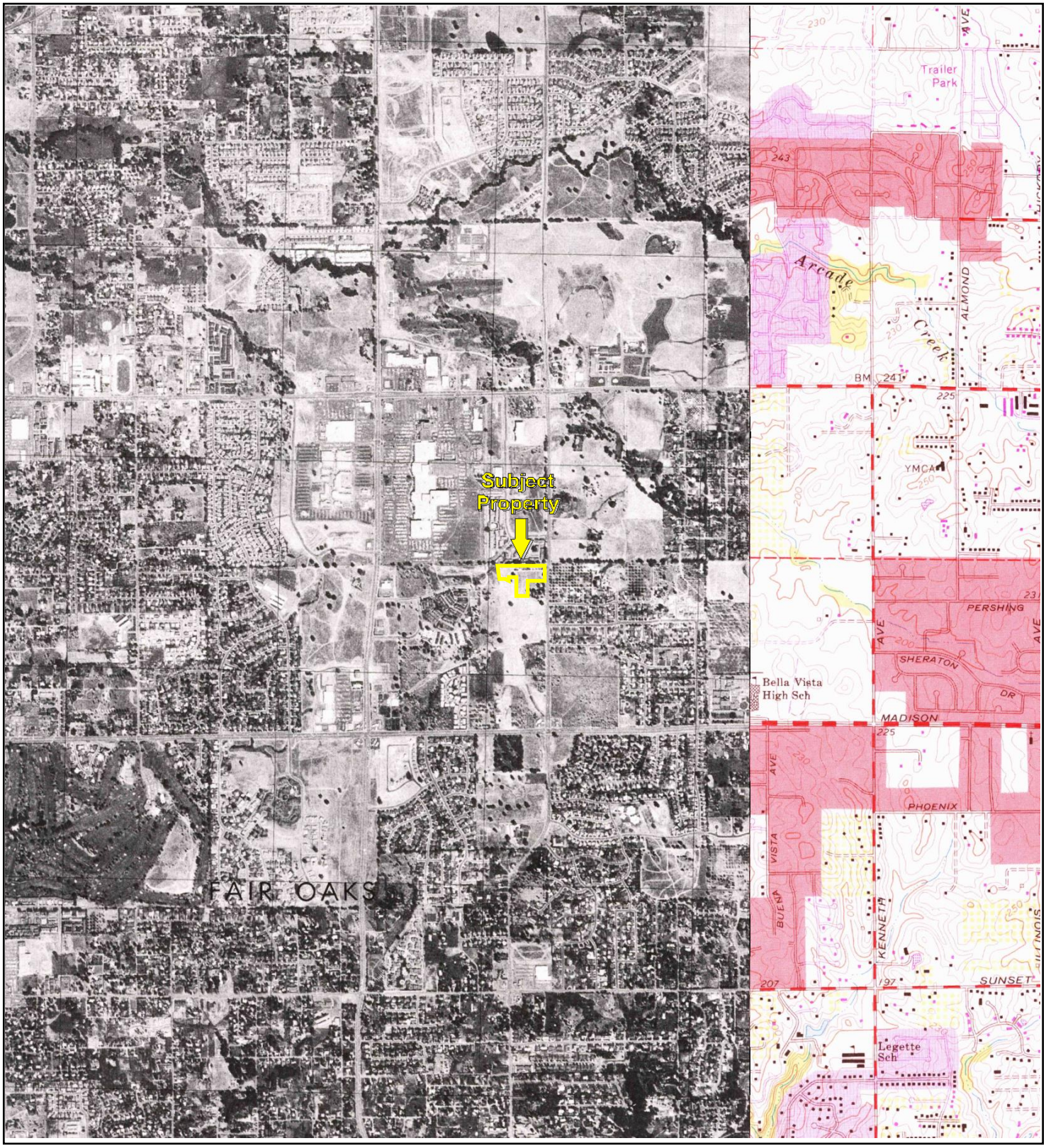


TP, Citrus Heights, 1975, 7.5-minute
E, Folsom, 1975, 7.5-minute

0 Miles 0.25 0.5 1 1.5

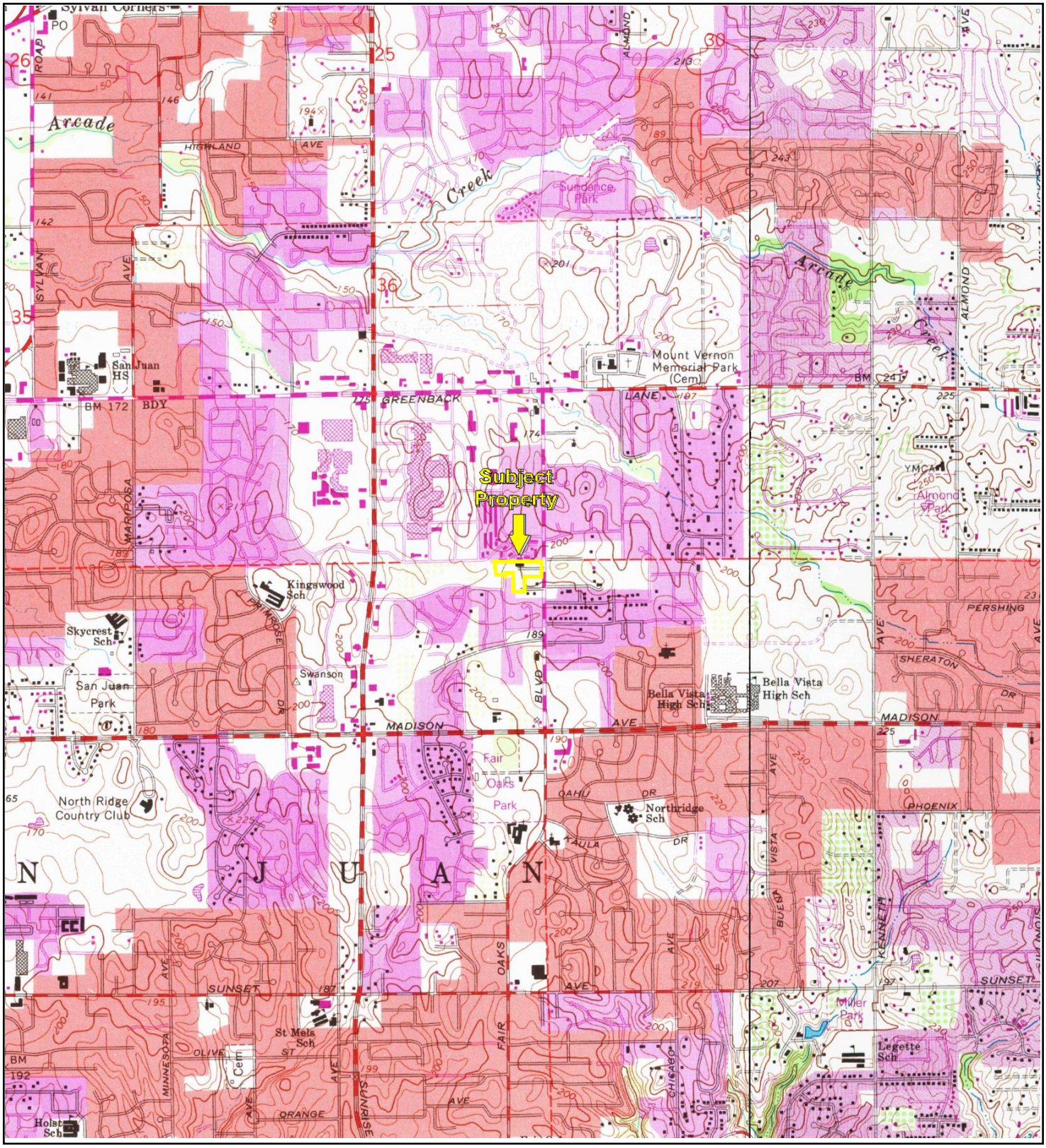
N

Key: Subject Property

APPENDIX B: Topographic Maps

Project No. 19-243045.1

PARTNER



TP, Citrus Heights, 1980, 7.5-minute
E, Folsom, 1980, 7.5-minute

0 Miles 0.25 0.5 1 1.5

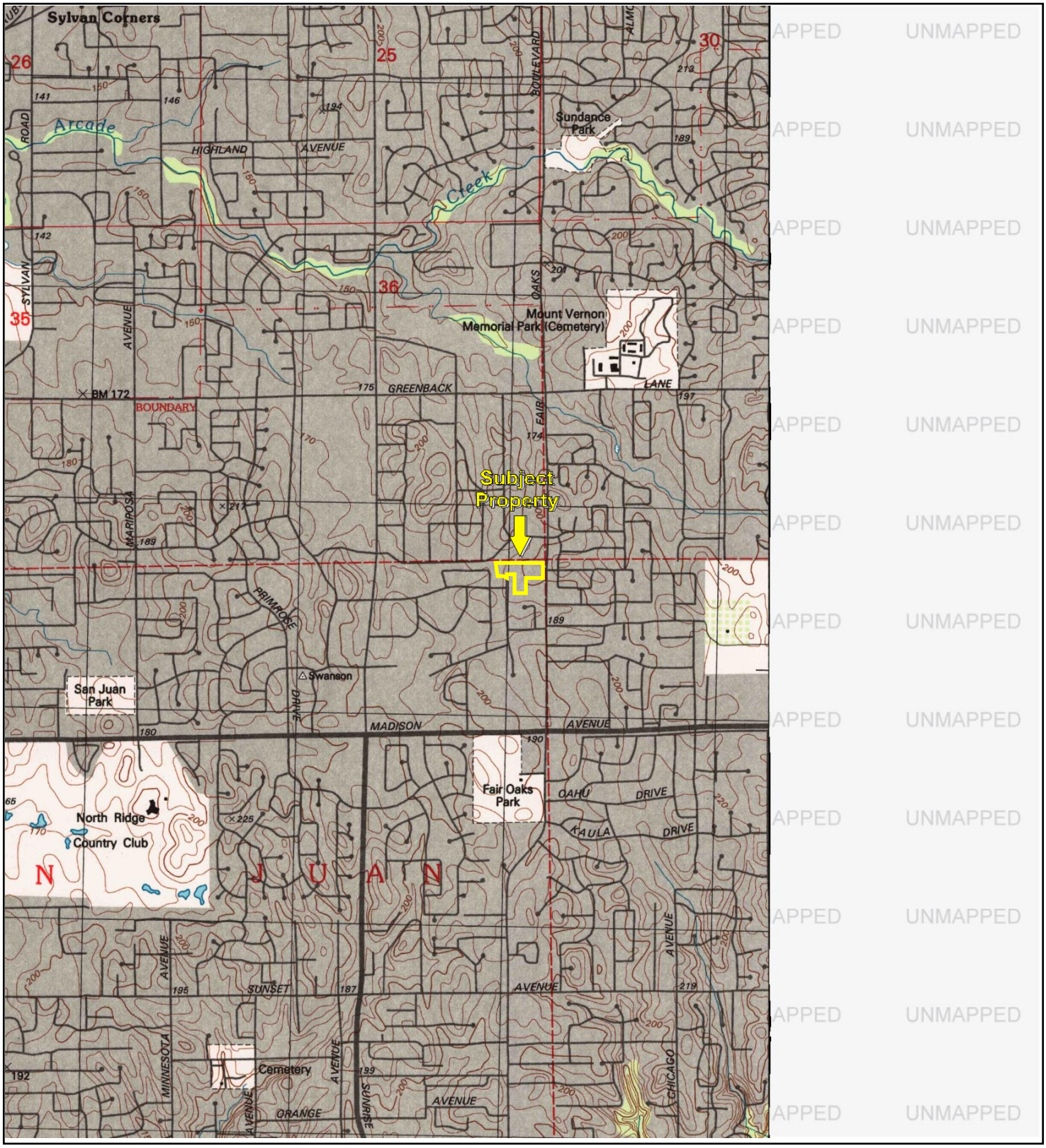
N

Key: Subject Property

APPENDIX B: Topographic Maps

Project No. 19-243045.1

PARTNER



TP, Citrus Heights, 1992, 7.5-minute

0 Miles 0.25 0.5 1 1.5

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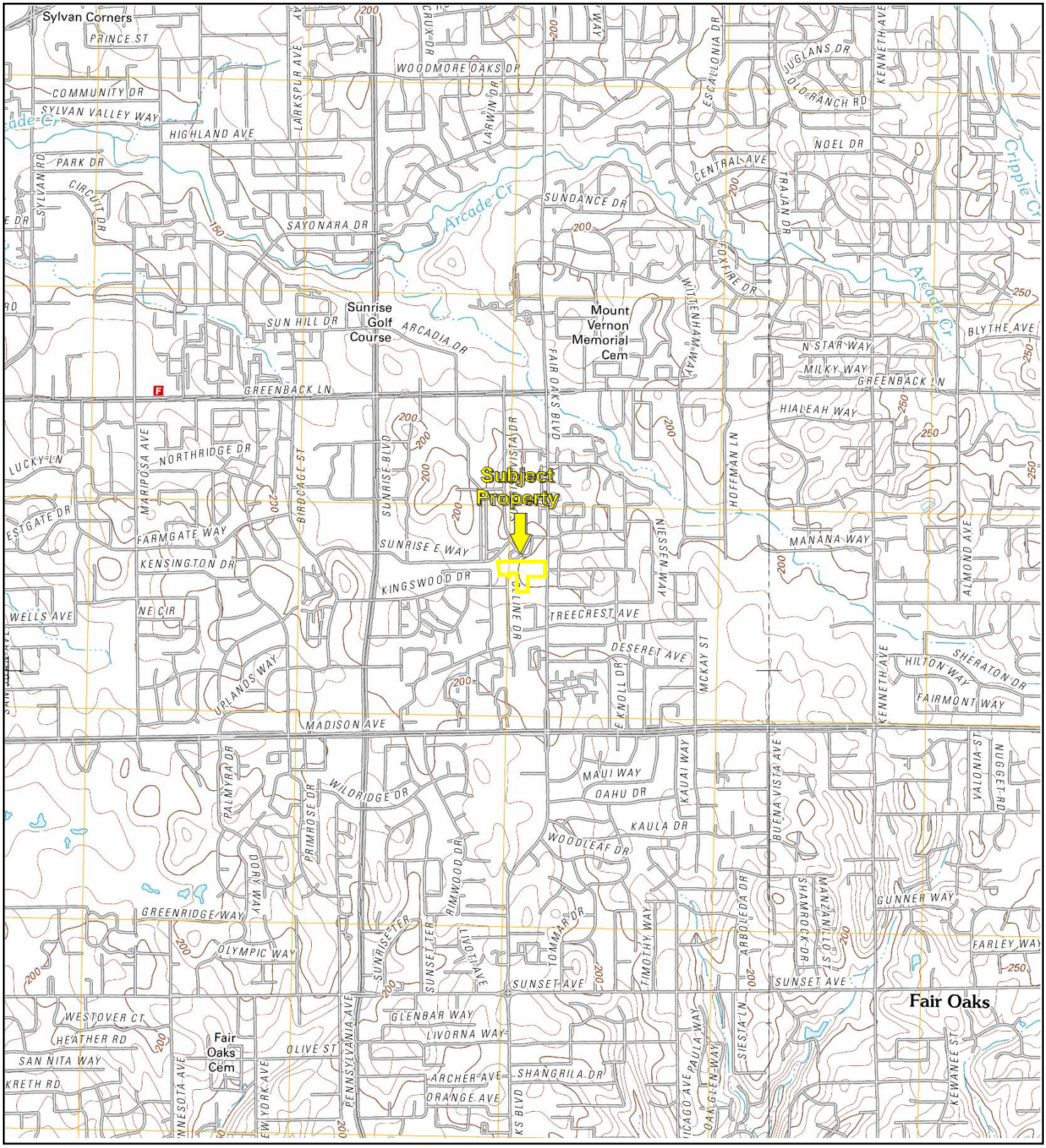
Key: Subject Property

APPENDIX B: Topographic Maps

Project No. 19-243045.1

PARTNER



TP, Citrus Heights, 2012, 7.5-minute
E, Folsom, 2012, 7.5-minute

0 Miles 0.25 0.5 1 1.5

N

Key: Subject Property

APPENDIX B: Topographic Maps

Project No. 19-243045.1

PARTNER

Lerner, Mark

From: Virginia Muller <VMuller@airquality.org>
Sent: Monday, April 15, 2019 12:24 PM
To: Lerner, Mark
Cc: Pat Smith
Subject: Sac Metro Air District Public Records Act (PRA) Request 630 – 04112019 Re 12057 Fair Oaks Boulevard, Fair Oaks, Ca 95628

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mark:

No records were found related to the requested location.

Sincerely,
Virginia

Virginia Muller, Legal Assistant II / Clerk of the Hearing Board
District Counsel's Office

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

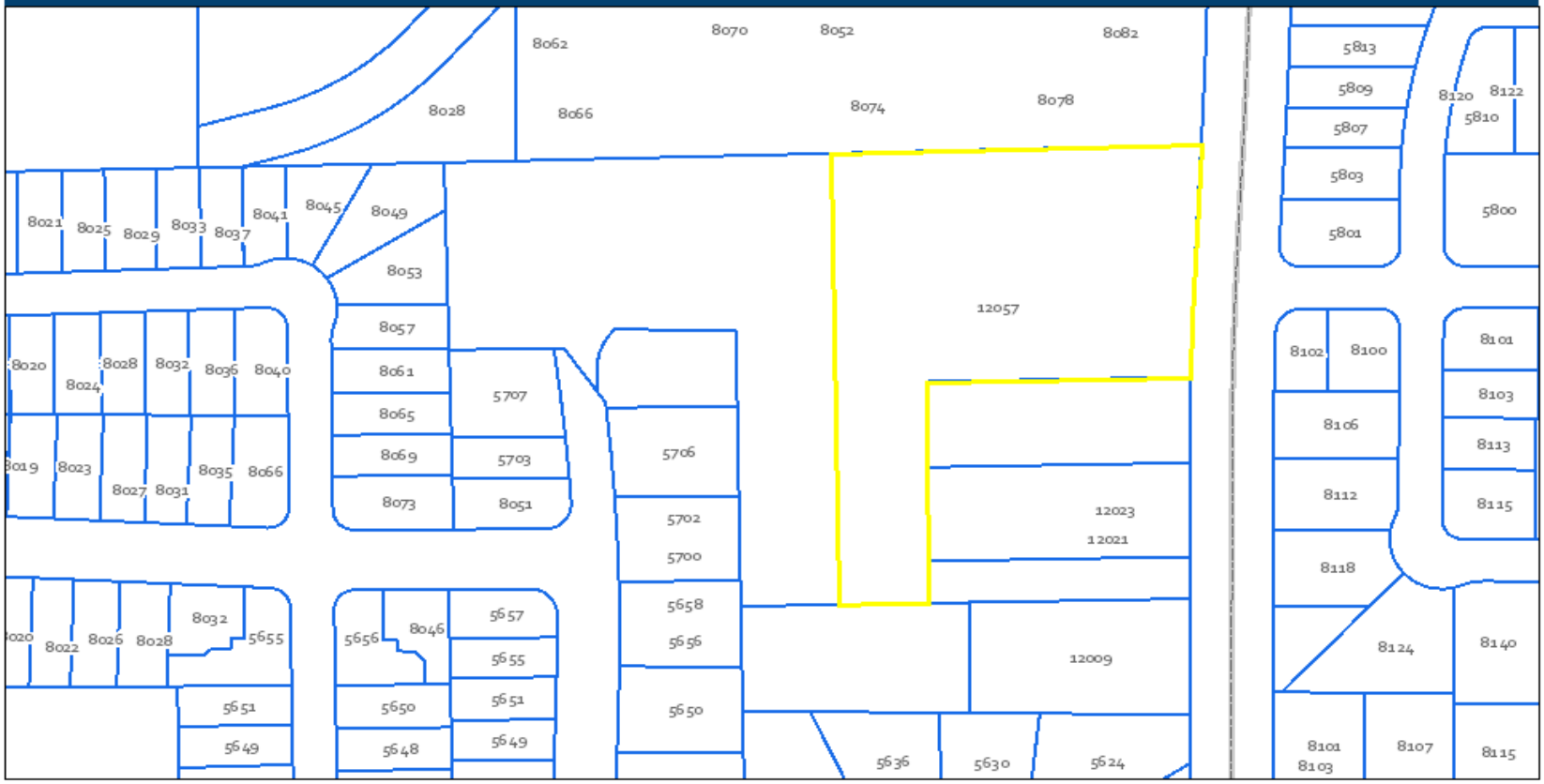
777 12th St., 3rd Flr
Sacramento, CA 95814
(916) 874-4809

SACRAMENTO COUNTY

Assessor Parcel Viewer

APN: 23304300020000

Print date: 4/11/2019



Sacramento County Boundary

Parcel Boundaries, Level 16,17,18,19,20

N

1" = 149'

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Information for Parcel:
233-0430-002-0000

Read Our Data Disclaimer

PROPERTY INFORMATION

Assessor Parcel #	23304300020000
Address	12057 FAIR OAKS BLVD
Postal City, Zip	FAIR OAKS 95628
Jurisdiction	CITRUS HEIGHTS
County Supervisor District	Sue Frost - District 4
Assessor's Map	Assessor's Map Book 233, Page 043

PROPERTY TAX BILL

A summary of the most recent property tax bill is available on the e-PropTax site.

Tax Rate Area Code	06-013
Last Roll Year	2018

ASSESSOR'S ROLL VALUES

as of September 17, 2018

Tax Roll Year	2018	
Land Value		$270,734
Improvement Value		$128,541
Personal Property Value		$0
Fixtures		$0
Homeowner's Exemption		$0
Other Exemption		$0
Net Assessed Value		$399,275
Property tax bill information	Link to ePropTax	

LAND INFORMATION

Thomas Brothers Map	260 B 5
Assessor Land Use Code	A1D00A
Assessor's Property Description	THE E 355.76 FT OF THE N 462.10 FT OF SEC 1 T9N R6E MDB&M EXC THEREFROM THE E 265.96 FT OF THE S 230.01 FT ALSO EXC COUNTY R/W IN BK 4683/233
Approx. Parcel Area	97139 sq ft / 2.23 acres

ZONING

Zoning:	RD10 - MEDIUM DENSITY RESIDENTIAL

OWNER INFORMATION

California Government Code Section 6254.21 states that “No state or local agency shall post the home address or telephone number of any elected or appointed official on the internet without first obtaining the written permission of that individual.” As the cost to collect and continuously update that information is prohibitive, the Assessor’s website does not display the Assessee name. It may be obtained by calling (916) 875-0700, or by visiting the Assessor's Office at 3701 Power Inn Road, Suite 3000, in Sacramento.

Last Ownership Transfer Document Type	GRANT DEED/CORP. DEED/GIFT DEED/JNT TEN DEED
County Recorder's Document Number	Book 20150325, Page 263
Event Date	Wed Mar 25 2015

PROPERTY BUILDING INFORMATION

Land Use Code	A1D00A
Residence Building Count	1
Total Living Area	2940 sq ft
Bedrooms	4
Baths	3.5
Dining Room	1
Family Room	1
Garage Parking Area	720 sq ft
Carport Parking Area	0 sq ft
Covered Parking Spaces	3
Heating/Cooling	Both
Fireplaces	Y
Pool	Y
Spa	N
Year Built	1966
Effective Year	1966
Stories	1
About this data	Data Field Descriptions

BUILDING PERMITS

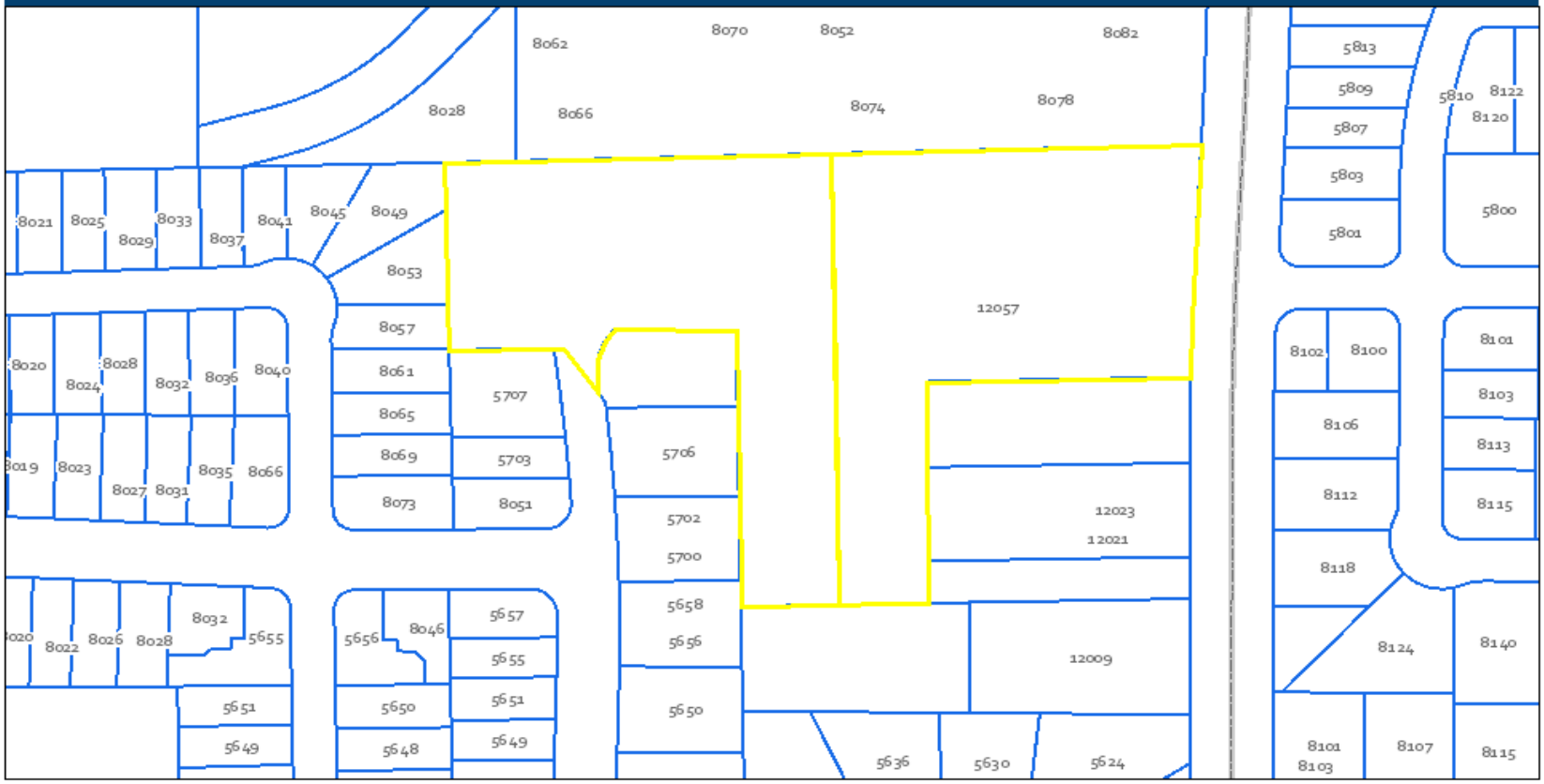
Building permit information for the Unincorporated County can be obtained from Sacramento County On-line Permits automated system (registration and login required). Visit the Building Permits and Inspection website for additional references. Refer to the appropriate city jurisdiction agency for incorporated areas.

SACRAMENTO COUNTY

Assessor Parcel Viewer

APN: 23304300410000

Print date: 4/11/2019



Sacramento County Boundary

Parcel Boundaries, Level 16,17,18,19,20

N

1" = 149'

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Information for Parcel:
233-0430-041-0000

Read Our Data Disclaimer

PROPERTY INFORMATION

Assessor Parcel #	23304300410000
Address	12057 FAIR OAKS BLVD
Postal City, Zip	FAIR OAKS 95628
Jurisdiction	CITRUS HEIGHTS
County Supervisor District	Sue Frost - District 4
Assessor's Map	Assessor's Map Book 233, Page 043

PROPERTY TAX BILL

A summary of the most recent property tax bill is available on the e-PropTax site.

Tax Rate Area Code	06-013
Last Roll Year	2018

ASSESSOR'S ROLL VALUES

as of September 17, 2018

Tax Roll Year	2018	
Land Value		$331,347
Improvement Value		$4,285
Personal Property Value		$0
Fixtures		$0
Homeowner's Exemption		$0
Other Exemption		$0
Net Assessed Value		$335,632
Property tax bill information	Link to ePropTax	

LAND INFORMATION

Thomas Brothers Map	260 B 5
Assessor Land Use Code	A1B00A
Assessor's Property Description	POR SEC 1 T9N R6E MDB&M DESC AS BEG NW COR LOT AL 25 WALNUT GROVE ESTATES UNIT NO 3 TH FM SD POB AL N193.37FT TO N LINE SD SEC 1 TH ALG SD N LINE E AL 375.24FT TH S462.96FT TH W TO A PT ON E LINE OF AL LOT 22 OF SD WALNUT GROVE ESTATES UNIT NO. 3 TH AL N01%02'00"W 115.03FT TH N03%27'41"W 153.33FT TH AL S89%43'30"W 113.17FT TH CURVING RT ON A 45FT RAD AL SUBT BY CH BRG S50%31'59"W 0.32FT TH CURVING AL LEFT ON A 55FT RAD SUBT BY CH BRG S22%13'50"W AL 51.77FT TH S05%50'38"E 20.47FT TH N40%28'08"W AL 76.87FT TH S88%58'W 106.55FT TO POB CONTG. 2.33 AL AC M/L AL

Approx. Parcel Area	101495 sq ft / 2.33 acres

ZONING

Zoning:	RD10 - MEDIUM DENSITY RESIDENTIAL

OWNER INFORMATION

California Government Code Section 6254.21 states that “No state or local agency shall post the home address or telephone number of any elected or appointed official on the internet without first obtaining the written permission of that individual.” As the cost to collect and continuously update that information is prohibitive, the Assessor’s website does not display the Assessee name. It may be obtained by calling (916) 875-0700, or by visiting the Assessor's Office at 3701 Power Inn Road, Suite 3000, in Sacramento.

Last Ownership Transfer Document Type	GRANT DEED/CORP. DEED/GIFT DEED/JNT TEN DEED
County Recorder's Document Number	Book 20150325, Page 263
Event Date	Wed Mar 25 2015

PROPERTY BUILDING INFORMATION

No Property Characteristics are available for this property

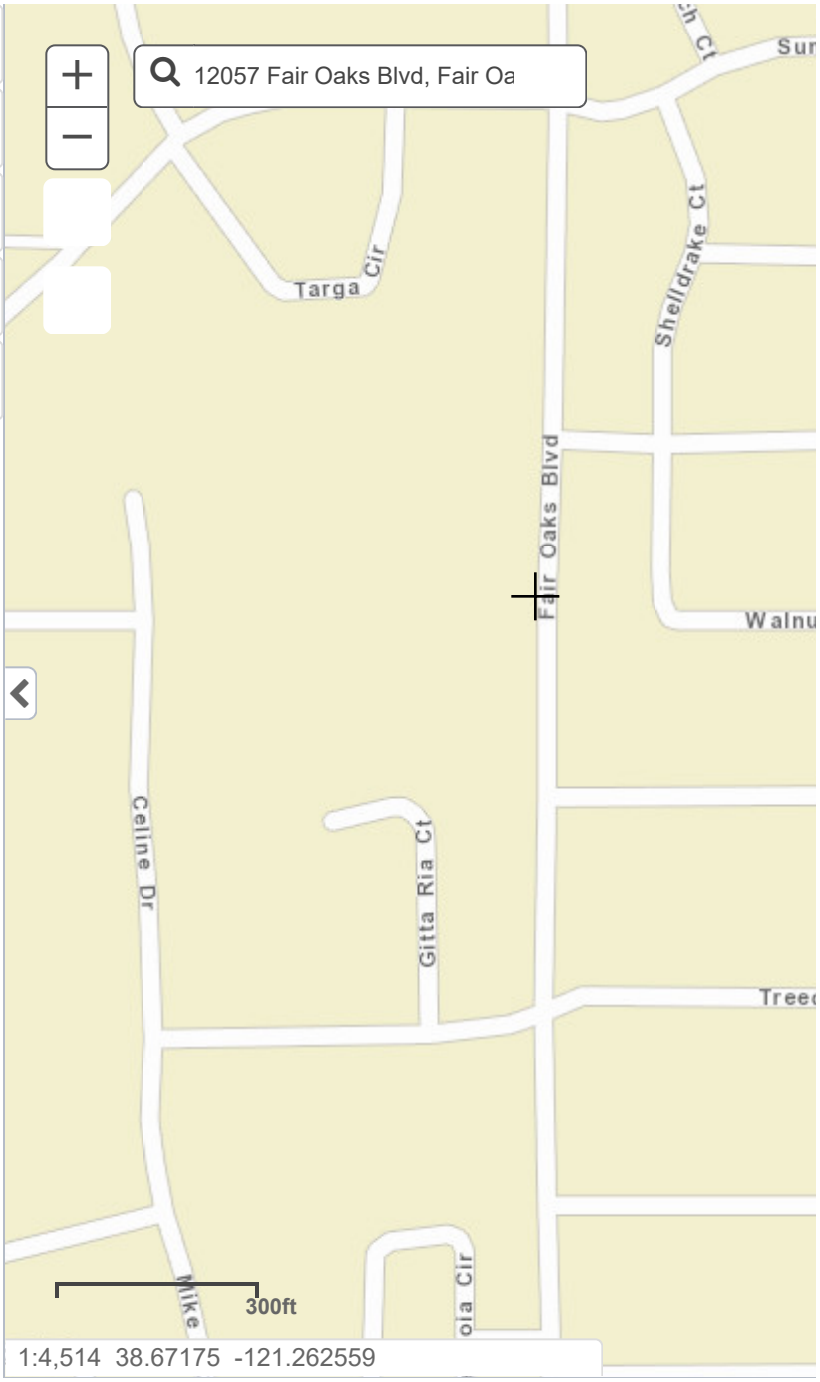
BUILDING PERMITS

Building permit information for the Unincorporated County can be obtained from Sacramento County On-line Permits automated system (registration and login required). Visit the Building Permits and Inspection website for additional references. Refer to the appropriate city jurisdiction agency for incorporated areas.

Well Finder
DOGGR GIS

More Info | Help | ©

- Well Status and Well Type Filter
- Search
- Zoom to Field
- Measurement
- Layers



Request #19-800

☑ **CLOSED**

As of April 24, 2019, 9:48pm

Details

Hello,

I am writing to request information and records regarding hazardous materials use and storage information, underground storage tanks (USTs), aboveground storage tanks (ASTs), environmental assessments, and any environmental case listings (LUST) or information for the following property address or APN.

12057 Fair Oaks Boulevard, Fair Oaks, 95628 and the APN's: 233-0430-002 and 233-

+ Read more

Received

April 11, 2019 via web

Departments

Environmental Management

Documents

(none)

Staff

Point of Contact

Natasha Drane

Timeline

Request Published

Public

April 11, 2019, 12:57pm

Request Closed

Public

Fulfilled (no documents to produce)

April 11, 2019, 12:57pm

Department Assignment

Public

Environmental Management

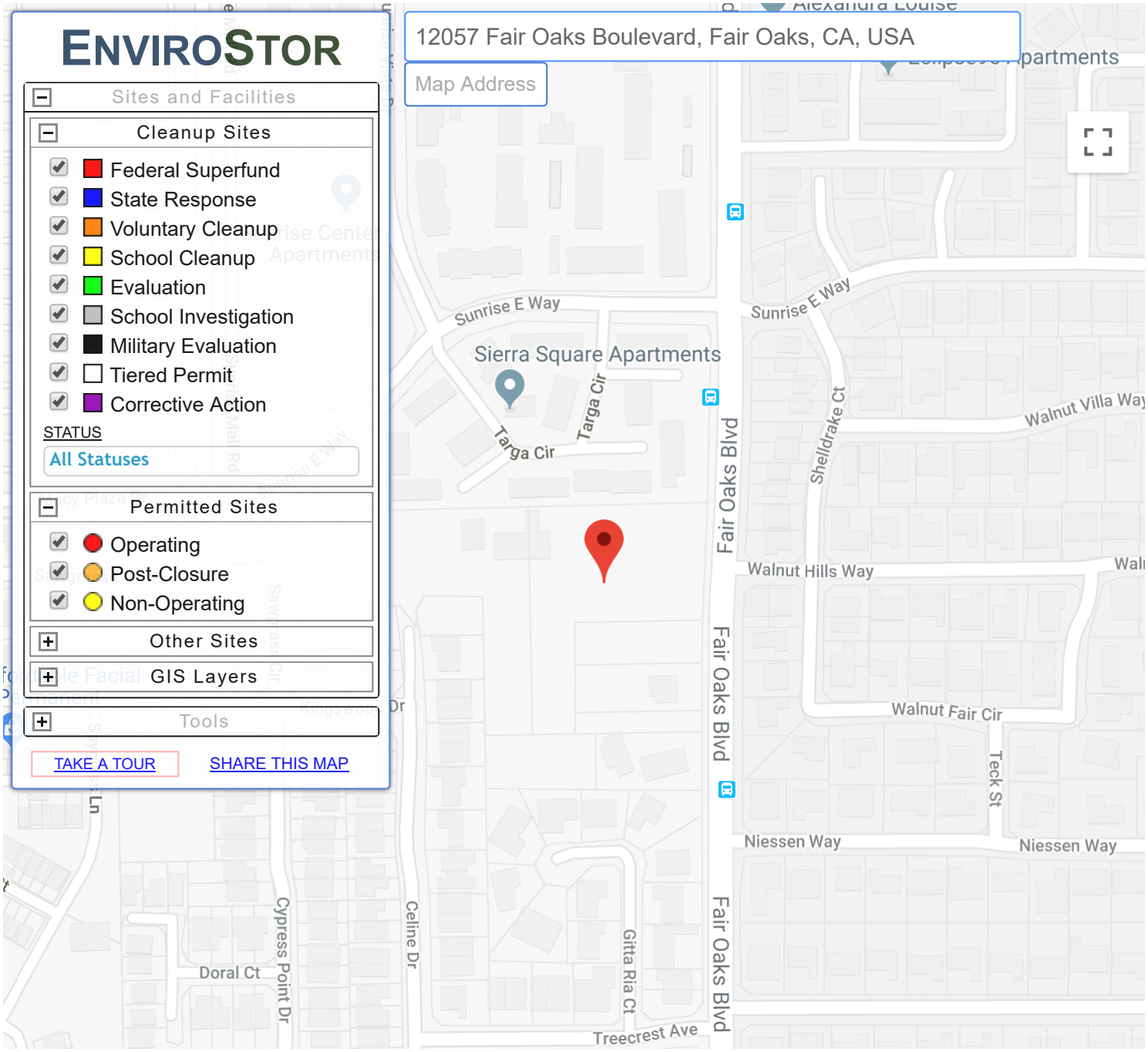
April 11, 2019, 11:46am

Request Opened

Public

Request received via web

April 11, 2019, 11:46am



SITES CURRENTLY VISIBLE ON MAP — 0 SITES LISTED — EXPORT THIS LIST TO EXCEL

PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY

GEOTRACKER

12057 Fair Oaks Boulevard, Fair Oaks, CA, USA

Map Address

Sites and Facilities - INFO

Cleanup Sites

- [x] LUST Cleanup Sites
- [x] Cleanup Program Sites
- [x] Military Cleanup Sites
- [ ] DTSC Cleanup Sites

Permitted Facilities

- [x] Waste Discharge Requirements (WDR) Sites
- [ ] Permitted USTs - INFO
- [ ] DTSC Hazardous Waste Sites
- [ ] Land Disposal Sites
- [x] Irrigated Lands Regulatory Program Sites
- [ ] Oil / Gas Sites
- [x] Confined Animal Sites

Other Sites

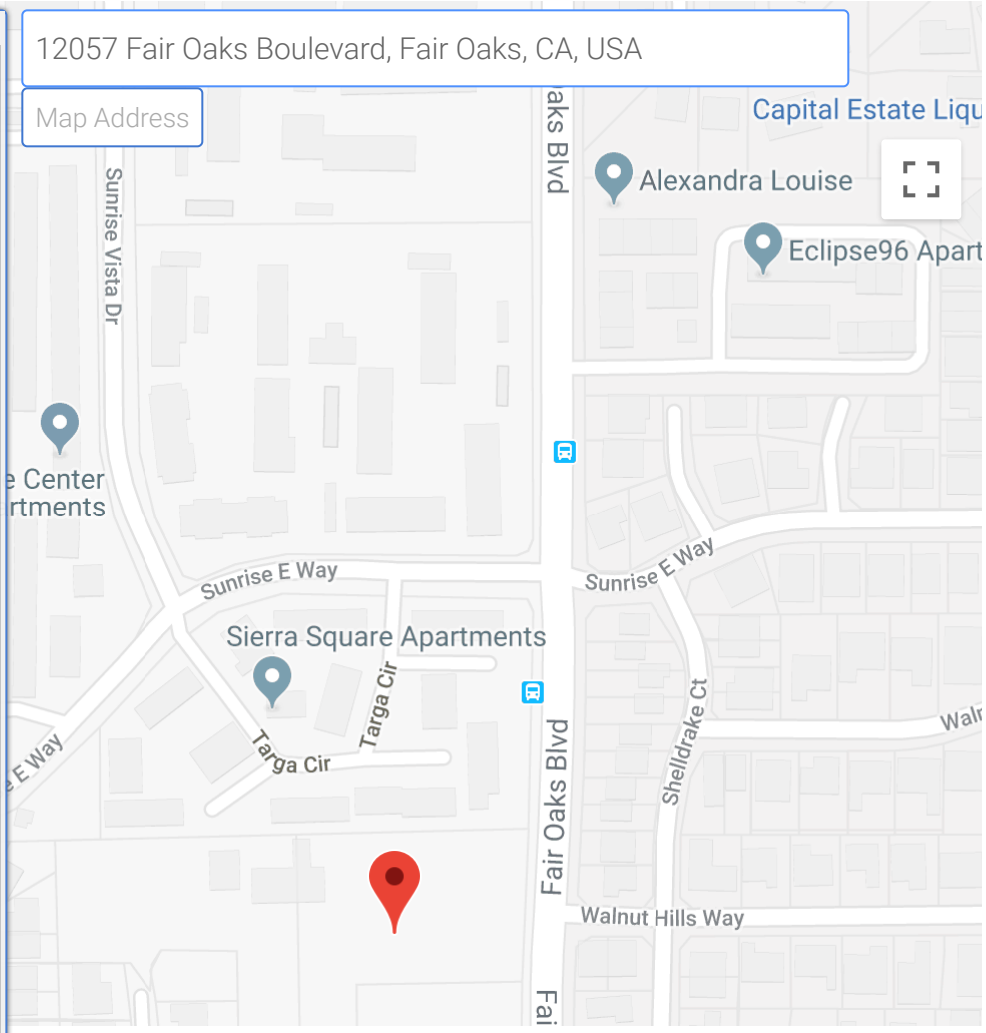
- [ ] Project Sites
- [ ] Non-Case Information Sites
- [ ] Sampling Points - Public
- [ ] Field Points

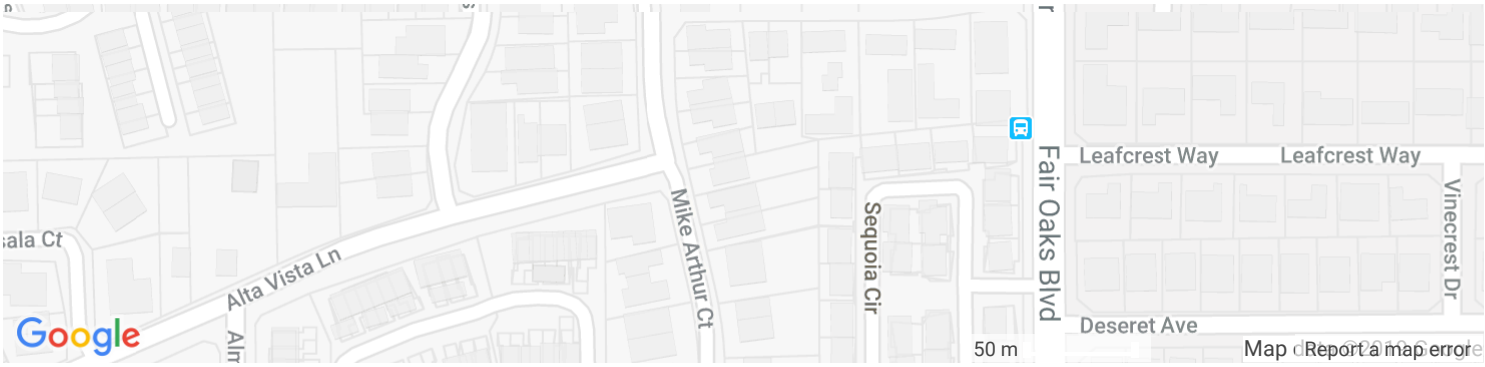
☒ SIGNIFIES A CLOSED SITE

Tools

Map Coverages

TAKE A TOUR VIEW ON GAMA





SITES CURRENTLY VISIBLE ON MAP

ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE

Please complete to the best of your knowledge. For those questions that are not applicable, please respond with an "N/A". For those questions that are unknown, please respond with "unknown".

1. PROPERTY INFORMATION:

Property Name: Fair Oaks Blvd. Apartments		
Property Address: 12057 Fair Oaks Blvd.		
City: Citrus Heights	State: CA	Zip:
Assessor's Parcel Number: 233-0430-002 / 233-0430-041 / 233-0430-007		
Property Owner & Contact Information: Stamas Corp.		
Date Property Owner Purchased: n/a		
Key Site Manager & Contact Information: Sam Stamas 916-783-0330		

2. COMPLETED BY

Signature:	Date: 04/11/2019
Printed Name: Samuel G. Stamas	Relation to Subject Property: Developer

3. PREVIOUS INVESTIGATIONS

Have any previous environmental investigations been performed at the property, including Phase I ESAs, Phase II Subsurface Investigations, Remediation, Asbestos or Lead-Based Paint surveys? No

(If yes, please provide copies)

4. PROPERTY DESCRIPTION

Property Size: ± 5 acres Number of Building(s): Home/Outbuildings to be demolished.

Size of Building(s):

Date of Construction: ?

Property Type: (please circle)

Multi-Family Hotel Mobile Home Park Retail/Commercial Industrial Office

Other: Currently in rezone process from Ag to Multi-family

Please provide Rent Roll if Applicable.

Historical Use of Property: Home - small farm

PARTNER

5. Surrounding Property Uses

Direction	Use
North	Apartments
South	Single-family homes
East	Single family homes
West	Single family homes

Are you aware of any potential environmental concerns associated with surrounding properties?

_____ YES X NO

If yes, please describe: _____

6. Utilities & Services

Please provide the name of the utility or contractor providing the following:

Electric	SMUD	Bio-hazardous Waste	n/a
Gas	PG&E	Elevator Maintenance	n/a
Potable Water	Fair Oaks W.D.	Used Grease	n/a
Sanitary Sewer	Sac County	Hazardous Waste	n/a

7. On Site Operations

Are you aware of any of the following conditions, either past or present, on the property?		
Condition	**Response**	**If yes, please describe**
1. Stored Chemicals	☐ Yes ☒ No	
2. Underground Storage Tanks	☐ Yes ☒ No	
3. Aboveground Storage Tanks	☐ Yes ☒ No	
4. Spills or Releases	☐ Yes ☒ No	
5. Dump Areas/Landfills	☐ Yes ☒ No	
6. Waste Treatment Systems	☐ Yes ☒ No	
7. Clarifiers/Separators	☐ Yes ☒ No	
8. Vents/Odors	☐ Yes ☒ No	
9. Floor Drains/Sumps	☐ Yes ☒ No	
10. Stained Soil	☐ Yes ☒ No	
11. Electrical Transformers	☐ Yes ☒ No	
12. Hydraulic Lifts/Elevators	☐ Yes ☒ No	
13. Dry Cleaning Operations	☐ Yes ☒ No	
14. Oil/Gas/Water/Monitoring Wells	☐ Yes ☒ No	
15. Environmental Permits	☐ Yes ☒ No	

PARTNER

PHASE I ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE

The following questionnaire is required by the ASTM Standard E 1527-13, which adheres to the All Appropriate Inquiries (AAI) Rule (United States Environmental Protection Agency) (40 CFR 312).

As defined by ASTM, the User of the report is the *"party seeking to use Practice E 1527 to complete an environmental site assessment of the property. A user may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager. The user has specific obligations for completing a successful application of this practice."*

PROPERTY ADDRESS:	12057 Fair Oaks Blvd
PROPERTY CITY, STATE ZIP:	Citrus Heights, CA

1. **Environmental liens that are filed or recorded against the property (40 CFR 312.25)**

   Did a search of recorded land title records (or judicial records) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law?

   ☐ YES ☑ NO

2. **Activity and use limitations (AULs) that are in place on the property or that have been filed or records against the property (40 CFR 312.26(a)(1)(v) and (vi))**

   Did a search of recorded land title records (or judicial records) identify any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law?

   ☐ YES ☐ NO

   See attached title report

3. **Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28)**

   Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

   ☐ YES ☑ NO

PARTNER

4. **Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29)**
Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

☐ YES ☐ NO

I have no knowledge of any contamination. Therefore this question is not applicable.

5. **Commonly known or reasonably ascertainable information about the Property (40 CFR 312.30)**
Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases?

☑ YES ☐ NO

Seller may have additional information. You may contact me for their information.

a. Do you know the past uses of the property?

☑ YES ☐ NO

Home, small animal farm. Horses and ducks.

b. Do you know of specific chemicals that are present or once were present at the property?

☐ YES ☑ NO

c. Do you know of spills or other chemical releases that have taken place at the property?

☐ YES ☑ NO

d. Do you know of any environmental cleanups that have taken place at the property?

☐ YES ☑ NO

e. Do you have any prior knowledge that the property was developed as a gas station, dry cleaner, manufacturing/industrial facility in the past?

☐ YES ☑ NO

f. Are you aware of historical use of hazardous materials or petroleum products used or present on the property?

☐ YES ☑ NO

g. Do you know if the property is currently or was formerly equipped with underground storage tanks (USTs) or septic tanks?

☐ YES ☑ NO

h. Do you know of any past, threatened or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

☐ YES ☑ NO

6. The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31)

Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of releases at the property?

☐ YES ☑ NO

Signature of User/Person Interviewed: _____

Name of User/Person Interviewed: Sam Stamas, Ionic Enterprises, Inc.

Title/Relationship to Property: Developer

Phone Number/Email: 916-783-0330

Date: 4/11/19

Contact for additional information:

Name: _____

Relationship to Property: _____

Phone Number/Email: _____

APPENDIX C: REGULATORY DATABASE REPORT

PARTNER

12057 Fair Oaks Boulevard
12057 Fair Oaks Boulevard
Citrus Heights, CA 95610

Inquiry Number: 5614353.2s
April 08, 2019

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Map Findings	8
Orphan Summary	39
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-8
Physical Setting Source Map Findings	A-10
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

12057 FAIR OAKS BOULEVARD
CITRUS HEIGHTS, CA 95610

COORDINATES

Latitude (North):	38.6710420 - 38˚ 40' 15.75''
Longitude (West):	121.2636060 - 121˚ 15' 48.98''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	651060.1
UTM Y (Meters):	4281496.0
Elevation:	202 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5619692 CITRUS HEIGHTS, CA
Version Date:	2012
East Map:	5629054 FOLSOM, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140621
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
12057 FAIR OAKS BOULEVARD
CITRUS HEIGHTS, CA 95610

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	PARINO'S PAINTING	8103 DESERET AV	Sacramento Co. ML	Lower	1123, 0.213, SSE
2	BATH & BODY WORKS #6	6036 SUNRISE MALL SP	CERS HAZ WASTE, HAZNET, Sacramento Co. ML	Lower	1264, 0.239, WSW
3	SEARS AUTO CENTER #6	5900 SUNRISE MALL	LUST, Sacramento Co. CS, Sacramento Co. ML, CERS	Lower	1848, 0.350, WNW
4	FORMER UNOCAL STATIO	8101 MADISON AVE	LUST, Sacramento Co. CS, AST, CERS HAZ WASTE, CERS...	Lower	2140, 0.405, SSE
5	UNOCAL #7256	8000 GREENBACK LN	LUST, Sacramento Co. CS, HIST CORTESE, Sacramento...	Lower	2563, 0.485, NNW
6	GREENBACK SQUARE CLE	8033 GREENBACK LN	ENVIROSTOR, DRYCLEANERS	Lower	2910, 0.551, North

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ..... Federal Facility Site Information listing
SEMS ..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List

EXECUTIVE SUMMARY

US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE..... State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
UST..... Active UST Facilities
AST..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup Program Properties
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register

EXECUTIVE SUMMARY

HIST Cal-Sites	Historical Calsites Database
SCH	School Property Evaluation Program
CDL	Clandestine Drug Labs
Toxic Pits	Toxic Pits Cleanup Act Sites
US CDL	National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

SWEEPS UST	SWEEPS UST Listing
HIST UST	Hazardous Substance Storage Container Database
CA FID UST	Facility Inventory Database
CERS TANKS	California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS	Environmental Liens Listing
LIENS 2	CERCLA Lien Information
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees

INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
FINDS	Facility Index System/Facility Registry System
DOCKET HWC	Hazardous Waste Compliance Docket Listing
UXO	Unexploded Ordnance Sites
ECHO	Enforcement & Compliance History Information
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
ICE	ICE
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
UIC GEO	UIC GEO (GEOTRACKER)
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)
WDR	Waste Discharge Requirements Listing
CIWQS	California Integrated Water Quality System
CERS	CERS
NON-CASE INFO	NON-CASE INFO (GEOTRACKER)
WIP	Well Investigation Program Case List
OTHER OIL GAS	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS	PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT	SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historical Auto Stations
EDR Hist Cleaner	EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 01/28/2019 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
GREENBACK SQUARE CLE Facility Id: 34720075 Status: Refer: Other Agency	***8033 GREENBACK LN***	***N 1/2 - 1 (0.551 mi.)***	***6***	***37***

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 3 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SEARS AUTO CENTER #6 Database: LUST, Date of Government Version: 12/10/2018	***5900 SUNRISE MALL***	***WNW 1/4 - 1/2 (0.350 mi.)***	***3***	***11***

Status: Open - Site Assessment
Global Id: T10000010976

FORMER UNOCAL STATIO	***8101 MADISON AVE***	***SSE 1/4 - 1/2 (0.405 mi.)***	***4***	***14***

Database: LUST REG 5, Date of Government Version: 07/01/2008
Database: LUST, Date of Government Version: 12/10/2018
Status: Completed - Case Closed
Status: Leak being confirmed
Global Id: T0606700736

UNOCAL #7256	***8000 GREENBACK LN***	***NNW 1/4 - 1/2 (0.485 mi.)***	***5***	***35***

Database: LUST REG 5, Date of Government Version: 07/01/2008
Database: LUST, Date of Government Version: 12/10/2018
Status: Completed - Case Closed
Status: Case Closed
Global Id: T0606700203

Sacramento Co. CS: List of sites where unauthorized releases of potentially hazardous materials have occurred.

A review of the Sacramento Co. CS list, as provided by EDR, and dated 11/07/2018 has revealed that there are 3 Sacramento Co. CS sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SEARS AUTO CENTER #6	***5900 SUNRISE MALL***	***WNW 1/4 - 1/2 (0.350 mi.)***	***3***	***11***
Facility Id: RO0001718				
FORMER UNOCAL STATIO	***8101 MADISON AVE***	***SSE 1/4 - 1/2 (0.405 mi.)***	***4***	***14***
Facility Id: RO0000737				
UNOCAL #7256	***8000 GREENBACK LN***	***NNW 1/4 - 1/2 (0.485 mi.)***	***5***	***35***
Facility Id: RO0000601				
Date Closed: 06/24/1997				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

CERS HAZ WASTE: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 10/22/2018 has revealed that there is 1 CERS HAZ WASTE site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BATH & BODY WORKS #6	***6036 SUNRISE MALL SP***	***WSW 1/8 - 1/4 (0.239 mi.)***	***2***	***8***

Other Ascertainable Records

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 2 HIST CORTESE sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORMER UNOCAL STATIO Reg Id: 340890	***8101 MADISON AVE***	***SSE 1/4 - 1/2 (0.405 mi.)***	***4***	***14***
UNOCAL #7256 Reg Id: 340262	***8000 GREENBACK LN***	***NNW 1/4 - 1/2 (0.485 mi.)***	***5***	***35***

Sacramento Co. ML: Sacramento County Master List. Any business that has hazardous materials on site - hazardous materials storage sites, underground storage tanks, waste generators.

A review of the Sacramento Co. ML list, as provided by EDR, and dated 11/07/2018 has revealed that there are 2 Sacramento Co. ML sites within approximately 0.25 miles of the target property.

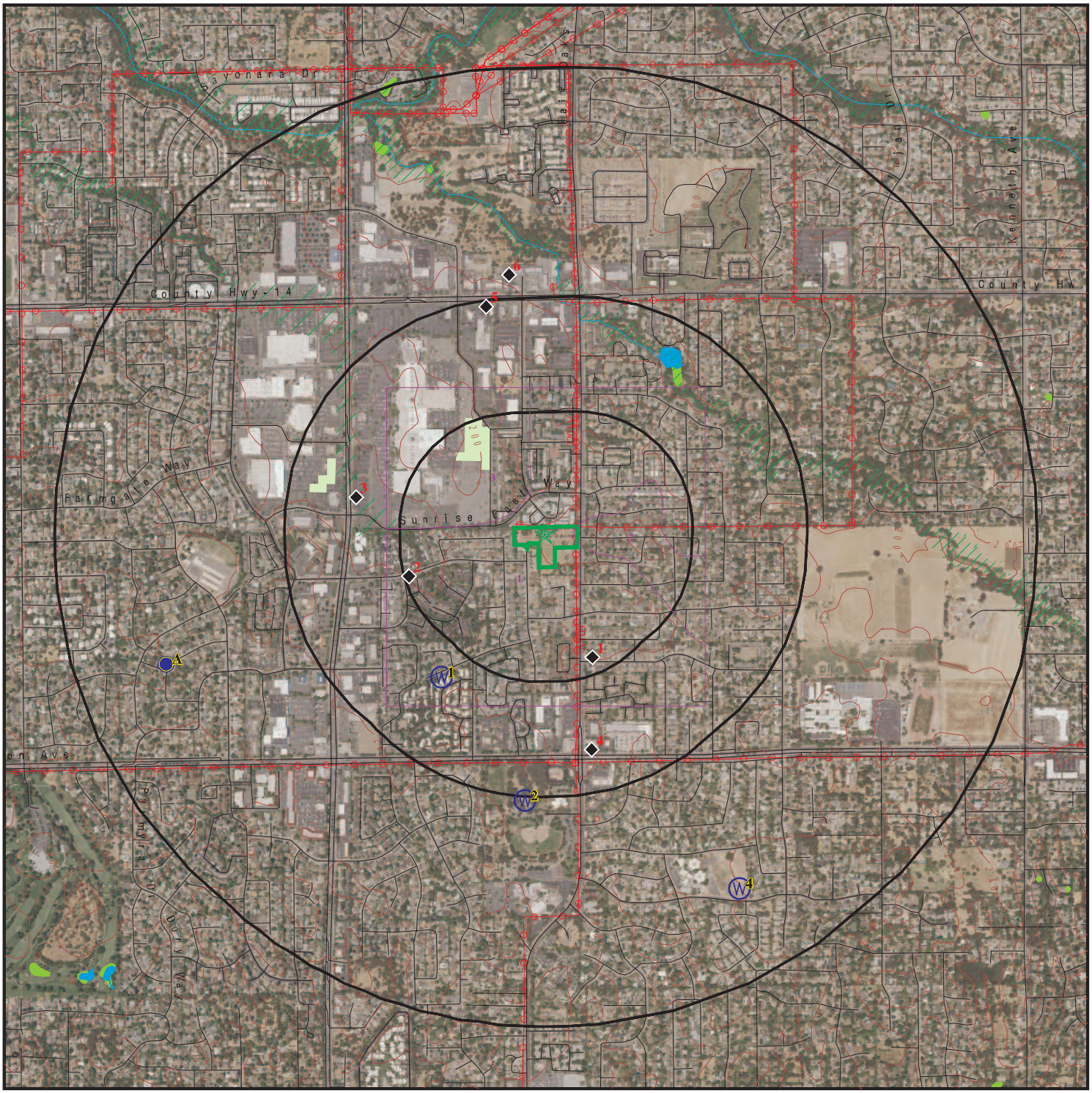
Lower Elevation	Address	Direction / Distance	Map ID	Page
PARINO'S PAINTING Facility Status: Inactive. Included on a listing no longer updated.	8103 DESERET AV	SSE 1/8 - 1/4 (0.213 mi.)	1	8
BATH & BODY WORKS #6	***6036 SUNRISE MALL SP***	***WSW 1/8 - 1/4 (0.239 mi.)***	***2***	***8***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
FAIR OAKS BLVD SAVEREIN DR	CIWQS

OVERVIEW MAP - 5614353.2S



0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	12057 Fair Oaks Boulevard	CLIENT:	Partner Engineering and Science, Inc.
ADDRESS:	12057 Fair Oaks Boulevard Citrus Heights CA 95610	CONTACT:	Aimee Tamayo
		INQUIRY #:	5614353.2s
LAT/LONG:	38.671042 / 121.263606	DATE:	April 08, 2019 12:43 pm

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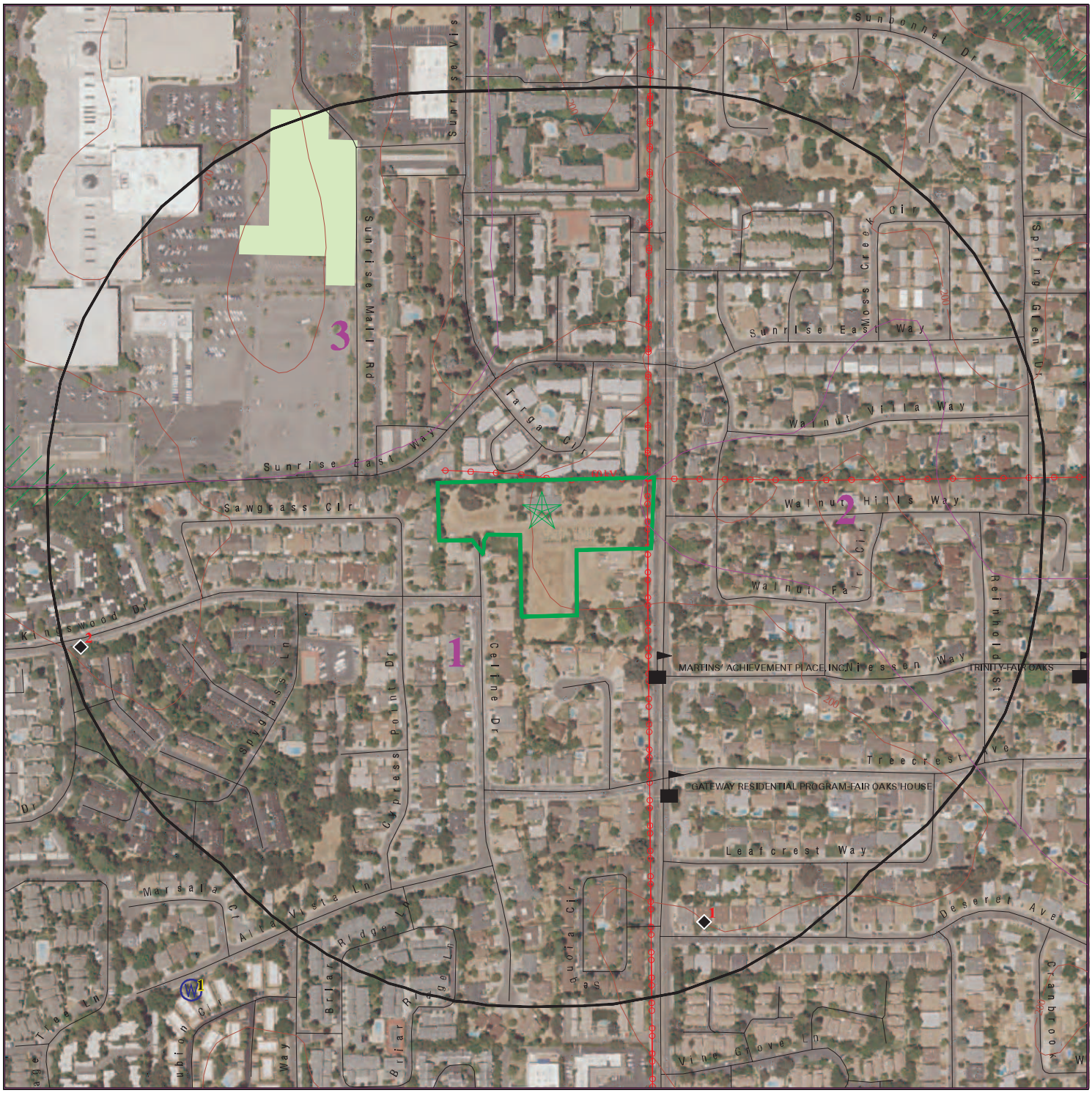
DETAIL MAP - 5614353.2S



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	12057 Fair Oaks Boulevard	CLIENT:	Partner Engineering and Science, Inc.
ADDRESS:	12057 Fair Oaks Boulevard Citrus Heights CA 95610	CONTACT:	Aimee Tamayo
		INQUIRY #:	5614353.2s
LAT/LONG:	38.671042 / 121.263606	DATE:	April 08, 2019 12:48 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	1	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	3	NR	NR	3

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
Sacramento Co. CS	0.500		0	0	3	NR	NR	3
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250		0	1	NR	NR	NR	1
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	2	NR	NR	2
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
Sacramento Co. ML	0.250		0	2	NR	NR	NR	2
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
UIC GEO	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
MILITARY PRIV SITES	TP		NR	NR	NR	NR	NR	0
PROJECT	TP		NR	NR	NR	NR	NR	0
WDR	TP		NR	NR	NR	NR	NR	0
CIWQS	TP		NR	NR	NR	NR	NR	0
CERS	TP		NR	NR	NR	NR	NR	0
NON-CASE INFO	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
OTHER OIL GAS	TP		NR	NR	NR	NR	NR	0
PROD WATER PONDS	TP		NR	NR	NR	NR	NR	0
SAMPLING POINT	TP		NR	NR	NR	NR	NR	0
WELL STIM PROJ	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	3	8	1	0	12

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
SSE
1/8-1/4
0.213 mi.
1123 ft.

PARINO'S PAINTING
8103 DESERET AV
FAIR OAKS, CA 95628

Sacramento Co. ML

S105268556
N/A

Relative:
Lower

Actual:
200 ft.

Sacramento Co. ML:

Facility Id:	Not reported
Facility Status:	Inactive. Included on a listing no longer updated.
FD:	I
Billing Codes BP:	Out of Business
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	51
Food Bill Code:	51
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported

2
WSW
1/8-1/4
0.239 mi.
1264 ft.

BATH & BODY WORKS #613
6036 SUNRISE MALL SPC D-9A
CITRUS HEIGHTS, CA 95610

CERS HAZ WASTE
HAZNET
Sacramento Co. ML

S121782595
N/A

Relative:
Lower

Actual:
179 ft.

CERS HAZ WASTE:

Site ID:	426750
CERS ID:	10745263
CERS Description:	Hazardous Waste Generator

Affiliation:

Affiliation Type Desc:	CUPA District
Entity Name:	Sacramento County Environmental Management Departm
Entity Title:	Not reported
Affiliation Address:	10590 Armstrong Avenue, Suite A
Affiliation City:	Sacramento
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95655
Affiliation Phone:	(916) 875-8550
Affiliation Type Desc:	Environmental Contact
Entity Name:	Mike Ryan
Entity Title:	Not reported
Affiliation Address:	2 LIMITED PARKWAY
Affiliation City:	COLUMBUS
Affiliation State:	OH
Affiliation Country:	Not reported
Affiliation Zip:	43230
Affiliation Phone:	(614) 415-1769

BATH & BODY WORKS #613 (Continued) **S121782595**

Affiliation Type Desc:	Operator
Entity Name:	BATH & BODY WORKS #613
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(916) 965-9369

Affiliation Type Desc:	Parent Corporation
Entity Name:	L Brands
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Document Preparer
Entity Name:	ASHLEY CAMPBELL
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	2 LIMITED PARKWAY/ATTN: MIKE RYAN
Affiliation City:	COLUMBUS
Affiliation State:	OH
Affiliation Country:	Not reported
Affiliation Zip:	43230
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Ashley Campbell
Entity Title:	COMPLIANCE & REGULATORY AFFAIRS SPEC
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Legal Owner
Entity Name:	BATH & BODY WORKS LLC
Entity Title:	Not reported
Affiliation Address:	7 LIMITED PARKWAY
Affiliation City:	REYNOLDSBURG
Affiliation State:	OH
Affiliation Country:	United States

BATH & BODY WORKS #613 (Continued) **S121782595**

Affiliation Zip: 43068
Affiliation Phone: (614) 856-6000

HAZNET:
Facility Name: BATH & BODY WORKS #613
envid: S121782595
Year: 2017
GEPAID: CAL000427575
Contact: MIKE RYAN
Telephone: 6144151769
Mailing Name: Not reported
Mailing Address: 2 LIMITED PKWY
Mailing City,St,Zip: COLUMBUS, OH 43230
Gen County: Sacramento
TSD EPA ID: NVD980895338
TSD County: 99
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.105
Cat Decode: Off-specification, aged or surplus organics
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: Sacramento

envid: S121782595
Year: 2017
GEPAID: CAL000427575
Contact: MIKE RYAN
Telephone: 6144151769
Mailing Name: Not reported
Mailing Address: 2 LIMITED PKWY
Mailing City,St,Zip: COLUMBUS, OH 43230
Gen County: Sacramento
TSD EPA ID: CAD980884183
TSD County: Sacramento
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.1525
Cat Decode: Off-specification, aged or surplus organics
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: Sacramento

Sacramento Co. ML:
Facility Id: Not reported
Facility Status: Not reported
FD: Not reported
Billing Codes BP: I
Billing Codes UST: Not reported
WG Bill Code: A
Target Property Bill Cod: Not reported
Food Bill Code: Not reported
CUPA Permit Date: Not reported

BATH & BODY WORKS #613 (Continued) **S121782595**

HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported

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3 WNW 1/4-1/2 0.350 mi. 1848 ft.

SEARS AUTO CENTER #6799
5900 SUNRISE MALL
CITRUS HEIGHTS, CA 95610

LUST **S121307854**
Sacramento Co. CS **N/A**
Sacramento Co. ML
CERS

Relative: Lower

Actual: 172 ft.

LUST:

Lead Agency:	SACRAMENTO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000010976
Global Id:	T10000010976
Latitude:	38.67164
Longitude:	-121.26927
Status:	Open - Site Assessment
Status Date:	09/22/2017
Case Worker:	CWL
RB Case Number:	341540
Local Agency:	SACRAMENTO COUNTY LOP
File Location:	Not reported
Local Case Number:	G150
Potential Media Affect:	Not reported
Potential Contaminants of Concern:	Diesel, Gasoline
Site History:	A complete site history is located here.

LUST:

Global Id:	T10000010976
Contact Type:	Local Agency Caseworker
Contact Name:	CHARLEY LANGER
Organization Name:	SACRAMENTO COUNTY LOP
Address:	10590 ARMSTRONG AVENUE, SUITE A
City:	MATHER
Email:	langerc@saccounty.net
Phone Number:	9168758474

LUST:

Global Id:	T10000010976
Action Type:	RESPONSE
Date:	07/18/2017
Action:	Preliminary Site Assessment Report
Global Id:	T10000010976
Action Type:	Other
Date:	08/02/2016

SEARS AUTO CENTER #6799 (Continued) **S121307854**

Action: Leak Reported

Global Id: T10000010976
Action Type: RESPONSE
Date: 02/13/2018
Action: CAP/RAP - Final Remediation / Design Plan - Regulator Responded

Global Id: T10000010976
Action Type: RESPONSE
Date: 10/04/2018
Action: Site Investigation Workplan - Regulator Responded

Global Id: T10000010976
Action Type: RESPONSE
Date: 08/01/2018
Action: Request for Closure - Regulator Responded

Global Id: T10000010976
Action Type: ENFORCEMENT
Date: 09/14/2018
Action: Staff Letter

Global Id: T10000010976
Action Type: ENFORCEMENT
Date: 11/02/2018
Action: Email Correspondence

Global Id: T10000010976
Action Type: ENFORCEMENT
Date: 03/07/2018
Action: Email Correspondence

Global Id: T10000010976
Action Type: ENFORCEMENT
Date: 09/27/2017
Action: Notice of Responsibility

Global Id: T10000010976
Action Type: Other
Date: 10/26/2015
Action: Leak Discovery

Global Id: T10000010976
Action Type: RESPONSE
Date: 03/07/2018
Action: Response to Comments

LUST:
Global Id: T10000010976
Status: Open - Case Begin Date
Status Date: 10/26/2015

Global Id: T10000010976
Status: Open - Site Assessment
Status Date: 09/22/2017

SEARS AUTO CENTER #6799 (Continued) **S121307854**

Sacramento Co. CS:

State Site Number:	G150
Lead Staff:	Langer, C.
Lead Agency:	HM
Remedial Action Taken:	NO
Substance:	Not reported
Date Reported:	Not reported
Facility Id:	RO0001718
Case Type:	Not reported
Case Closed:	Not reported
Date Closed:	**Not reported**
Case Type:	**Not reported**
Substance:	**Not reported**

Sacramento Co. ML:

Facility Id:	Not reported
Facility Status:	Not reported
FD:	Not reported
Billing Codes BP:	A
Billing Codes UST:	Not reported
WG Bill Code:	A
Target Property Bill Cod:	Not reported
Food Bill Code:	Not reported
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported

CERS TANKS:

Site ID:	426856
CERS ID:	T10000010976
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	CHARLEY LANGER - SACRAMENTO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	10590 ARMSTRONG AVENUE, SUITE A
Affiliation City:	MATHER
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	9168758474

4 SSE 1/4-1/2 0.405 mi. 2140 ft.

Relative: Lower

Actual: 196 ft.

FORMER UNOCAL STATION #5134
8101 MADISON AVE
FAIR OAKS, CA 95628

LUST
Sacramento Co. CS
AST
CERS HAZ WASTE
CERS TANKS
HIST CORTESE
CERS

S102430378
N/A

LUST:

Lead Agency:	SACRAMENTO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700736
Global Id:	T0606700736
Latitude:	38.664481173
Longitude:	-121.26187975
Status:	Completed - Case Closed
Status Date:	03/03/2017
Case Worker:	CWL
RB Case Number:	340890
Local Agency:	SACRAMENTO COUNTY LOP
File Location:	Local Agency
Local Case Number:	E503
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	A complete site history is located here.

LUST:

Global Id:	T0606700736
Contact Type:	Local Agency Caseworker
Contact Name:	CHARLEY LANGER
Organization Name:	SACRAMENTO COUNTY LOP
Address:	10590 ARMSTRONG AVENUE, SUITE A
City:	MATHER
Email:	langerc@saccounty.net
Phone Number:	9168758474

Global Id:	T0606700736
Contact Type:	Regional Board Caseworker
Contact Name:	VERA FISCHER
Organization Name:	CENTRAL VALLEY RWQCB (REGION 5S)
Address:	11020 SUN CENTER DRIVE #200
City:	RANCHO CORDOVA
Email:	vera.fischer@waterboards.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0606700736
Action Type:	ENFORCEMENT
Date:	03/03/2017
Action:	Closure/No Further Action Letter

Global Id:	T0606700736
Action Type:	ENFORCEMENT
Date:	12/11/2006
Action:	File review

Global Id:	T0606700736

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Action Type: ENFORCEMENT
Date: 10/20/2005
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 11/16/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 04/21/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 11/10/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 08/05/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 11/03/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/30/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 11/05/2008
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 04/25/2008
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: Other
Date: 02/08/1994
Action: Leak Reported

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/20/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 11/17/2004

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 05/28/2004
Action: File review

Global Id: T0606700736
Action Type: RESPONSE
Date: 02/20/2015
Action: Request for Closure - Regulator Responded

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 01/30/2009
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 03/17/2009
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 03/30/2009
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 08/01/2008
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 02/04/1994
Action: Notice of Reimbursement

Global Id: T0606700736
Action Type: RESPONSE
Date: 03/11/2016
Action: Request for Closure - Regulator Responded

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/31/2009
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/06/2009
Action: Staff Letter

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 09/30/2009
Action: Staff Letter

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 11/03/2009
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 03/11/2016
Action: File Review - Closure

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 08/25/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 03/03/2005
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 02/17/2010
Action: Staff Letter

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 03/25/2010
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 01/20/2011
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/30/2010
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 12/20/2010
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 08/01/2011
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/05/2011
Action: Staff Letter

Global Id: T0606700736
Action Type: ENFORCEMENT

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Date: 05/06/2010
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/20/2011
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 11/28/2011
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 02/09/2012
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/15/2013
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 10/15/2013
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/03/2013
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 01/12/2012
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 04/09/2012
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 01/09/2013
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 02/03/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 04/08/2013
Action: Technical Correspondence / Assistance / Other

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 10/11/2012
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/05/2012
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 04/15/2014
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 01/15/2014
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/09/2014
Action: Technical Correspondence / Assistance / Other

Global Id: T0606700736
Action Type: RESPONSE
Date: 03/10/2009
Action: Correspondence

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 02/18/2003
Action: File review

Global Id: T0606700736
Action Type: REMEDIATION
Date: 05/01/2003
Action: Soil Vapor Extraction (SVE)

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 05/24/2006
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 11/05/2007
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 03/04/2009
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Date: 04/30/2007
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 02/10/2006
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 01/27/2006
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 11/15/2006
Action: Meeting

Global Id: T0606700736
Action Type: REMEDIATION
Date: 02/01/1993
Action: Excavation

Global Id: T0606700736
Action Type: Other
Date: 02/01/1993
Action: Leak Discovery

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 02/02/2007
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/31/2007
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 02/25/2015
Action: File Review - Closure

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 02/20/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 09/23/1999
Action: Notice of Responsibility

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/14/2015
Action: Technical Correspondence / Assistance / Other

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Global Id: T0606700736
Action Type: Other
Date: 02/01/1993
Action: Leak Stopped

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 05/26/2004
Action: Meeting

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 07/20/2005
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 05/10/2004
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 02/04/2005
Action: File review

Global Id: T0606700736
Action Type: ENFORCEMENT
Date: 01/29/2008
Action: File review

LUST:
Global Id: T0606700736
Status: Completed - Case Closed
Status Date: 03/03/2017

Global Id: T0606700736
Status: Open - Case Begin Date
Status Date: 02/01/1993

Global Id: T0606700736
Status: Open - Eligible for Closure
Status Date: 04/28/2016

Global Id: T0606700736
Status: Open - Remediation
Status Date: 06/22/2000

Global Id: T0606700736
Status: Open - Site Assessment
Status Date: 02/03/1994

LUST REG 5:
Region: 5
Status: Leak being confirmed
Case Number: 340890

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Case Type: Drinking Water Aquifer affected
Substance: GASOLINE
Staff Initials: VJF
Lead Agency: Local
Program: LUST
MTBE Code: 5

Sacramento Co. CS:
State Site Number: A296
Lead Staff: Langer, C.
Lead Agency: HM
Remedial Action Taken: NO
Substance: Automotive(motor gasoline and additives)
Date Reported: 02/01/1993
Facility Id: RO0000737
Case Type: Other ground water affected
Case Closed: Not reported
Date Closed: Not reported
Case Type: Other Groundwater affected (uses other than drinking water)
Substance: Automotive(motor gasoline and additives)

AST:
Certified Unified Program Agencies: Not reported
Owner: TTL Automotive Enterprises, Inc.
Total Gallons: Not reported
CERSID: 10224526
Facility ID: Not reported
Business Name: OILSTOP
Phone: (916) 967-0229
Fax: (916) 967-5136
Mailing Address: 1113 Los Robles Street
Mailing Address City: Davis
Mailing Address State: CA
Mailing Address Zip Code: 95618
Operator Name: Thomas S. Lyon
Operator Phone: (530) 400-2613
Owner Phone: (530) 400-2613
Owner Mail Address: 1113 Los Robles Street
Owner State: CA
Owner Zip Code: 95618
Owner Country: United States
Property Owner Name: Thomas S. Lyon
Property Owner Phone: (530) 400-2613
Property Owner Mailing Address: 1113 Los Robles Street
Property Owner City: Davis
Property Owner Stat : CA
Property Owner Zip Code: 95618
Property Owner Country: United States
EPAID: CAL000238062

CERS HAZ WASTE:
Site ID: 139766
CERS ID: 10224526
CERS Description: Hazardous Waste Generator

Violations:

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Site ID:	139766
Site Name:	OILSTOP
Violation Date:	03-27-2017
Citation:	22 CCR 15 66265.192(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.192(a)
Violation Description:	Failure to obtain and maintain a written assessment reviewed and certified by an independent, qualified, professional engineer prior to placing the tank system in service. The written assessment shall state that, the new hazardous waste tank system has sufficient structural integrity, is acceptable for the transferring, storing and treating of hazardous waste, and that the tanks and containment system including the foundation, structural support, seams, connections, and pressure controls (if applicable) are suitably designed to meet the regulation.
Violation Notes:	Returned to compliance on 04/25/2017. OBSERVATION: A written hazardous waste tank assessment has not been obtained for the Waste Oil tank system. CORRECTIVE ACTION: Obtain a written hazardous waste tank system assessment for the Waste Oil tank system in accordance with 22 CCR 15 66265.192 and submit a copy to this department.
Violation Division:	Sacramento County Env Management Department
Violation Program:	HW
Violation Source:	CERS

Site ID:	139766
Site Name:	OILSTOP
Violation Date:	02-21-2014
Citation:	19 CCR 4 2729.2(a)(3) - California Code of Regulations, Title 19, Chapter 4, Section(s) 2729.2(a)(3)
Violation Description:	Failure to complete and/or submit an annotated site map if required by CUPA.
Violation Notes:	Returned to compliance on 04/25/2017. OBSERVATION: The annotated site map submitted to this department does not include directional orientation, new product placement, and employee meeting place in case on emergency. CORRECTIVE ACTION: Revise the annotated Site Map to include all required content and submit electronically in this department's e-Reporting Portal or in the California Environmental Reporting System. Notify the County (Mr. Steele) when this has been accomplished.
Violation Division:	Sacramento County Env Management Department
Violation Program:	HMRRP
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-27-2017
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	No violations observed at time of inspection.
Eval Division:	Sacramento County Env Management Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	03-27-2017
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	No violations observed at time of inspection.
Eval Division:	Sacramento County Env Management Department

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Eval Program:	APSA
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	02-21-2014
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	NO VIOLATIONS observed at this time.
Eval Division:	Sacramento County Env Management Department
Eval Program:	APSA
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	02-21-2014
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	NO VIOLATIONS observed at this time.
Eval Division:	Sacramento County Env Management Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	02-21-2014
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Sacramento County Env Management Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-27-2017
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Sacramento County Env Management Department
Eval Program:	HW
Eval Source:	CERS

Enforcement Action:

Site ID:	139766
Site Name:	OILSTOP
Site Address:	8101 MADISON AVE
Site City:	FAIR OAKS
Site Zip:	95628
Enf Action Date:	02-21-2014
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	Sacramento County Env Management Department
Enf Action Program:	HMRRP
Enf Action Source:	CERS

Coordinates:

Site ID:	139766
Facility Name:	OILSTOP

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Env Int Type Code:	HWG
Program ID:	10224526
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.
Latitude:	38.664420
Longitude:	-121.261720

Affiliation:

Affiliation Type Desc:	Document Preparer
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Operator
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(530) 400-2613

Affiliation Type Desc:	Parent Corporation
Entity Name:	OilStop
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95618
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Thomas S. Lyon
Entity Title:	Owner
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Affiliation Type Desc:	Legal Owner
Entity Name:	TTL Automotive Enterprises, Inc.
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95618
Affiliation Phone:	(530) 400-2613

Affiliation Type Desc:	CUPA District
Entity Name:	Sacramento County Environmental Management Departm
Entity Title:	Not reported
Affiliation Address:	10590 Armstrong Avenue, Suite A
Affiliation City:	Sacramento
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95655
Affiliation Phone:	(916) 875-8550

Affiliation Type Desc:	Environmental Contact
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95618
Affiliation Phone:	(530) 400-2613

Affiliation Type Desc:	Property Owner
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95618
Affiliation Phone:	(530) 400-2613

CERS TANKS:

Site ID:	139766
CERS ID:	10224526
CERS Description:	Aboveground Petroleum Storage

Violations:

Site ID:	139766
Site Name:	OILSTOP
Violation Date:	03-27-2017
Citation:	22 CCR 15 66265.192(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.192(a)
Violation Description:	Failure to obtain and maintain a written assessment reviewed and certified by an independent, qualified, professional engineer prior to placing the tank system in service. The written assessment shall state that, the new hazardous waste tank system has sufficient structural integrity, is acceptable for the transferring, storing and treating of

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

	hazardous waste, and that the tanks and containment system including the foundation, structural support, seams, connections, and pressure controls (if applicable) are suitably designed to meet the regulation.
Violation Notes:	Returned to compliance on 04/25/2017. OBSERVATION: A written hazardous waste tank assessment has not been obtained for the Waste Oil tank system. CORRECTIVE ACTION: Obtain a written hazardous waste tank system assessment for the Waste Oil tank system in accordance with 22 CCR 15 66265.192 and submit a copy to this department.
Violation Division:	Sacramento County Env Management Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	139766
Site Name:	OILSTOP
Violation Date:	02-21-2014
Citation:	19 CCR 4 2729.2(a)(3) - California Code of Regulations, Title 19, Chapter 4, Section(s) 2729.2(a)(3)
Violation Description:	Failure to complete and/or submit an annotated site map if required by CUPA.
Violation Notes:	Returned to compliance on 04/25/2017. OBSERVATION: The annotated site map submitted to this department does not include directional orientation, new product placement, and employee meeting place in case on emergency. CORRECTIVE ACTION: Revise the annotated Site Map to include all required content and submit electronically in this department's e-Reporting Portal or in the California Environmental Reporting System. Notify the County (Mr. Steele) when this has been accomplished.
Violation Division:	Sacramento County Env Management Department
Violation Program:	HMRRP
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-27-2017
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	No violations observed at time of inspection.
Eval Division:	Sacramento County Env Management Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	03-27-2017
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	No violations observed at time of inspection.
Eval Division:	Sacramento County Env Management Department
Eval Program:	APSA
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	02-21-2014
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	NO VIOLATIONS observed at this time.
Eval Division:	Sacramento County Env Management Department
Eval Program:	APSA

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 02-21-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: NO VIOLATIONS observed at this time.
Eval Division: Sacramento County Env Management Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 02-21-2014
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Sacramento County Env Management Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Sacramento County Env Management Department
Eval Program: HW
Eval Source: CERS

Enforcement Action:
Site ID: 139766
Site Name: OILSTOP
Site Address: 8101 MADISON AVE
Site City: FAIR OAKS
Site Zip: 95628
Enf Action Date: 02-21-2014
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Sacramento County Env Management Department
Enf Action Program: HMRRP
Enf Action Source: CERS

Coordinates:
Site ID: 139766
Facility Name: OILSTOP
Env Int Type Code: HWG
Program ID: 10224526
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 38.664420
Longitude: -121.261720

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: Thomas S. Lyon

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Operator
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(530) 400-2613

Affiliation Type Desc:	Parent Corporation
Entity Name:	OilStop
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95618
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Thomas S. Lyon
Entity Title:	Owner
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Legal Owner
Entity Name:	TTL Automotive Enterprises, Inc.
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95618
Affiliation Phone:	(530) 400-2613

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Affiliation Type Desc:	CUPA District
Entity Name:	Sacramento County Environmental Management Departm
Entity Title:	Not reported
Affiliation Address:	10590 Armstrong Avenue, Suite A
Affiliation City:	Sacramento
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95655
Affiliation Phone:	(916) 875-8550

Affiliation Type Desc:	Environmental Contact
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95618
Affiliation Phone:	(530) 400-2613

Affiliation Type Desc:	Property Owner
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95618
Affiliation Phone:	(530) 400-2613

HIST CORTESE:

Region:	CORTESE
Facility County Code:	34
Reg By:	LTNKA
Reg Id:	340890

CERS TANKS:

Site ID:	139766
CERS ID:	10224526
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	139766
Site Name:	OILSTOP
Violation Date:	03-27-2017
Citation:	22 CCR 15 66265.192(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.192(a)
Violation Description:	Failure to obtain and maintain a written assessment reviewed and certified by an independent, qualified, professional engineer prior to placing the tank system in service. The written assessment shall state that, the new hazardous waste tank system has sufficient structural integrity, is acceptable for the transferring, storing and treating of hazardous waste, and that the tanks and containment system including the foundation, structural support, seams, connections, and pressure controls (if applicable) are suitably designed to meet the regulation.
Violation Notes:	Returned to compliance on 04/25/2017. OBSERVATION: A written hazardous

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

	waste tank assessment has not been obtained for the Waste Oil tank system. CORRECTIVE ACTION: Obtain a written hazardous waste tank system assessment for the Waste Oil tank system in accordance with 22 CCR 15 66265.192 and submit a copy to this department.
Violation Division:	Sacramento County Env Management Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	139766
Site Name:	OILSTOP
Violation Date:	02-21-2014
Citation:	19 CCR 4 2729.2(a)(3) - California Code of Regulations, Title 19, Chapter 4, Section(s) 2729.2(a)(3)
Violation Description:	Failure to complete and/or submit an annotated site map if required by CUPA.
Violation Notes:	Returned to compliance on 04/25/2017. OBSERVATION: The annotated site map submitted to this department does not include directional orientation, new product placement, and employee meeting place in case on emergency. CORRECTIVE ACTION: Revise the annotated Site Map to include all required content and submit electronically in this department's e-Reporting Portal or in the California Environmental Reporting System. Notify the County (Mr. Steele) when this has been accomplished.
Violation Division:	Sacramento County Env Management Department
Violation Program:	HMRRP
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-27-2017
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	No violations observed at time of inspection.
Eval Division:	Sacramento County Env Management Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	03-27-2017
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	No violations observed at time of inspection.
Eval Division:	Sacramento County Env Management Department
Eval Program:	APSA
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	02-21-2014
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	NO VIOLATIONS observed at this time.
Eval Division:	Sacramento County Env Management Department
Eval Program:	APSA
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	02-21-2014

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	NO VIOLATIONS observed at this time.
Eval Division:	Sacramento County Env Management Department
Eval Program:	HW
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	02-21-2014
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Sacramento County Env Management Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-27-2017
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Sacramento County Env Management Department
Eval Program:	HW
Eval Source:	CERS

Enforcement Action:

Site ID:	139766
Site Name:	OILSTOP
Site Address:	8101 MADISON AVE
Site City:	FAIR OAKS
Site Zip:	95628
Enf Action Date:	02-21-2014
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	Sacramento County Env Management Department
Enf Action Program:	HMRRP
Enf Action Source:	CERS

Coordinates:

Site ID:	139766
Facility Name:	OILSTOP
Env Int Type Code:	HWG
Program ID:	10224526
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.
Latitude:	38.664420
Longitude:	-121.261720

Affiliation:

Affiliation Type Desc:	Document Preparer
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Operator
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(530) 400-2613

Affiliation Type Desc:	Parent Corporation
Entity Name:	OilStop
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95618
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Thomas S. Lyon
Entity Title:	Owner
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Legal Owner
Entity Name:	TTL Automotive Enterprises, Inc.
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95618
Affiliation Phone:	(530) 400-2613

Affiliation Type Desc:	CUPA District
Entity Name:	Sacramento County Environmental Management Departm
Entity Title:	Not reported

FORMER UNOCAL STATION #5134 (Continued) **S102430378**

Affiliation Address:	10590 Armstrong Avenue, Suite A
Affiliation City:	Sacramento
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95655
Affiliation Phone:	(916) 875-8550

Affiliation Type Desc:	Environmental Contact
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95618
Affiliation Phone:	(530) 400-2613

Affiliation Type Desc:	Property Owner
Entity Name:	Thomas S. Lyon
Entity Title:	Not reported
Affiliation Address:	1113 Los Robles Street
Affiliation City:	Davis
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95618
Affiliation Phone:	(530) 400-2613

Site ID:	249588
CERS ID:	T0606700736
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	VERA FISCHER - CENTRAL VALLEY RWQCB (REGION 5S)
Entity Title:	Not reported
Affiliation Address:	11020 SUN CENTER DRIVE #200
Affiliation City:	RANCHO CORDOVA
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	CHARLEY LANGER - SACRAMENTO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	10590 ARMSTRONG AVENUE, SUITE A
Affiliation City:	MATHER
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	9168758474

5
NNW
1/4-1/2
0.485 mi.
2563 ft.

UNOCAL #7256
8000 GREENBACK LN
CITRUS HEIGHTS, CA 95610

LUST
Sacramento Co. CS
HIST CORTESE
Sacramento Co. ML
CERS

S101332030
N/A

Relative:
Lower

Actual:
191 ft.

LUST:

Lead Agency:	SACRAMENTO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700203
Global Id:	T0606700203
Latitude:	38.678159
Longitude:	-121.265964
Status:	Completed - Case Closed
Status Date:	07/10/1997
Case Worker:	Not reported
RB Case Number:	340262
Local Agency:	Not reported
File Location:	Not reported
Local Case Number:	B338
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0606700203
Contact Type:	Regional Board Caseworker
Contact Name:	VERA FISCHER
Organization Name:	CENTRAL VALLEY RWQCB (REGION 5S)
Address:	11020 SUN CENTER DRIVE #200
City:	RANCHO CORDOVA
Email:	vera.fischer@waterboards.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0606700203
Action Type:	Other
Date:	05/19/1988
Action:	Leak Reported
Global Id:	T0606700203
Action Type:	Other
Date:	05/16/1988
Action:	Leak Discovery

LUST:

Global Id:	T0606700203
Status:	Completed - Case Closed
Status Date:	07/10/1997
Global Id:	T0606700203
Status:	Open - Case Begin Date
Status Date:	05/16/1988
Global Id:	T0606700203
Status:	Open - Remediation
Status Date:	10/24/1991
Global Id:	T0606700203

UNOCAL #7256 (Continued) **S101332030**

Status: Open - Site Assessment
Status Date: 05/16/1988

Global Id: T0606700203
Status: Open - Site Assessment
Status Date: 06/03/1988

Global Id: T0606700203
Status: Open - Site Assessment
Status Date: 09/06/1988

LUST REG 5:
Region: 5
Status: Case Closed
Case Number: 340262
Case Type: Drinking Water Aquifer affected
Substance: GASOLINE
Staff Initials: VJF
Lead Agency: Local
Program: LUST
MTBE Code: 2

Sacramento Co. CS:
State Site Number: B338
Lead Staff: Benedict,A.
Lead Agency: HM
Remedial Action Taken: YE, S
Substance: Automotive(motor gasoline and additives)
Date Reported: 05/18/1988
Facility Id: RO0000601
Case Type: Other ground water affected
Case Closed: Y
Date Closed: 06/24/1997
Case Type: Other Groundwater affected (uses other than drinking water)
Substance: Automotive(motor gasoline and additives)

HIST CORTESE:
Region: CORTESE
Facility County Code: 34
Reg By: LTNKA
Reg Id: 340262

Sacramento Co. ML:
Facility Id: D0131286
Facility Status: Inactive. Included on a listing no longer updated.
FD: D
Billing Codes BP: Out of Business
Billing Codes UST: No Tanks
WG Bill Code: Oil Changed by Outside Company-No Fee
Target Property Bill Cod: 51
Food Bill Code: 51
CUPA Permit Date: Not reported
HAZMAT Permit Date: Not reported
HAZMAT Inspection Date: 04/12/1989

UNOCAL #7256 (Continued) **S101332030**

Hazmat Date BP Received:	Not reported
UST Permit Dt:	10/12/1988
UST Inspection Date:	04/12/1989
UST Tank Test Date:	Not reported
Number of Tanks:	0
UST Tank Test Date:	Not reported
SIC Code:	5541
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported

CERS TANKS:

Site ID:	222528
CERS ID:	T0606700203
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	VERA FISCHER - CENTRAL VALLEY RWQCB (REGION 5S)
Entity Title:	Not reported
Affiliation Address:	11020 SUN CENTER DRIVE #200
Affiliation City:	RANCHO CORDOVA
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

6
North
1/2-1
0.551 mi.
2910 ft.

GREENBACK SQUARE CLEANERS
8033 GREENBACK LN
CITRUS HEIGHTS, CA 95610

ENVIROSTOR DRYCLEANERS **S101481842** **N/A**

Relative:
Lower

Actual:
173 ft.

ENVIROSTOR:

Facility ID:	34720075
Status:	Refer: Other Agency
Status Date:	11/16/1994
Site Code:	Not reported
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Sacramento
Assembly:	08
Senate:	04
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	38.67927
Longitude:	-121.2650
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED

GREENBACK SQUARE CLEANERS (Continued) **S101481842**

Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 34720075
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

DRYCLEANERS:
EPA Id: CAL000178975
NAICS Code: 333312
NAICS Description: Commercial Laundry, Drycleaning, and Pressing Machine Manufacturing
SIC Code: 3582
SIC Description: Commercial Laundry, Drycleaning and Pressing Machines
Create Date: 02/20/1997
Facility Active: No
Inactive Date: 06/30/2010
Facility Addr2: Not reported
Owner Name: SUN HEE MYOUNG
Owner Address: 8033 GREENBACK LN
Owner Address 2: Not reported
Owner Telephone: 9167230266
Contact Name: SUN HEE MYOUNG
Contact Address: 8033 GREENBACK LN
Contact Address 2: Not reported
Contact Telephone: 9167230266
Mailing Name: Not reported
Mailing Address 1: 8033 GREENBACK LN
Mailing Address 2: Not reported
Mailing City: CITRUS HEIGHTS
Mailing State: CA
Mailing Zip: 956106909
Owner Fax: Not reported
Region Code: 1

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
FAIR OAKS	S121637760	FAIR OAKS BLVD SAVEREIN DR	FAIR OAKS BLVD SAVEREIN DR	95628	CIWQS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 18

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 18

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 18

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/06/2019
Date Data Arrived at EDR: 02/15/2019
Date Made Active in Reports: 03/15/2019
Number of Days to Update: 28

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 02/06/2019
Date Data Arrived at EDR: 02/15/2019
Date Made Active in Reports: 03/15/2019
Number of Days to Update: 28

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 10/17/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 12/07/2018
Number of Days to Update: 43

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/07/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/31/2019
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/31/2019
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 02/04/2019
Date Data Arrived at EDR: 02/08/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 28

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 01/28/2019
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 01/28/2019
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/11/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 21

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/11/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/03/2019
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/11/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 01/28/2019
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/20/2018
Date Data Arrived at EDR: 12/21/2018
Date Made Active in Reports: 02/28/2019
Number of Days to Update: 69

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/17/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/19/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 02/09/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/27/2019
Number of Days to Update: 43

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/13/2019
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 02/01/2019
Next Scheduled EDR Contact: 05/13/2019
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 01/28/2019
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/04/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/11/2018
Number of Days to Update: 29

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 02/28/2019
Date Data Arrived at EDR: 03/01/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 32

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 03/14/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 03/04/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 27

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 02/08/2019
Date Data Arrived at EDR: 02/08/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 41

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 10/24/2018
Date Data Arrived at EDR: 01/24/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 40

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)
Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)
Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 04/03/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 01/31/2019
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/22/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/20/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 18

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/14/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2019
Date Data Arrived at EDR: 02/14/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 03/14/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/14/2018
Date Data Arrived at EDR: 10/11/2018
Date Made Active in Reports: 12/07/2018
Number of Days to Update: 57

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/02/2019
Date Data Arrived at EDR: 01/03/2019
Date Made Active in Reports: 03/15/2019
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/02/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 51

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 02/11/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 38

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/22/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/27/2018
Date Data Arrived at EDR: 02/27/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 33

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/01/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/01/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/21/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/15/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 03/15/2019
Number of Days to Update: 10

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 74

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 03/01/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 03/03/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 02/21/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 39

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 12/20/2018
Date Data Arrived at EDR: 12/21/2018
Date Made Active in Reports: 02/28/2019
Number of Days to Update: 69

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 01/23/2019
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 34

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 02/26/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA Facility Listing
Cupa facilities

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 7

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 02/27/2019
Date Data Arrived at EDR: 02/28/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 32

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 47

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Annually

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 27

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 03/22/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/22/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 11/02/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 01/10/2019
Date Data Arrived at EDR: 01/23/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 41

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/15/2019
Date Data Arrived at EDR: 02/19/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 14

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/11/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Annually

ICE: ICE
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 02/20/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 13

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/20/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 02/20/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 13

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/20/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/07/2019
Date Data Arrived at EDR: 01/08/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 56

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/08/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 02/20/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 28

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 02/11/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 23

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 03/04/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/05/2019
Number of Days to Update: 31

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/19/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/19/2018
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)

Military privatized sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)

Projects sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/18/2019
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 03/05/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 28

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 01/07/2019
Date Data Arrived at EDR: 01/08/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 59

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 01/07/2019
Date Data Arrived at EDR: 01/08/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 58

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 01/24/2019
Date Data Arrived at EDR: 01/25/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 39

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 02/27/2019
Date Data Arrived at EDR: 02/28/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 32

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/14/2019
Date Data Arrived at EDR: 02/19/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 17

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 01/16/2019
Date Data Arrived at EDR: 02/05/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 28

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 02/27/2019
Date Data Arrived at EDR: 02/28/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 32

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 10/18/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 27

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 03/29/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 01/18/2019
Date Data Arrived at EDR: 01/23/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 41

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 01/28/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/14/2019
Date Data Arrived at EDR: 02/19/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 14

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 02/08/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/12/2019
Number of Days to Update: 28

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/17/2019
Date Data Arrived at EDR: 01/18/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 46

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 12/19/2018
Date Data Arrived at EDR: 01/10/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 56

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/14/2019
Date Data Arrived at EDR: 01/15/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 51

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/15/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/15/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 51

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/15/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/30/2019
Date Data Arrived at EDR: 02/01/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 34

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 02/01/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Semi-Annually

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Annually

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/20/2019
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 13

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 03/29/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 08/31/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 19

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/21/2019
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 34

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 02/05/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 26

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 04/01/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 02/21/2019
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 14

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 01/25/2019
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 35

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 01/02/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 26

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 01/02/2019
Date Data Arrived at EDR: 02/08/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 26

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 01/02/2019
Date Data Arrived at EDR: 02/05/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 31

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 01/14/2019
Date Data Arrived at EDR: 01/18/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 46

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/29/2019
Date Data Arrived at EDR: 01/31/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 34

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/29/2019
Date Data Arrived at EDR: 01/31/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 36

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 01/04/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 60

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/02/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 67

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/02/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 11/15/2018
Date Data Arrived at EDR: 11/16/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 27

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 02/27/2019
Date Data Arrived at EDR: 02/28/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 33

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/19/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 03/04/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 28

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 03/06/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

SAN DIEGO CO. SAM: Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 38

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 02/13/2019
Date Data Arrived at EDR: 02/15/2019
Date Made Active in Reports: 03/14/2019
Number of Days to Update: 27

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/23/2019
Number of Days to Update: 36

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 02/13/2019
Date Data Arrived at EDR: 02/19/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 15

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Annually

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 01/30/2019
Date Data Arrived at EDR: 02/01/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 34

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/05/2019
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 04/03/2019
Number of Days to Update: 27

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 12/21/2018
Date Data Arrived at EDR: 12/27/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 19

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/08/2019
Date Data Arrived at EDR: 01/10/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 55

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 12/13/2018
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 02/28/2019
Date Data Arrived at EDR: 03/01/2019
Date Made Active in Reports: 04/03/2019
Number of Days to Update: 33

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 28

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 01/18/2019
Date Data Arrived at EDR: 01/23/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 42

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 12/27/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 19

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 01/24/2019
Date Made Active in Reports: 02/28/2019
Number of Days to Update: 35

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/29/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Annually

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/07/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 01/24/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 42

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/26/2019
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/03/2019
Number of Days to Update: 21

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 01/03/2019
Date Made Active in Reports: 01/16/2019
Number of Days to Update: 13

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/29/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 02/08/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 22

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 02/11/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/04/2019
Number of Days to Update: 20

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 19

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/30/2019
Date Made Active in Reports: 02/14/2019
Number of Days to Update: 15

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/30/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/27/2018
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/19/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/11/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

12057 FAIR OAKS BOULEVARD
12057 FAIR OAKS BOULEVARD
CITRUS HEIGHTS, CA 95610

TARGET PROPERTY COORDINATES

Latitude (North):	38.671042 - 38˚ 40' 15.75''
Longitude (West):	121.263606 - 121˚ 15' 48.98''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	651060.1
UTM Y (Meters):	4281496.0
Elevation:	202 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5619692 CITRUS HEIGHTS, CA
Version Date:	2012
East Map:	5629054 FOLSOM, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

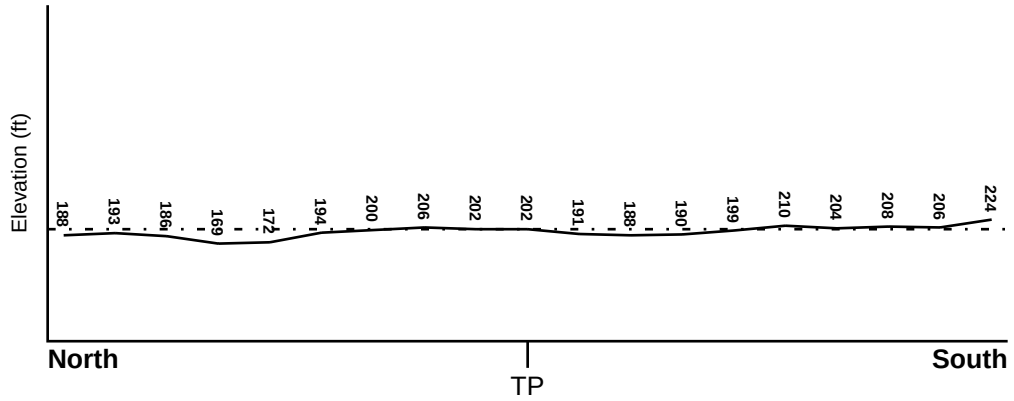
TOPOGRAPHIC INFORMATION

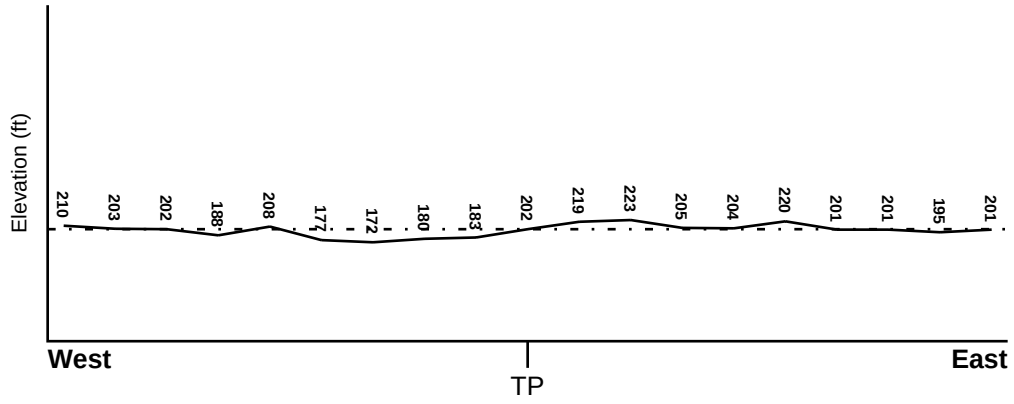
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 202 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06067C0092H	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06067C0091H	FEMA FIRM Flood data
06067C0111H	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
CITRUS HEIGHTS	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

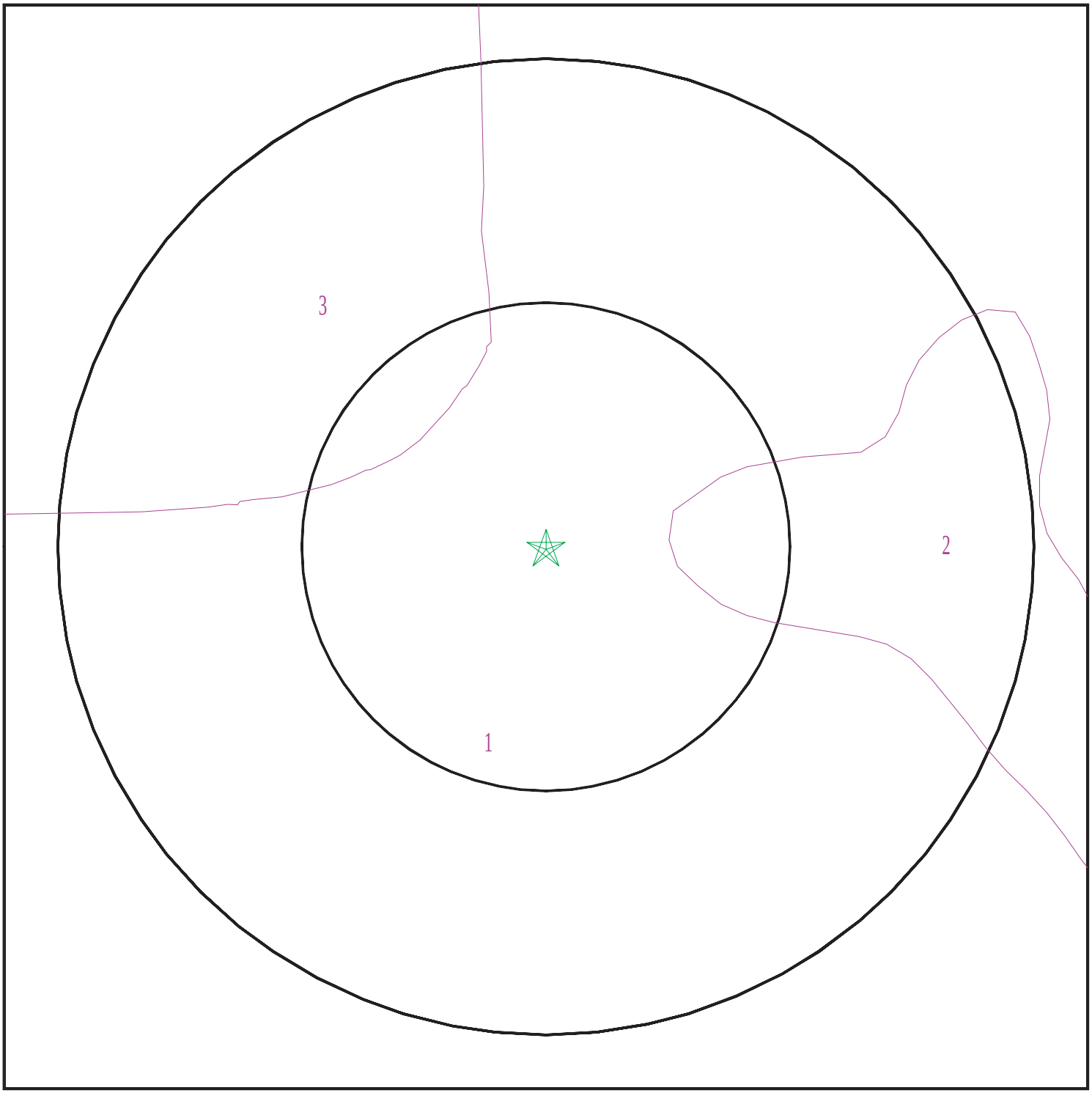
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 5614353.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	12057 Fair Oaks Boulevard	CLIENT:	Partner Engineering and Science, Inc.
ADDRESS:	12057 Fair Oaks Boulevard Citrus Heights CA 95610	CONTACT:	Aimee Tamayo
		INQUIRY #:	5614353.2s
LAT/LONG:	38.671042 / 121.263606	DATE:	April 08, 2019 12:49 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: URBAN LAND

Soil Surface Texture: variable

Hydrologic Group: Not reported

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	variable	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 2

Soil Component Name: XERARENTS

Soil Surface Texture: variable

Hydrologic Group: Not reported

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	59 inches	variable	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 3

Soil Component Name: URBAN LAND

Soil Surface Texture: variable

Hydrologic Group: Not reported

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	variable	Not reported	Not reported	Max: Min:	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
2	USGS40000189741	1/2 - 1 Mile South
A3	USGS40000189776	1/2 - 1 Mile WSW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

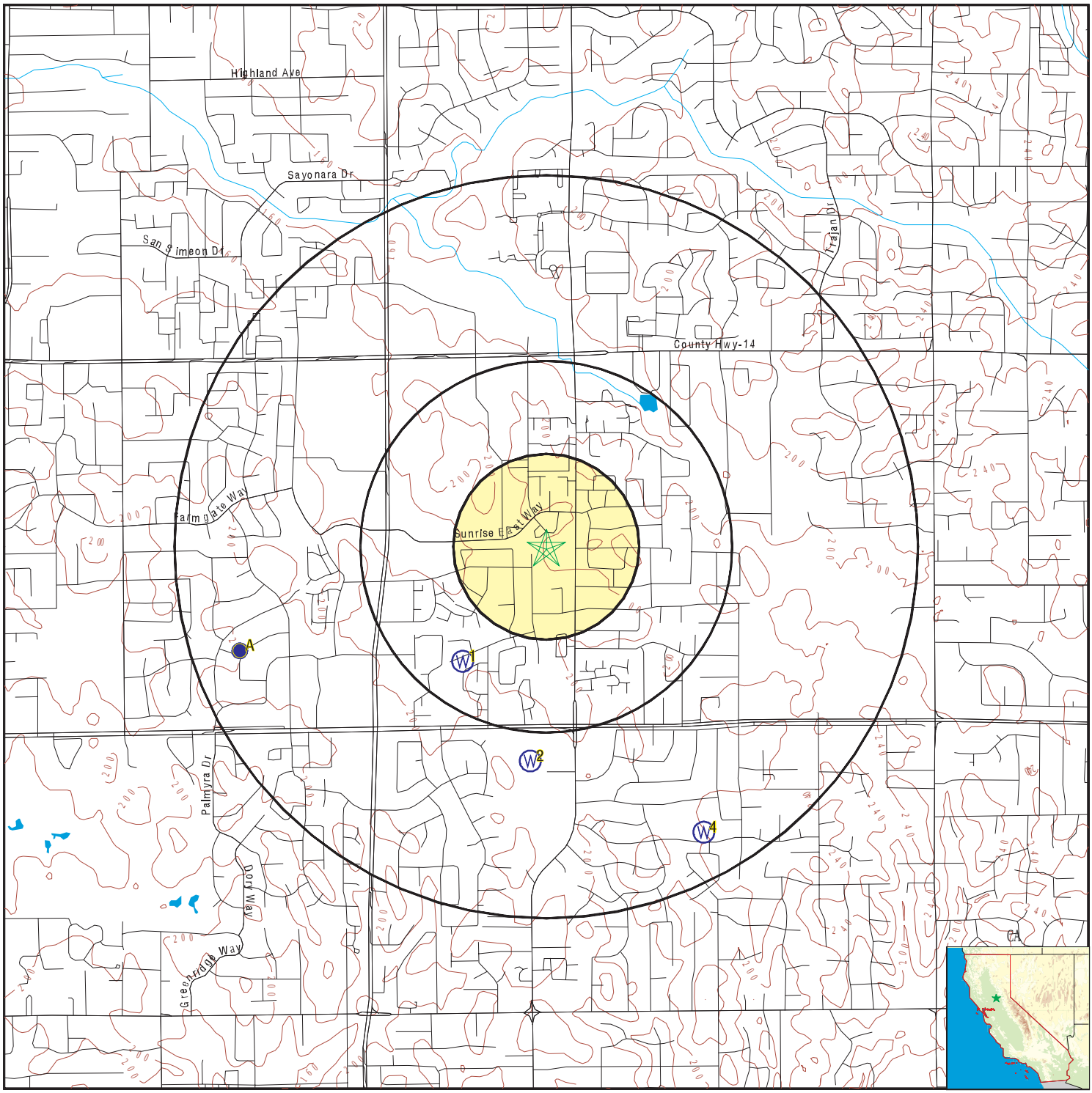
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	9084	1/4 - 1/2 Mile SW
4	18557	1/2 - 1 Mile SSE
A5	9083	1/2 - 1 Mile WSW

PHYSICAL SETTING SOURCE MAP - 5614353.2s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
HD Closest Hydrogeological Data
Oil, gas or related wells

SITE NAME:	12057 Fair Oaks Boulevard	CLIENT:	Partner Engineering and Science, Inc.
ADDRESS:	12057 Fair Oaks Boulevard Citrus Heights CA 95610	CONTACT:	Aimee Tamayo
		INQUIRY #:	5614353.2s
LAT/LONG:	38.671042 / 121.263606	DATE:	April 08, 2019 12:49 pm

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Map ID Direction Distance Elevation	Database	EDR ID Number
1 **SW** **1/4 - 1/2 Mile** **Lower**	**CA WELLS**	**9084**

Seq:	9084	Prim sta c:	09N/06E-01J01 M
Frds no:	3410009009	County:	34
District:	09	User id:	TEN
System no:	3410009	Water type:	G
Source nam:	WELL 08 - ME MILLAN(TEMPLE PK)-DESTROYD		
Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY	Latitude:	384000.0
Longitude:	1211600.0	Precision:	8
Status:	DS	Comment 1:	Not Reported
Comment 2:	Not Reported	Comment 3:	Not Reported
Comment 4:	Not Reported	Comment 5:	Not Reported
Comment 6:	Not Reported	Comment 7:	Not Reported
System no:	3410009	System nam:	Fair Oaks Water District
Hqname:	Not Reported	Address:	10317 Fair Oaks Blvd.
City:	Fair Oaks	State:	CA
Zip:	95628	Zip ext:	Not Reported
Pop serv:	38119	Connection:	12899
Area serve:	Not Reported		

---

2 **South** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000189741**	

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N006E01J001M	Type:	Well
Description:	Not Reported	HUC:	18020111
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19560601	Well Depth:	275
Well Depth Units:	ft	Well Hole Depth:	280
Well Hole Depth Units:	ft		

A3 **WSW** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000189776**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N006E01D001M	Type:	Well
Description:	Not Reported	HUC:	18020111
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19590101	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	500
Well Hole Depth Units:	ft		

Map ID Direction Distance Elevation	Database	EDR ID Number
4 **SSE** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**18557**

Seq:	18557	Prim sta c:	3410009-010
Frds no:	3410009010	County:	34
District:	09	User id:	TEN
System no:	3410009	Water type:	G
Source nam:	WELL 09 - NORTHRIDGE SCHOOL WELL	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	383936.0	Longitude:	1211517.0
Precision:	3	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3410009	System nam:	Fair Oaks Water District
Hqname:	Not Reported	Address:	10317 Fair Oaks Blvd.
City:	Fair Oaks	State:	CA
Zip:	95628	Zip ext:	Not Reported
Pop serv:	38119	Connection:	12899
Area serve:	Not Reported		

Sample date:	03-AUG-17	Finding:	0.156
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		

Sample date:	03-AUG-17	Finding:	1.06
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		

Sample date:	04-MAY-17	Finding:	220.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		

Sample date:	04-MAY-17	Finding:	1.06
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		

Sample date:	04-MAY-17	Finding:	0.156
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		

Sample date:	04-MAY-17	Finding:	0.6
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	29-DEC-14	Finding:	2.5
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dlr:	1.		

Sample date:	05-MAY-14	Finding:	410.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		

Sample date:	05-MAY-14	Finding:	2.4
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dlr:	1.		

Sample date:	05-MAY-14	Finding:	22.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	05-DEC-13	Finding:	2.7
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dlr:	1.		
Sample date:	05-DEC-13	Finding:	2.4
Chemical:	CHLOROFORM (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	05-DEC-13	Finding:	2.4
Chemical:	TOTAL TRIHALOMETHANES	Report units:	UG/L
Dlr:	0.		
Sample date:	07-MAY-13	Finding:	2.2
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	07-FEB-13	Finding:	2.3
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dlr:	1.		
Sample date:	14-JUN-12	Finding:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	150.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	4.6
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	4.1
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	13.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	6.5
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	17.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	70.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	100.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	83.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L

Dlr:	0.		
Sample date:	14-JUN-12	Finding:	8.
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	210.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	14-JUN-12	Finding:	15.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	10-MAY-12	Finding:	180.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	10-MAY-12	Finding:	2.2
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	10-MAY-12	Finding:	0.11
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	10-MAY-12	Finding:	16.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	10-MAY-12	Finding:	4.8
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	10-MAY-12	Finding:	8.
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	10-MAY-12	Finding:	210.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	10-MAY-12	Finding:	410.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		

A5
WSW
1/2 - 1 Mile
Lower

CA WELLS 9083

Seq:	9083	Prim sta c:	09N/06E-01D01 M
Frds no:	3410006006	County:	34
District:	09	User id:	TEN
System no:	3410006	Water type:	G
Source nam:	WELL 06 - NORTHRIDGE - INACTIVE	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	384000.0	Longitude:	1211640.0
Precision:	3	Status:	IR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported

Comment 7:	Not Reported		
System no:	3410006	System nam:	Citrus Heights Irrigation Dist
Hqname:	Not Reported	Address:	P.O. Box 286
City:	Citrus Heights	State:	CA
Zip:	95611	Zip ext:	Not Reported
Pop serv:	68189	Connection:	19361
Area serve:	CITRUS HEIGHTS		
Sample date:	25-OCT-16	Finding:	7.3
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
95610	15	1

Federal EPA Radon Zone for SACRAMENTO County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 95610

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.300 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX D: QUALIFICATIONS/INSURANCE

Mark Lerner
Staff Assessor

Education

B.S., Environmental Science, University of the Pacific, Stockton, CA

Training

HAZWOPER 40hr

Highlights

Bachelors of Environmental Science
Phase 1 Environmental Site Assessments (ESAs)
Transaction Screen Assessments (TSA)

Experience Summary

Mr. Lerner is currently a Staff Assessor for Partner Engineering and Science, Inc (Partner). Duties include completing all aspects of Phase I Environmental Site Assessments; conducting historical research of project sites, regulatory research, site reconnaissance and interviews, and report writing. Experience writing technical reports, interpersonal communication and attention to detail allow Mr. Lerner to adequately perform his duties.

Mr. Lerner has completed college courses in ecology, water chemistry, field data collection and analysis methods, as well as chemistry and calculus. Mr. Lerner will use this experience to accurately conduct historical research, field reconnaissance, site interviews and report writing in a supporting role. Additional experience includes interning for the small scale (<500 Acre) organic farm, Ayrshire Farms, captaining the Rugby club at University of the Pacific, and holding the position of Standards chair (disciplinary lead) for the social Greek organization Theta Chi.

Project Experience

GIS Map and Data Analysis of the Lower Calaveras River and *Eichhornia crassipes* Coverage

Mr. Lerner conducted a Geographic Information Systems project that looked at a 1.1-mile length of the Lower Calaveras River in Stockton, California. Through the digitization of more than 40 photos, Mr. Lerner created several maps and a presentation that outlined the scope of the invasive water hyacinth coverage in the river tributary. Results indicated that coverage was severe, and was hypothesized to have been due to the recent length of drought California had experienced. Anecdotally, Mr. Lerner viewed the same area after the water year of 2017 and noted that perhaps due to the substantial rainfall and runoff, much of the water hyacinth had been flushed out of the Lower Calaveras.

Ecology Bird Diversity Report

Mr. Lerner completed a report documenting avian diversity throughout the 2017/2018 school year at the University of the Pacific Stockton campus. The report compiled data from 16 walking tally surveys conducted between August 2017 and April 2018 completed under the supervision of Ryan Hill, PHD. Rank abundance, Species Richness, and Species accumulation curves were created to analyze the community seen at the University of the Pacific. Significant results indicated that Species Richness as well as Rank Abundance of the avian community changes throughout the school year.

Environmental Science Capstone
Mr. Lerner completed a 9-page summary report on the global and regional impacts of reactive nitrogen. Covered topics include reasons to apply reactive N as fertilizer, sources of anthropogenic N, the issues involved with elevated nitrogen, and the most efficient ways to reduce wasted nitrogen at the regional and international scale. In the report Mr. Lerner referenced six scientific articles for supporting information and completed a 15-minute presentation in front of peers and Professors with a Q and A session that followed.

Public Awareness Poster on the Dangers of Mercury (Hg)
Mr. Lerner compiled all relevant information regarding the chronic toxicity of mercury and the pathways through which we are exposed in the environment. The final product was a 4x3 foot poster board meant for public display with all the vital and interesting information surrounding mercury contamination in the environment as well as human health impacts.

Managing College Sports Club
Mr. Lerner oversaw the regrowth of the Pacific Rugby team from seven members to twenty-one during the 17/18 school year. Through the use of school resources and events Mr. Lerner contacted prospective players, recorded personal information for future correspondence, and created a vision for the team that new players could get behind. Interpersonal skills, a healthy team atmosphere, and open communication between coaching staff, players and the campus community allowed Mr. Lerner to successfully manage the club and increase leadership and relational skills.

Affiliations

Sigma Gamma Epsilon – National Honor Society for the Earth Sciences

Contact

mlerner@partneresi.com

Michael Eng, M.S.
Principal / Environmental Professional

Education

M.S. in Environmental Science – Loyola Marymount University
B.S. in Biological Science – Loyola Marymount University

Training

Inspection Training Associates (ITA) Commercial Buildings Training
Advanced Institute of Pest Technology (AIPT) Branch III Technical Training – Pest Identification, Safety, and Construction Techniques
MBA – Fannie Mae and Freddie Mac Multifamily Property Inspection

Highlights

14+ years in the environmental industry
12 years conducting environmental site assessments
10 years conducting building assessments

Experience Summary

Mr. Eng has more than twelve years of experience in the engineering and environmental consulting industry. He has a broad range of experience in various environmental disciplines that includes: environmental due diligence assessments, natural resource management, wetlands delineation, and wastewater treatment.

Mr. Eng has project experience in Phase I Environmental Site Assessments (ESAs), Environmental Transaction Screens (ETS), radon screening, Property Condition / Needs Assessments (PCA/N), property condition evaluations, and seismic risk evaluations. Mr. Eng is familiar with all aspects of due diligence property assessments and the needs and requirements of a varied number of reporting standards, including: ASTM E2018, ASTM E1527-05 and -13, EPA's All Appropriate Inquiry (AAI), Fannie Mae DUS, Freddie Mac, HUD, and customized client formats or scope.

Mr. Eng has experience as a senior project manager in the due diligence environmental and building sciences/construction field and is currently a principal consultant within the same field. His background in the environmental sciences and property assessments allows him to provide complete and thorough assessments and evaluations to serve a client's specific needs. In addition to providing consulting services, Mr. Eng has assisted in senior report reviewing and employee training in both the due diligence environmental and building sciences departments.

Project Experience

Property Types

Mr. Eng has conducted several hundred Due Diligence Environmental Site Assessments (ESAs) and Property Condition Assessments for a variety of different property types including: multi-family residential dwellings, hotels/motels/resorts, commercial office buildings, shopping centers, multi-tenant commercial complexes, industrial warehouses, manufacturing facilities, dry cleaning plants, gasoline service stations, fuel distribution facilities, automotive repair and body shop, medical facilities, and food processing facilities.

The scope of his involvement on these projects included:

- Advising clients on existing environmental conditions associated to a site.
- Performing lead in water sampling for various multi-family residential dwellings.
- Evaluating the condition of all major building systems.
- Formulating cost analysis for building owners and perspective purchasers.

Select Client List

Mr. Eng has technical experience working for the following financial institutions:

- Business Loan Xpress
- Bank of the West
- California Bank and Trust
- Citibank North America
- Citigroup Global Markets
- Comerica Bank
- Commerce West Bank
- East West Bank
- George Smith Partners
- Morgan Stanley Mortgage Capital, Inc.
- Prudential Mortgage Capital Company
- United Commercial Bank
- Washington Mutual Bank
- Wells Fargo Bank

Affiliations

Member, Mortgage Bankers Association

Contact

meng@partneresi.com

CHAPTER 106.32 - AFFORDABLE HOUSING INCENTIVES

Sections:

106.32.010 - Purpose
106.32.020 - Eligibility for Bonus, Incentives, or Concessions
106.32.030 - Allowed Density Bonuses
106.32.040 - Allowed Incentives or Concessions
106.32.050 - Parking Requirements in Density Bonus Projects
106.32.060 - Bonus and Incentives for Housing with Child Care Facilities
106.32.070 - Continued Availability
106.32.080 - Location and Type of Designated Units
106.32.090 - Processing of Bonus Requests
106.32.100 - Density Bonus Agreement
106.32.110 - Control of Resale
106.32.120 - Judicial Relief, Waiver of Standards

106.32.010 - Purpose

As required by Government Code Section 65915, this Chapter offers density bonuses, and incentives or concessions for the development of housing that is affordable to the types of households and qualifying residents identified in Section 106.32.020 (Eligibility for Bonus, Incentives, or Concessions). This Chapter is intended to implement the requirements of Government Code Section 65915, et seq., and the Housing Element of the General Plan.

106.32.020 - Eligibility for Bonus, Incentives, or Concessions

In order to be eligible for a density bonus and other incentives or concessions as provided by this Chapter, a proposed housing development shall comply with the following requirements, and satisfy all other applicable provisions of this Zoning Code, except as provided by Section 106.32.040 (Allowed Incentives or Concessions).

A. Resident requirements. A housing development proposed to qualify for a density bonus shall be designed and constructed so that it includes at least any one of the following:

1. 10 percent of the total number of proposed units are for lower income households, as defined in Health and Safety Code Section 50079.5;

2. Five percent of the total number of proposed units are for very low income households, as defined in Health and Safety Code Section 50105;

3. The project is a senior citizen housing development as defined in Civil Code Sections 51.3 and 51.12, or is a mobile home park that limits residency based on age requirements for housing older persons in compliance with Civil Code Sections 798.76 or 799.5; or

4. 10 percent of the total dwelling units in a common interest development as defined in Civil Code Section 1351 are for persons and families of moderate income, as defined in Health and Safety Code Section 50093, provided that all units in the development are offered to the public for purchase.

5. 10 percent of the total units of a housing development are for transitional foster youth, as defined in Section 66025.9 of the Education Code, disabled veterans, as defined in Section 18541 of the Government Code, or homeless persons, as defined in the federal McKinney-Vento Homeless Assistance Act (42 U.S.C. Sect. 11301 et seq.) are for very low income households, as defined in Health and Safety Code Section 50105.

6. 20 percent of the total units for low income college students in housing dedicated for full-time students at accredited colleges meeting the requirements of Government Code 65915.

B. Applicant selection of basis for bonus. For purposes of calculating the amount of the density bonus in compliance with Section 106.32.030 (Allowed Density Bonuses), below, the applicant who requests a density bonus shall elect whether the bonus shall be awarded on the basis of Subsections A.1., 2., 3., 4., 5., or 6., above.

C. Bonus units shall not qualify a project. A density bonus granted in compliance with Section 106.32.030 (Allowed Density Bonuses), below, including "total units," "total dwelling units," or "total rental beds" shall not be included when determining the number of housing units that is equal to the percentages required by Subsection A.

D. Minimum project size to qualify for density bonus. The density bonus provided by this Chapter shall be available only to a housing development of five or more dwelling units.

E. Condominium conversion projects. A condominium conversion project for which a density bonus is requested shall comply with the eligibility and other requirements in Government Code Section 65915.5.

106.32.030 - Allowed Density Bonuses

The amount of a density bonus allowed in a housing development shall be determined by the Council in compliance with this Section. For the purposes of this Chapter, "density bonus" means a density increase over the otherwise maximum allowable residential density under the applicable zoning district and designation of the Land Use Element of the General Plan as of the date of application by the applicant to the City.

A. Density bonus. A housing project that complies with the eligibility requirements in Subparagraphs 106.32.020.A.1, 2., 3., or 4., shall be entitled to density bonuses as follows, unless a lesser percentage is proposed by the applicant.

1. Bonus for units for lower income households. A housing development that is eligible for a bonus in compliance with the criteria in Section 106.32.020.A.1 (10 percent of units for lower income households) shall be entitled to a density bonus calculated as follows.

Percentage of Low-Income Units Proposed	Percentage of Density Bonus
10	20
11	21.5
12	23
13	24.5
14	26
15	27.5
17	30.5
18	32
19	33.5
20	35

2. **Bonus for units for very low income households.** A housing development that is eligible for a bonus in compliance with the criteria in Section 106.32.020.A.2 (five percent of units for very low income households) shall be entitled to a density bonus calculated as follows.

Percentage of Very Low-Income Units Proposed	Percentage of Density Bonus
5	20
6	22.5
7	25
8	27.5
9	30
10	32.5
11	35

3. **Bonus for senior citizen development.** A housing development that is eligible for a bonus in compliance with the criteria in Section 106.32.020.A.3 (senior citizen development or mobile home park) shall be entitled to a density bonus of 20 percent.

4. **Bonus for transitional foster youth, disabled veterans or homeless persons.** A housing development that is eligible for a bonus in compliance with the criteria in Section 106.32.020.A.5 shall be entitled to a density bonus of 20 percent.

5. **Bonus for student housing.** A housing development that is eligible for a bonus in compliance with the criteria in Section 106.32.020.A.6 shall be entitled to a density bonus of 35 percent.

6. **Bonus for moderate income units in common interest development.** A housing development that is eligible for a bonus in compliance with the criteria in Section 106.32.020.A.4 (10 percent of units in a common interest development for persons and families of moderate income) shall be entitled to a density bonus calculated as follows.

Percentage of Moderate-Income Units Proposed	Percentage of Density Bonus
10	5
11	6
12	7
13	8
14	9
15	10
16	11
17	12
18	13
19	14

20	15
21	16
22	17
23	18
24	19
25	20
26	21
27	22
28	23
29	24
30	25
31	26
32	27
33	28
34	29
35	30
36	31
37	32
38	33
39	34
40	35

7. **Density bonus for land donation.** When an applicant for a tentative map, parcel map, or other residential development approval donates land to the City in compliance with this Subsection, the applicant shall be entitled to a density bonus for the entire development, as follows; provided that nothing in this Subsection shall be construed to affect the authority of the City to require a developer to donate land as a condition of development.

   a. **Basic bonus.** The applicant shall be entitled to a 15 percent increase above the otherwise maximum allowable residential density under the applicable General Plan Land Use Element designation and zoning for the entire development, and an additional increase as follows.

Percentage of Very Low-Income Units Proposed	Percentage of Density Bonus
10	15
11	16
12	17
13	18
14	19
15	20

16	21
17	22
18	23
19	24
20	25
21	26
22	27
23	28
24	29
25	30
26	31
27	32
28	33
29	34
30	35

b. **Increased bonus.** The increase in the table above shall be in addition to any increase in density required by Subsections A.1 through A.5, up to a maximum combined mandated density increase of 35 percent if an applicant seeks both the increase required in compliance with this Subsection A.5, as well as the bonuses provided by Subsections A.1 through A.4.

c. **Eligibility for increased bonus.** An applicant shall be eligible for the increased density bonus provided by this Subsection if all of the following conditions are met.

(1) The applicant donates and transfers the land no later than the date of approval of the final subdivision map, parcel map, or residential development application.

(2) The developable acreage and zoning classification of the land being transferred are sufficient to permit construction of units affordable to very low income households in an amount not less than 10 percent of the number of residential units of the proposed development.

(3) The transferred land is at least one acre, or of sufficient size to permit development of at least 40 units, has the appropriate General Plan designation, is appropriately zoned for development as affordable housing, and is or will be served by adequate public facilities and infrastructure. The land shall have appropriate zoning and development standards to make the development of the affordable units feasible.

(4) No later than the date of approval of the final subdivision map, parcel map, or of the residential development, the transferred land shall have all of the permits and approvals, other than Building Permits, necessary for the development of the very low income housing units on the transferred land, except that the City may subject the proposed development to subsequent design review to the extent authorized by Government Code Section 65583.2(l) if the design is not reviewed by the City before the time of transfer.

(5) The transferred land and the affordable units shall be subject to a deed restriction ensuring continued affordability of the units consistent with Section 106.32.070 (Continued Availability), below, which shall be recorded on the property at the time of dedication.

(6) The land is transferred to the City or to a housing developer approved by the City. The City may require the applicant to identify and transfer the land to the approved housing developer.

(7) The transferred land shall be within the boundary of the proposed development or, if the City agrees, within one-quarter mile of the boundary of the proposed development.

(8) The proposed source of funding for the very low income units shall be identified not later than the date of approval of the final subdivision map, parcel map, or residential development application.

B. Greater or lesser bonuses. The City may choose to grant a density bonus greater than provided by this Section for a development that meets the requirements of this Section, or grant a proportionately lower density bonus than required by this Section for a development that does not comply with the requirements of this Section.

C. Density bonus calculations. The calculation of a density bonus in compliance with this Section that results in fractional units shall be rounded up to the next whole number, as required by State law. For the purpose of calculating a density bonus, the residential units do not have to be based upon individual subdivision maps or parcels.

D. Requirements for amendments or discretionary approval. The granting of a density bonus shall not be interpreted, in and of itself, to require a General Plan amendment, Zoning Map amendment, or other discretionary approval.

E. Location of bonus units. The developer may locate density bonus units in the housing project in other than the areas where the units for the lower income households are located.

106.32.040 - Allowed Incentives or Concessions

A. Applicant request and City approval. An applicant for a density bonus in compliance with this Chapter may submit to the City a proposal for the specific incentives or concessions listed in Subsection C. (Type of incentives), below, that the applicant requests in compliance with this Section, and may request a meeting with the Director. The applicant may file their request either prior to an application for City approval of the proposed project, or concurrently with the application for project approval. The Council shall grant an incentive or concession request that complies with this Section unless the Council makes either of the following findings in writing, based upon substantial evidence:

1. The incentive or concession is not required to provide for affordable housing costs, as defined in Health and Safety Code Section 50052.5, or for rents for the targeted units to be set as specified in Section 106.32.070.B. (Unit cost requirements); or

2. The incentive or concession would have a specific adverse impact, as defined in Government Code Section 65589.5(d)(2), upon public health and safety or the physical environment, or on any real property listed in the California Register of Historical Resources and for which there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact without rendering the development unaffordable to low and moderate income households.

3. The concession or incentive would be contrary to state or federal law.

B. Number of incentives. The applicant shall receive the following number of incentives or concessions.

1. **One incentive or concession.** One incentive or concession for a project that includes at least 10 percent of the total units for lower income households, at least five percent for very low income households, or at least 10 percent for persons and families of moderate income in a common interest development.

2. **Two incentives or concessions.** Two incentives or concessions for a project that includes at least 20 percent of the total units for lower income households, at least 10 percent for very low income households, or at least 20 percent for persons and families of moderate income in a common interest development.

3. **Three incentives or concessions.** Three incentives or concessions for a project that includes at least 30 percent of the total units for lower income households, at least 15 percent for very low income households, or at least 30 percent for persons and families of moderate income in a common interest development.

C. Type of incentives. For the purposes of this Chapter, concession or incentive means any of the following:

1. A reduction in the site development standards of this Zoning Code (e.g., site coverage limitations, setbacks, reduced parcel sizes, and/or parking requirements (see also Section 106.32.050 [Parking Requirements in Density Bonus Projects]), or architectural design requirements that exceed the minimum building standards approved by the California Building Standards Commission in compliance with Health and Safety Code Section 18901 et seq., that would otherwise be required, that results in identifiable, financially sufficient, and actual cost reductions;

2. Approval of mixed-use zoning not otherwise allowed by this Zoning Code in conjunction with the housing development, if nonresidential land uses will reduce the cost of the housing development, and the nonresidential land uses are compatible with the housing project and the existing or planned development in the area where the project will be located;

3. Other regulatory incentives proposed by the applicant or the City that will result in identifiable, financially sufficient, and actual cost reductions; and/or

4. In its sole and absolute discretion, a direct financial contribution granted by the Council, including writing-down land costs, subsidizing the cost of construction, or participating in the cost of infrastructure.

D. Effect of incentive or concession. The granting of a concession or incentive shall not be interpreted, in and of itself, to require a General Plan amendment, Zoning Map amendment, or other discretionary approval.

106.32.050 - Parking Requirements in Density Bonus Projects

A. Applicability. This Section applies to a development that meets the requirements of Section 106.32.020 (Eligibility for Bonus, Incentives, or Concessions), above, but only at the request of the applicant. An applicant may request additional parking incentives or concessions beyond those provided in this Section in compliance with Section 106.32.040 (Allowed Incentives or Concessions), above.

B. Number of parking spaces required.

1. At the request of the applicant, the City shall apply the following vehicular parking ratios for a project that complies with the requirements of Section 106.32.020 (Eligibility for Bonus, Incentives, or Concessions), above, inclusive of handicapped and guest parking, pursuant to Government Code Section 65915(p)(1):

   a. Zero to one bedrooms: One on-site parking space.

   b. Two to three bedrooms: Two on-site parking spaces.

   c. Four and more bedrooms: Two and one-half on-site parking spaces.

d. Lower parking ratios apply to specified projects as follows:

(1) 0.5 spaces per bedroom, inclusive of handicapped and guest parking, for projects with at least 11 percent very low income or 20 percent lower income units and are within one-half mile of an accessible major transit stop, as defined in subdivision (b) of Section 21155 of the Public Resources Code, and have unobstructed access to the major transit stop from the development.

(2) A rental project that is 100 percent affordable to lower income, as provided in Section 50052.5 of the Health and Safety Code, the following ratios apply:

(a) 0.5 spaces per unit, inclusive of handicapped and guest parking, if the project is within one-half mile of a major transit stop, as defined in subdivision (b) of Section 21155 of the Public Resources Code, and there is unobstructed access to the major transit stop from the development.

(b) 0.5 spaces per unit, inclusive of handicapped and guest parking, if the project is for-rent housing development for individual who are 62 years of age or older that complies with Sections 561.2 and 51.3 of the Civil Code. The development shall have either paratransit service or unobstructed access, within one-half mile, to fixed bus route service that operates at least eight times per day.

(c) 0.3 spaces per unit, if the development is a special needs housing development, as defined in Section 51312 of the Health and Safety Code and the development has either paratransit service or unobstructed access, within one-half mile, to fixed bus route service that operates at least eight times per day.

2. If the total number of parking spaces required for a development is other than a whole number, the number shall be rounded up to the next whole number.

C. Location of parking. For purposes of this Section, a development may provide on-site parking through tandem or uncovered parking, but not through on-street parking.

106.32.060 - Bonus and Incentives for Housing with Child Care Facilities

A housing development that complies with the resident and project size requirements of Subsections 106.32.020.A., and B., above, and also includes as part of that development a child care facility other than a large or small family day care home, that will be located on the site of, as part of, or adjacent to the development, shall be subject to the following additional bonus, incentives, and requirements.

A. Additional bonus and incentives. The City shall grant a housing development that includes a child care facility in compliance with this Section either of the following:

1. An additional density bonus that is an amount of floor area in square feet of residential space that is equal to or greater than the floor area of the child care facility; or

2. An additional incentive that contributes significantly to the economic feasibility of the construction of the child care facility.

B. Requirements to qualify for additional bonus and incentives.

1. The City shall require, as a condition of approving the housing development, that:

   a. The child care facility shall remain in operation for a period of time that is as long as or longer than the period of time during which the density bonus units are required to remain affordable in compliance with Section 106.32.070 (Continued Availability), below; and

   b. Of the children who attend the child care facility, the children of very low income households, lower income households, or families of moderate income shall equal a percentage that is equal to or greater than the percentage of dwelling units that are required for very low income households, lower income households, or families of moderate income in compliance with Subsection 106.32.020 A (Resident requirements), above.

2. The City shall not be required to provide a density bonus for a child care facility in compliance with this Section if it finds, based upon substantial evidence, that the community has adequate child care facilities.

106.32.070 - Continued Availability

The units that qualified the housing development for a density bonus and other incentives and concessions shall be continue to be available as affordable units in compliance with the following requirements, as required by Government Code Section 65915(c)). See also Section 106.32.110 (Control of Resale).

A. Duration of affordability. The applicant shall agree to, and the City shall ensure the continued availability of the units that qualified the housing development for a density bonus and other incentives and concessions, as follows.

1. **Low-, and very low-income units.** The continued affordability of all low- and very low income qualifying units shall be maintained for 55 years, or a longer time if required by the construction or mortgage financing assistance program, mortgage insurance program, or rental subsidy program.

2. **Moderate income units in common interest development.** The continued availability of moderate income units in a common interest development shall be maintained for a minimum of 10 years.

B. Unit cost requirements. The rents and owner-occupied costs charged for the housing units in the development that qualify the project for a density bonus and other incentives and concessions, shall not exceed the following amounts during the period of continued availability required by this Section:

1. **Lower income units.** Rents for the lower income density bonus units shall be set at an affordable rent as defined in Health and Safety Code Section 50053; and

2. **Owner-occupied units.** Owner-occupied units shall be available at an affordable housing cost as defined in Health and Safety Code Section 50052.5.

C. Occupancy and resale of moderate income common interest development units. An applicant shall agree to, and the City shall ensure that the initial occupant of moderate income units that are directly related to the receipt of the density bonus in a common interest development as defined in Civil Code Section 1351, are persons and families of moderate income, as defined in Health and Safety Code Section 50093, and that the units are offered at an affordable housing cost, as defined in Health and Safety Code Section 50052.5. The City shall enforce an equity sharing agreement unless it is in conflict with the requirements of another public funding source or law. The following requirements apply to the equity sharing agreement.

1. Upon resale, the seller of the unit shall retain the value of any improvements, the down payment, and the seller's proportionate share of appreciation.

2. The City shall recapture any additional subsidy and its proportionate share of appreciation, which shall then be used within three years for any of the purposes described in Health and Safety Code Section 33334.2(e) that promote home ownership. For the purposes of this Section:

   a. The City's initial subsidy shall be equal to the fair market value of the home at the time of initial sale, minus the initial sale price to the moderate-income household, plus the amount of any down payment assistance or mortgage assistance. If upon resale the market value is lower than the initial market value, then the value at the time of the resale shall be used as the initial market value; and

   b. The City's proportionate share of appreciation shall be equal to the ratio of the initial subsidy to the fair market value of the home at the time of initial sale.

106.32.080 - Location and Type of Designated Units

A. Location/dispersal of units. As required by the Council in compliance with Section 106.32.090 (Processing of Bonus Requests), below, designated units shall be reasonably dispersed throughout the project where feasible, shall contain on average the same number of bedrooms as the non-designated units in the project, and shall be compatible with the design or use of remaining units in terms of appearance, materials, and finished quality.

B. Phasing. If a project is to be phased, the density bonus units shall be phased in the same proportion as the non-density bonus units, or phased in another sequence acceptable to the City.

106.32.090 - Processing of Bonus Requests

A. Permit requirement. A request for a density bonus and other incentives and concessions shall be submitted concurrently with the filing of the planning application for the first discretionary permit required for the housing or commercial development. The density bonus request shall be submitted in writing and shall be processed concurrently with the planning application. The applicant shall be informed whether the application is complete consistent with Government Code Section 65943.

B. Application Contents. An application to request a density bonus shall be filed with the Department on a City application form together with all information required by the City's list of required application contents.

C. Application Review Process. The review process for a density bonus project shall be the same as that required for associated discretionary permits. Discretionary actions on density bonus project shall be subject to the same appeal process applied to associated discretionary permits. The application and approval of a density bonus and any associated incentives or concessions shall not require a separate permit or approval process from that otherwise required for the same project without a density bonus request.

D. Findings for approval. In addition to the findings required by any discretionary permits, the approval of a density bonus and other incentives and concessions shall require that the review authority first make all of the following additional findings:

1. The residential development will be consistent with the General Plan, except as provided by this Chapter for density bonuses, and other incentives and concessions;

2. The approved number of dwellings can be accommodated by existing and planned infrastructure capacities;

3. Adequate evidence exists to indicate that the project will provide affordable housing in a manner consistent with the purpose and intent of this Chapter; and

4. There are sufficient provisions to guarantee that the units will remain affordable for the required time period.

106.32.100 - Density Bonus Agreement

A. Agreement required. An applicant requesting a density bonus shall agree to enter into a density bonus agreement (referred to as the "agreement") with the City in the City's standard form of agreement.

B. Agreement provisions.

1. Project information. The agreement shall include at least the following information about the project:

a. The total number of units approved for the housing development, including the number of designated dwelling units;

b. A description of the household income group to be accommodated by the housing development, and the standards and methodology for determining the corresponding affordable rent or affordable sales price and housing cost consistent with HUD Guidelines;

c. The marketing plan for the affordable units;

d. The location, unit sizes (square feet), and number of bedrooms of the designated dwelling units;

e. Tenure of the use restrictions for designated dwelling units of the time periods required by Section 106.32.070 (Continued Availability);

f. A schedule for completion and occupancy of the designated dwelling units;

g. A description of the additional incentives being provided by the City;

h. A description of the remedies for breach of the agreement by the owners, developers, and/or successors-in-interest of the project; and

i. Other provisions to ensure successful implementation and compliance with this Chapter.

2. Minimum requirements. The agreement shall provide, at minimum, that:

a. The developer shall give the City the continuing right-of-first-refusal to lease or purchase any or all of the designated dwelling units at the appraised value;

b. The deeds to the designated dwelling units shall contain a covenant stating that the developer or successors-in-interest shall not assign, lease, rent, sell, sublet, or otherwise transfer any interests for designated units without the written approval of the City;

c. When providing the written approval, the City shall confirm that the price (rent or sale) of the designated dwelling unit is consistent with the limits established for low and very low income households, as published by HUD;

d. The City shall have the authority to enter into other agreements with the developer, or purchasers of the designated dwelling units, to ensure that the required dwelling units are continuously occupied by eligible households;

e. Applicable deed restrictions, in a form satisfactory to the City Attorney, shall contain provisions for the enforcement of owner or developer compliance. Any default or failure to comply may result in foreclosure, specific performance, or withdrawal of the Certificate of Occupancy;

f. In any action taken to enforce compliance with the deed restrictions, the City Attorney shall, if compliance is ordered by a court of competent jurisdiction, take all action that may be allowed by law to recover all of the City's costs of action including legal services; and

g. Compliance with the agreement will be monitored and enforced in compliance with the measures included in the agreement.

3. For-sale housing conditions. In the case of for-sale housing developments, the agreement shall provide for the following conditions governing the initial sale and use of designated dwelling units during the applicable restriction period:

a. Designated dwelling units shall be owner-occupied by eligible households, or by qualified residents in the case of senior housing; and

b. The initial purchaser of each designated dwelling unit shall execute an instrument or agreement approved by the City which:

(1) Restricts the sale of the unit in compliance with this Chapter during the applicable use restriction period;

(2) Contains provisions as the City may require to ensure continued compliance with this Chapter and State law; and

(3) Shall be recorded against the parcel containing the designated dwelling unit.

4. Rental housing conditions. In the case of a rental housing development, the agreement shall provide for the following conditions governing the use of designated dwelling units during the use restriction period:

a. The rules and procedures for qualifying tenants, establishing affordable rent, filling vacancies, and maintaining the designated dwelling units for qualified tenants;

b. Provisions requiring owners to annually verify tenant incomes and maintain books and records to demonstrate compliance with this Chapter;

c. Provisions requiring owners to submit an annual report to the City, which includes the name, address, and income of each person occupying the designated dwelling units, and which identifies the bedroom size and monthly rent or cost of each unit; and

d. The applicable use restriction period shall comply with the time limits for continued availability in Section 106.32.070 (Continued Availability), above.

C. Execution of agreement.

1. Following Council approval of the agreement, and execution of the agreement by all parties, the City shall record the completed agreement on the parcels designated for the construction of designated dwelling units, at the County Recorder's Office.

2. The approval and recordation shall take place at the same time as the final map or, where a map is not being processed, before issuance of Building Permits for the designated dwelling units.

3. The agreement shall be binding on all future owners, developers, and/or successors-in-interest.

106.32.110 - Control of Resale

In order to maintain the availability of for-sale affordable housing units constructed in compliance with this Chapter, the following resale conditions shall apply.

A. **Limits on resale price.** The price received by the seller of an affordable unit shall be limited to the purchase price plus an increase based on the Sacramento metropolitan area consumer price index, an amount consistent with the increase in the median income since the date of purchase, or the fair market value, whichever is less. Before offering an affordable housing unit for sale, the seller shall provide written notice to the City of their intent to sell. The notice shall be provided by certified mail to the Director.

B. **Units to be offered to the City.** Home ownership affordable units constructed, offered for sale, or sold under the requirements of this Section shall be offered to the City or its assignee for a period of at least 90 days from the date of the notice of intent to sell is delivered to the City by the first purchaser or subsequent purchasers. Home ownership affordable units shall be sold and resold from the date of the original sale only to households as determined to be eligible for affordable units by the City in compliance with this Section. The seller shall not levy or charge any additional fees nor shall any "finders fee" or other monetary consideration be allowed other than customary real estate commissions and closing costs.

C. **Declaration of restrictions.** The owners of any affordable unit shall attach and legally reference in the grant deed conveying title of the affordable ownership unit a declaration of restrictions provided by the City, stating the restrictions imposed in compliance with this Section. The grant deed shall afford the grantor and the City the right to enforce the declaration of restrictions. The declaration of restrictions shall include all applicable resale controls, occupancy restrictions, and prohibitions required by this Section.

D. **City to monitor resale of units.** The City shall monitor the resale of ownership affordable units. The City or its designee shall have a 90-day option to commence purchase of ownership affordable units after the owner gives notification of intent to sell. Any abuse in the resale provisions shall be referred to the City for appropriate action.

106.32.120 - Judicial Relief, Waiver of Standards

A. **Judicial relief.** As provided by Government Code Section 65915(d)(3), the applicant may initiate judicial proceedings if the City refuses to grant a requested density bonus, incentive, or concession.

B. **Waiver of standards preventing the use of bonuses, incentives, or concessions.**

1. As required by Government Code Section 65915(e), the City will not apply a development standard that will have the effect of precluding the construction of a development meeting the criteria of Subsection 106.32.020 A (Resident requirements), above, at the densities or with the concessions or incentives allowed by this Chapter.

2. An applicant may submit to the City a proposal for the waiver or reduction of development and zoning standards that would otherwise inhibit the utilization of a density bonus on a specific site, including minimum parcel size, side setbacks, and placement of public works improvements.

3. The applicant shall show that the waiver or modification is necessary to make the housing units economically feasible.

C. City exemption. Notwithstanding the provisions of Subsections A. and B., above, nothing in this Section shall be interpreted to require the City to:

1. Grant a density bonus, incentive, or concession, or waive or reduce development standards, if the bonus, incentive, concession, waiver, or reduction, would have a specific, adverse impact, as defined in Government Code Section 65589.5(d)(2), upon health, safety, or the physical environment, and for which there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact; or

2. Grant a density bonus, incentive or concession, or waive or reduce development standards, that would have an adverse impact on any real property that is listed in the California Register of Historical Resources.

Ionic Enterprises, Inc.

3007 Douglas Blvd., Ste. 170
Roseville, CA 95661
916.783.0330 ph
916.783.3739 fax

March 28, 2019

Casey Kempenaar
City of Citrus Heights
6360 Fountain Square Drive
Citrus Heights, CA 95621

Re: **Request for Density Bonus and Concessions**
Fair Oaks Boulevard Senior Apartments
12057 Fair Oaks Blvd, Citrus Heights, CA 95621

Dear Mr. Kempenaar

The GOHC and Ionic Enterprises, Inc. are requesting certain concessions for the referenced Apartment project. The concessions are needed in order to make the site and unit plan feasible within the boundaries of the land parcel.

As you know, the referenced project seeks City approval for a rezoning from R-10 to R-20 in order to build 110 affordable, senior apartments. This apartment community will accommodate seniors 55 years and older who have an income of no more than 60% of the median income. Without the density bonus and concessions sought, this affordable, senior housing project will not be economically feasible.

The project will need the parking and hammer head concessions in order to maintain our unit count and provide adequate parking and services. If the concessions we request are not granted we would lose 3 buildings and 21 apartment units. This amounts to almost 20% of the affordable housing being removed. The loss of 20% would result in a significant reduction in funding that would be associated with those units, such as tax-credits and low-interest bond funding. The loss of capital funds would render this affordable, senior housing project no longer economically feasible.

Under existing California law, which appears to correspond with the City of Citrus Heights Municipal Code – Title 106, the city "…shall grant a density bonus and incentives or concessions…" when 10% of the housing units are for lower income housing, or a senior citizen housing development. (Gov't C. §65915(b)(1) and (3).) The present proposed development meets both of these criteria.

The density bonus and concessions requested are provided below.

Density Bonus

Upon approval by the City of R-20 zoning, the project will have entitlements to build 99 apartments units on the above-described parcel. However, to be economically feasible for affordable senior housing the developer requires a 11% density bonus so that 110 apartment units may be constructed.

Under the California Government Code §65915(g) the City shall grant a density bonus of at least 20% and a maximum of 30% for the type of project proposed. Under the Municipal Code guidelines at 106.32.030 subsection A.(1), the developer would be entitled to a 35% density bonus. However, for the purposes of this project, we are only asking for a 11% density bonus in order to make this project economically feasible.

The project will need this density bonus because a reduction of 11 apartment units would result in a loss of over $1.6M in capital funding as well as annual operating funding of over $130,000 and annual operating subsidies due to the funding associated with those units such as bond and tax-credit funding. This loss of capital and operating funds would make the project financially infeasible to build and operate. It would further hamper our ability to provide services to our senior citizen tenants.

Therefore, we request a 11% density bonus.

In order to be able to accommodate 110 apartment units, we will likewise need the following concessions.

Parking

Current City zoning code requires the project to have 121 parking spaces. However, in order to meet the requisite number of apartment units for feasibility, the project can only accommodate 107 parking spaces. Therefore, we request a concession reducing the number of parking spaces by 14, which is a 12% reduction.

Because this is senior housing our own data suggests the number of parking spaces required for seniors is substantially less than an ordinary multifamily apartment. Our data from other senior apartment projects we own indicate that resident parking often only takes up 70 to 75% of the parking. Therefore, this slight reduction in parking should not impact parking at the project.

Correspondingly, in order to fit 107 parking spaces we require a landscape setback reduction at the eastern most parking area that faces a vacant lot to the south. This southern property line up at the horizontal part of the ‘T’ has a 3-foot landscape set-back currently and the code proposes 10 feet.

Under the Municipal Code section 106.32.040 *Allowed Incentives or Concessions,* parking concessions are specifically contemplated. Indeed, under subsection C., *Types of Concessions,* reductions in site development standards specifically include parking requirements for density bonus projects and setbacks.

Accordingly, we request these parking concessions in order to make this affordable senior housing project economically feasible.

Fire Department Hammerhead

Finally, the fire department requires a "hammer-head" configuration at the south of the property. In order to meet their specifications, the small southern-most, easterly edge of the project requires a landscape set-back concession so that fire trucks can turn around.

Municipal Code section 106.32.040 C. 1. - *Allowed Incentives or Concessions,* specifically contemplates concessions on site coverage limitations and also provides in section C. 3., for "other regulatory incentives" not necessarily specified. We believe the Fire Department Hammerhead would fall into this category.

Therefore, we request these concessions in order to make the project feasible.

The California Government Code provides that an "applicant shall receive… three incentives for projects that include at least 30% of the total units for lower income households…". (Gov't C. §65915 (d)(2)(c)) The proposed project far exceeds this requirement.

We are asking for this density bonus and concessions for the purpose of satisfying a great need in the City of Citrus Heights and more broadly throughout the State of California. That need is affordable housing for our senior citizens. We believe granting these concessions will not have an adverse impact, will satisfy the need for affordable housing, and enhance the community.

Thank you for considering our request. If you need any further information feel free to contact the undersigned.

Sincere regard,

Sam Stamas
Ionic Enterprises, Inc.

SHEET INDEX

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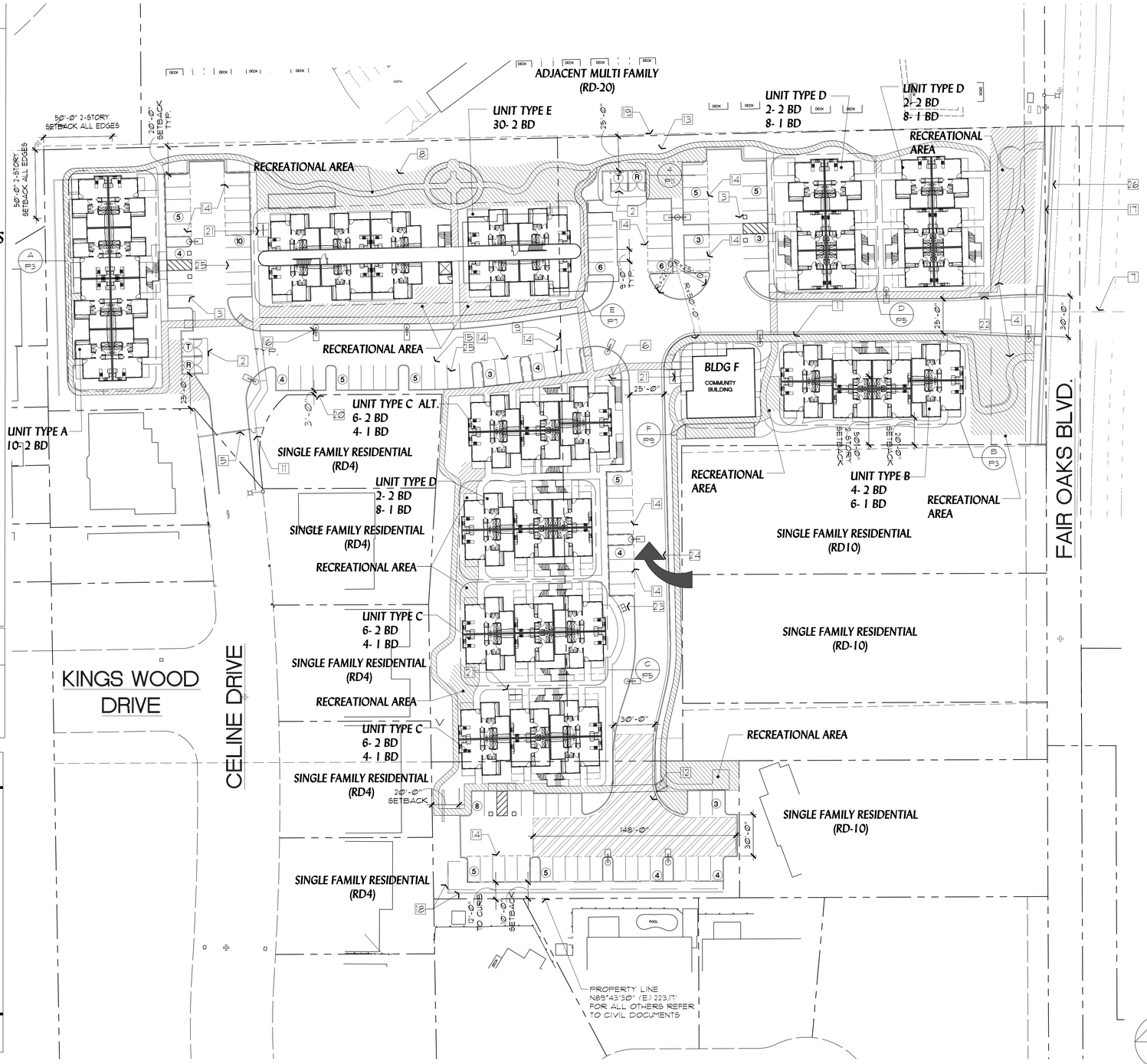
L4	LANDSCAPE ILLUSTRATIONS AND SCHEMATIC DETAILS

RECREATIONAL AREA

REQUIRED 110 X 200 = 22,000 SF

PROVIDED = 34,465 SF

VICINITY MAP



APARTMENT UNIT MATRIX

APN. 233-0430-002/ 233-0430-041/ 233-0430-007

LOT SIZE 220,705 SF (5.06 AC.)

LOT SIZE (NET AREA) 215,814 SF (4.95 AC.)

ZONING RD-10 (PROPOSED RD-20)

LOT COVERAGE 23.1%

42	ONE BEDROOM
68	TWO BEDROOMS
110	TOTAL

PARKING

6	ACCESSIBLE
0	COMPACT
101	STANDARD

107	TOTAL
121	REQUIRED

KEYNOTES

1. PROPOSED SIDEWALK
2. TRASH ENCLOSURES, CONCRETE MASONRY UNTS TYP.
3. ACCESSIBLE PARKING, TYP.
4. SIDEWALK CONNECTION TO CITY RIGHT OF WAY, TYP.
5. PROPOSED GATE FOR EGRESS OF EMERGENCY VEHICLES AND SANITATION COLLECTION TRUCKS AND RESIDENT ACCESS TO SUNRISE PLACE. FIRE/ DESIGN OPERATION TO BE WORKED WITH CITY OF CITRUS HEIGHTS
6. LANDSCAPE AREAS, REFER TO LANDSCAPE PLANS
7. CENTERLINE OF ENTRANCE TO ALIGN W/ CENTERLINE OF WALNUT HILLSWAY (STREET ACCESS FAIR OAKS BLVD)
8. (E) HOUSE TO BE RELOCATED OFF OF PROPERTY OR DEMOLISHED
9. LOT LINE TO BE ABANDONED
10. FIRE CONTROL ROOMS W/ FIRE ALARM PANEL LOCATIONS TO BE DETERMINED TYP.
11. PEDESTRIAN GATE
12. EMERGENCY VEHICLE ACCESS HAMMERHEAD

    RECREATION AREA (RA)
13. BIO FILTER/ RETENTION GRASSY SWALE, REFER TO CIVIL
14. COVERED PARKING, TYP.
15. STANDARD PARKING 9X19, TYP.
16. (SHE) AREA POST LIGHT, LED FULL CUT OFF W/ HOUSE SIDE SHIELD, 15' HIGH ON ROUND POLE
17. 15'-0" PUBLIC RIGHT OF WAY @ PARK OAKS BLVD.
18. MASONRY FENCE TO BE INSTALLED @ ALL PROPERTY LINES ABUTTING SINGLE FAMILY RESIDENCES, REFER TO P11 TYP.
19. WROUGHT IRON OR MASONRY FENCE TO BE USED ADACENT TO MULTIFAMILY RECIDENCE
20. 3' LANDSCAPE SETBACK
21. 'HORSESHOE' BICYCLE RACK 3'-0"X7'-6" 3 PROVIDED
22. DIRECTORY BOARD
23. TRASH/ RECYCLE CONTAINERS TO BE EMPTIED BY APARTMENT STAFF DAILY. KALEIDOSCOPE COMMERICAL CONTAINERS OR EQUIVALENT
24. PROPOSED ACCESS EASEMENT FOR PARCELS 233-0430-003/004 FOR SECONDARY EXIT OF PARCELS
25. LOCATION OF FUTURE EV CHARGING STATIONS
26. CLASS II BIKE LANES TO BE MAINTAINED ALONG FAIR OAKS BLVD

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

for ICON Enterprises

~~February 12 2019~~
~~March 25 2019~~
June 19 2019

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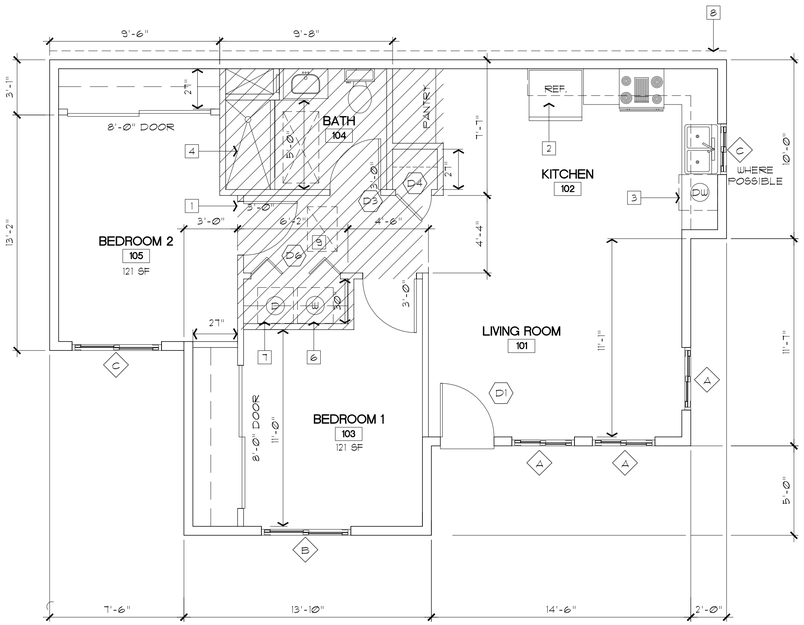
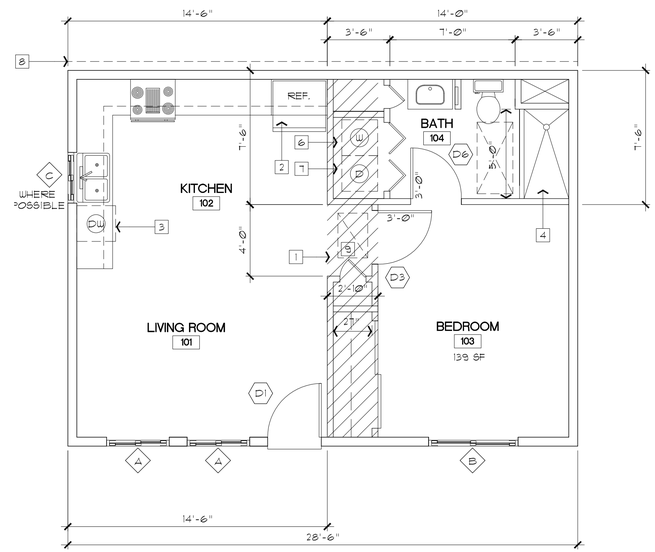
PROPOSED SITE PLAN P1



KEYNOTES

1. LOWERED CEILING AREA
2. REFRIGERATOR
3. DISHWASHER
4. SHOWER
5. ACCESSIBLE SPACE
6. WASHER (W)
7. DRYER (D)
8. ADJACENT UNIT WALL, BOTH COMMON WALLS 1 HR RATED
9. HVAC UNIT IN SOFFIT

A. 3'-6" X 4'-8"
B. 5'-0" X 4'-8"
C. 2'-10" X 3'-8"



TYPICAL TWO BEDROOM UNIT

823 SF

TYPICAL ONE BEDROOM UNIT

599 SF

0 4' 8' 16'

SCALE: 1/8"=1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

for ICON Enterprises

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June 19 2019

TYPICAL APARTMENT UNITS P2

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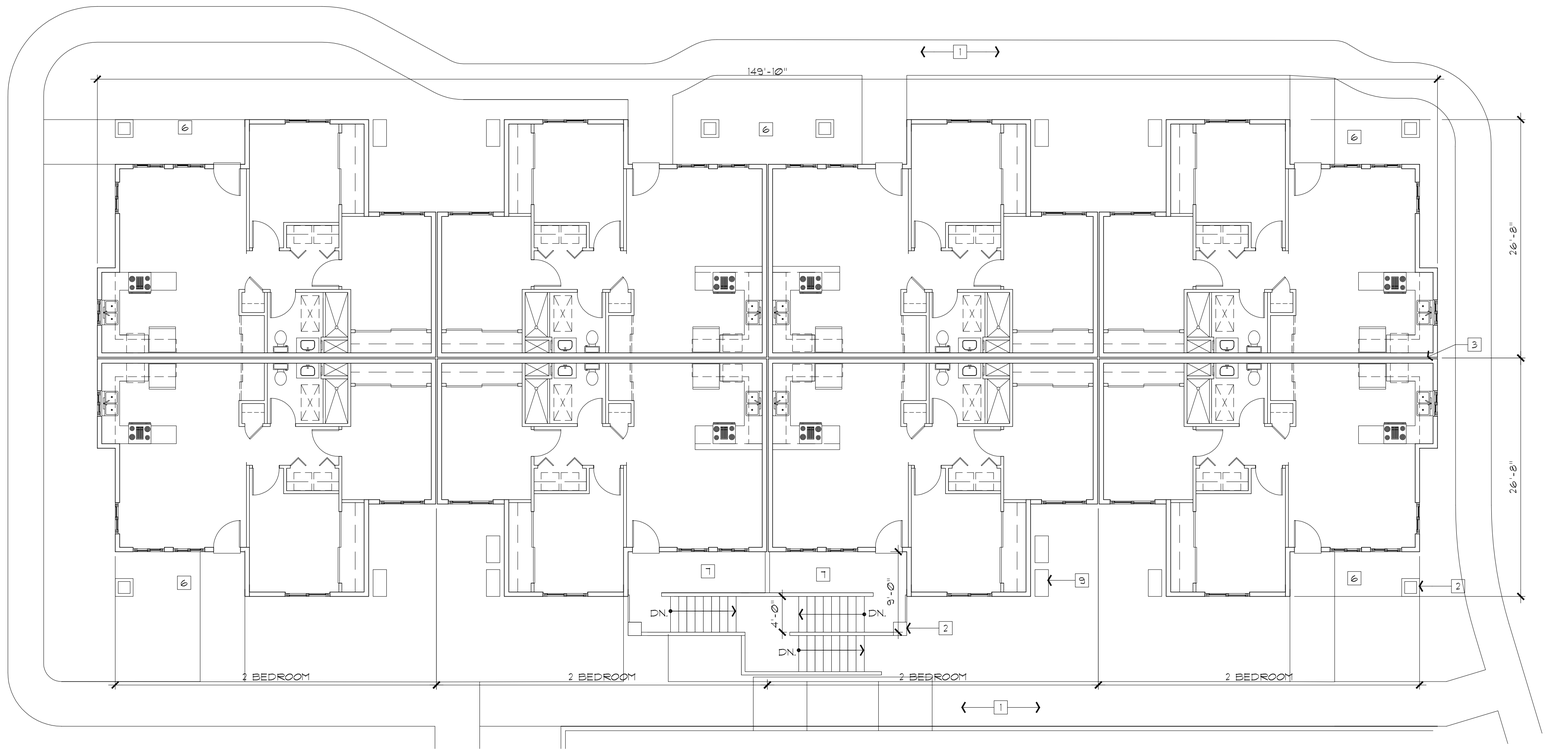
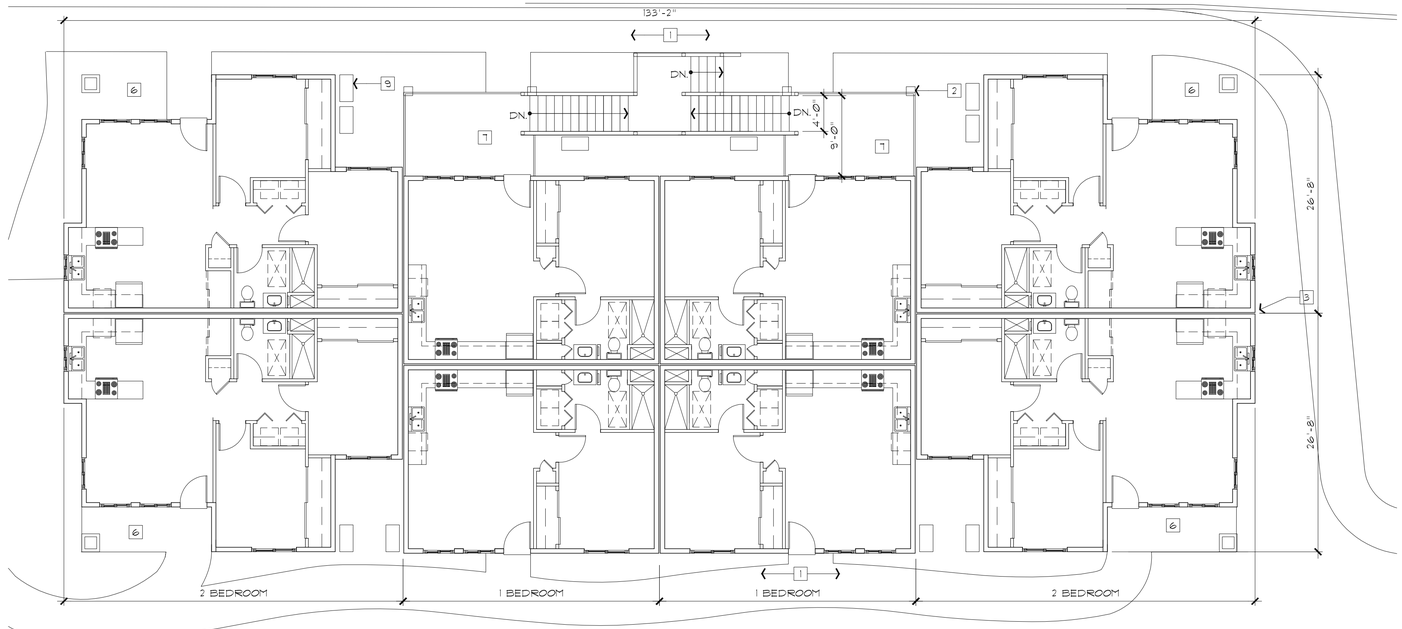
TYPE A



TYPE B



KEYNOTES

1. CONCRETE SIDEWALK
2. COLUMNS PER ELEVATION
3. ONE HOUR SEPARATION WALL
4. LANDSCAPING
5. STAIRS
6. PATIO
7. DECK
9. HVAC CONDENSING UNITS, TYP.

FOR PLAN LAYOUTS, REFER TO P2

0 4' 8' 16'

SCALE: 1/8"=1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

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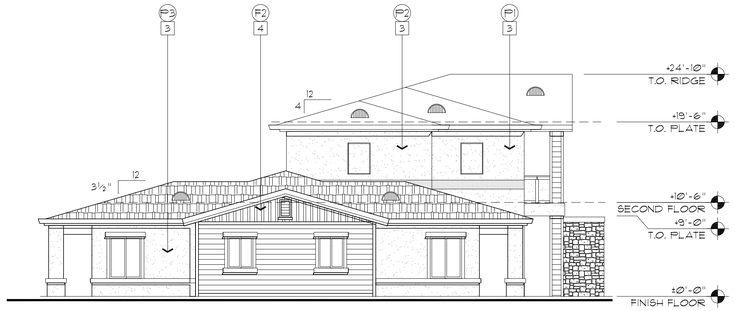
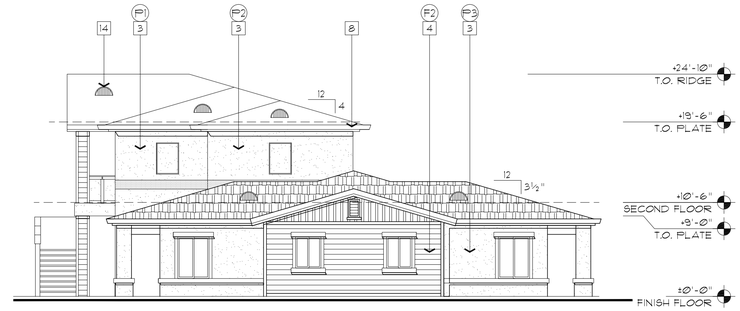
TYPE A + B UNIT LAYOUT

P3



SOUTH ELEVATION



NORTH ELEVATION

EAST ELEVATION

WEST ELEVATION

KEYNOTES

1. HEAVY COMPOSITION SHINGLE ROOF , CLASS A
2. STONE
3. PLASTER SYSTEM
4. WOOD LAP SIDING
5. UNIT DOOR
6. METAL RAILING
7. WINDOW
8. METAL GUTTER
9. STAIRS
10. HAND RAIL
11. WINDOW TRIM
12. BREEZE WAY BETWEEN UNITS
13. ATTIC VENTS
14. EYEBROW VENTS
15. FAUX WINDOW

FINISH SCHEDULE

- P1 PLASTER MAIN BODY COLOR 'MESA TAN' SW 7695
- P2 PLASTER MAIN BODY COLOR 'HONED SOAP STONE' SW 9126
- P3 PLASTER MAIN BODY COLOR 'CITYSCAPE' SW 7067
- P4 TRIM ACCENTS 'SHOJI WHITE' SW 7042
- P5 DOORS 'DARK NIGHT' SW 6237
- P6 METAL WORK 'SEALSKIN' SW 7675
- F1 STONE VENEER CULTURED STONE "SOUTHERN LEDGESTONE" COLOR VARIETY- 'ECHO RIDGE'
- F2 WOOD SIDING 'ANALYTICAL GRAY' SW 7051
- F3 ROOFING "CERTIANTEED" PRESIDENTIAL SHAKE TL 'SHADOW GRAY'

NOTE 1: SW = SHERWIN WILLIAMS

0 4' 8' 16'

SCALE: 1/8"=1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

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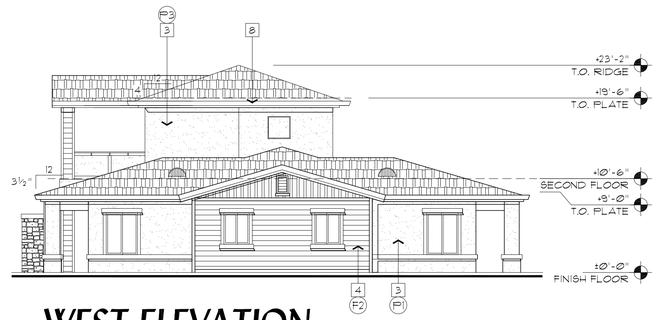
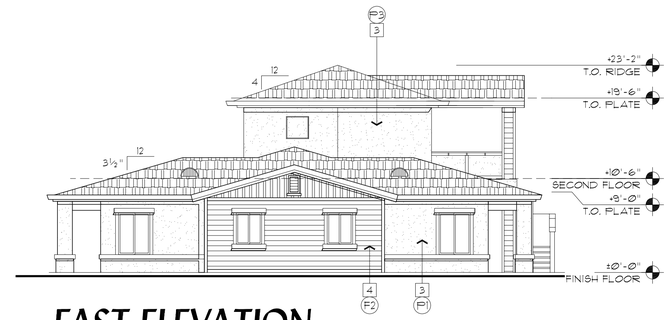
TYPE A ELEVATIONS P4A

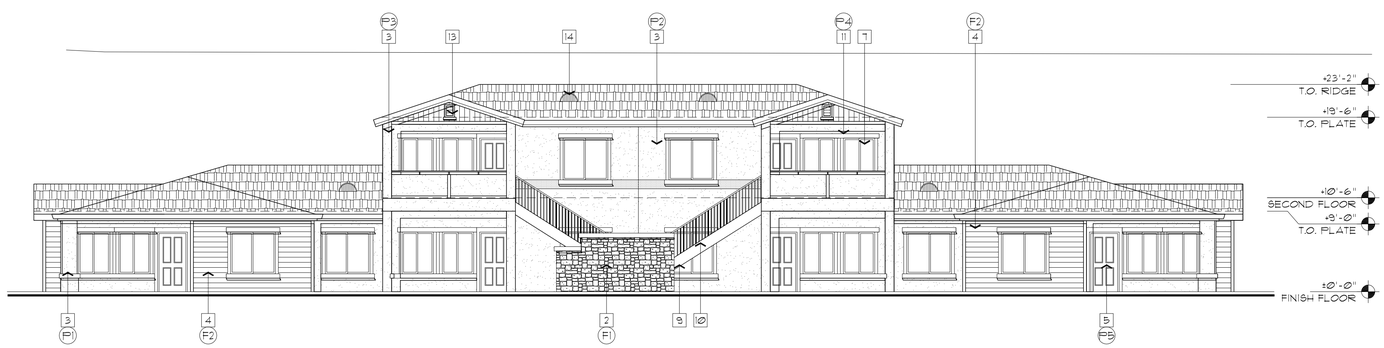


WEST ELEVATION



EAST ELEVATION

SOUTH ELEVATION



NORTH ELEVATION

KEYNOTES

1. HEAVY COMPOSITION SHINGLE ROOF , CLASS A
2. STONE
3. PLASTER SYSTEM
4. WOOD LAP SIDING
5. UNIT DOOR
6. METAL RAILING
7. WINDOW
8. METAL GUTTER
9. STAIRS
10. HAND RAIL
11. WINDOW TRIM
12. BREEZE WAY BETWEEN UNITS
13. ATTIC VENTS
14. EYEBROW VENTS
15. FAUX WINDOW

FINISH SCHEDULE

- P1 PLASTER MAIN BODY COLOR 'MESA TAN' SW 7695
- P2 PLASTER MAIN BODY COLOR 'HONED SOAP STONE' SW 9126
- P3 PLASTER MAIN BODY COLOR 'CITYSCAPE' SW 7067
- P4 TRIM ACCENTS 'SHOJI WHITE' SW 7042
- P5 DOORS 'DARK NIGHT' SW 6237
- P6 METAL WORK 'SEALSKIN' SW 7675
- F1 STONE VENEER CULTURED STONE "SOUTHERN LEDGESTONE" COLOR VARIETY- 'ECHO RIDGE'
- F2 WOOD SIDING 'ANALYTICAL GRAY' SW 7051
- F3 ROOFING "CERTIANTEED" PRESIDENTIAL SHAKE TL 'SHADOW GRAY'

NOTE 1: SW = SHERWIN WILLIAMS

0 4' 8' 16'

SCALE: 1/8"=1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

for ICON Enterprises

~~February 12 2019~~
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June 19 2019

TYPE B ELEVATIONS P4B

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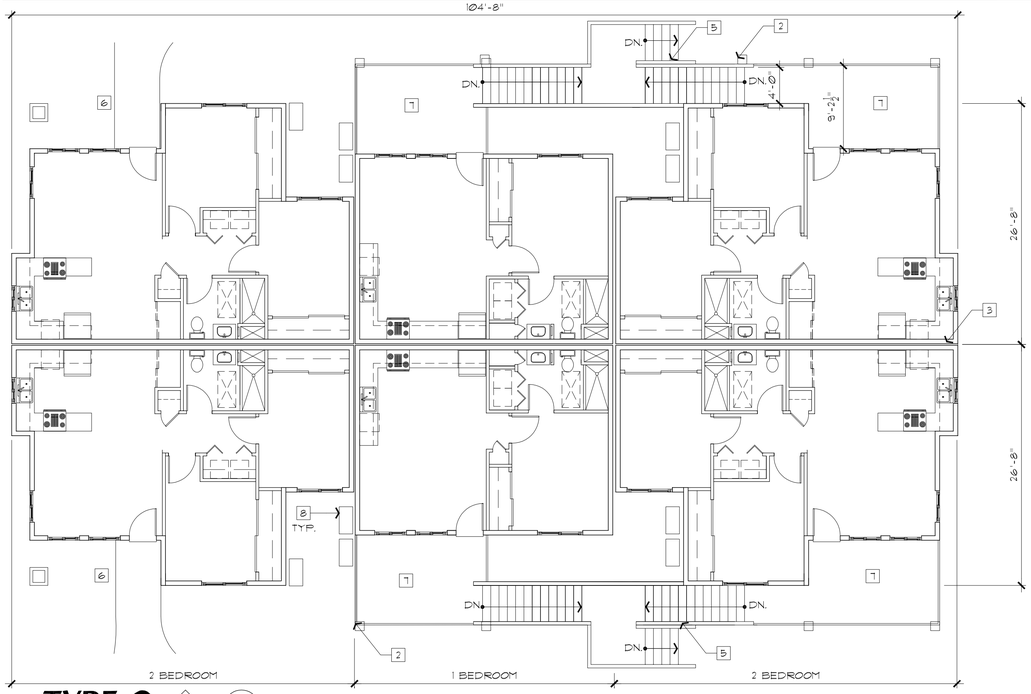
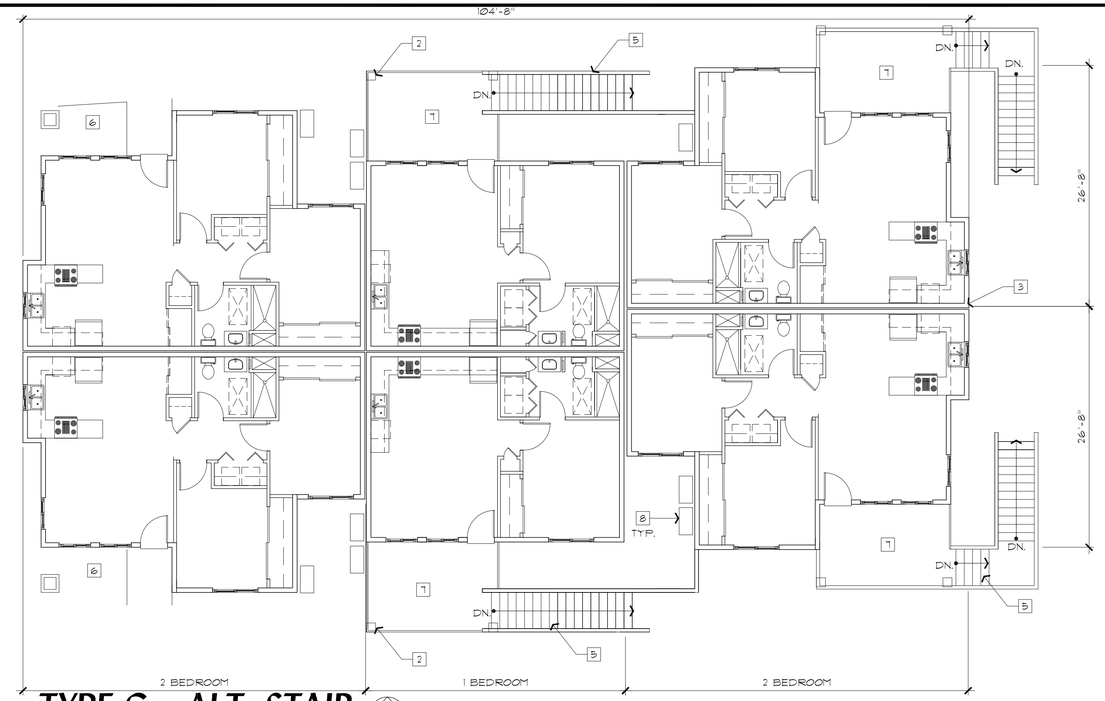


TYPE C

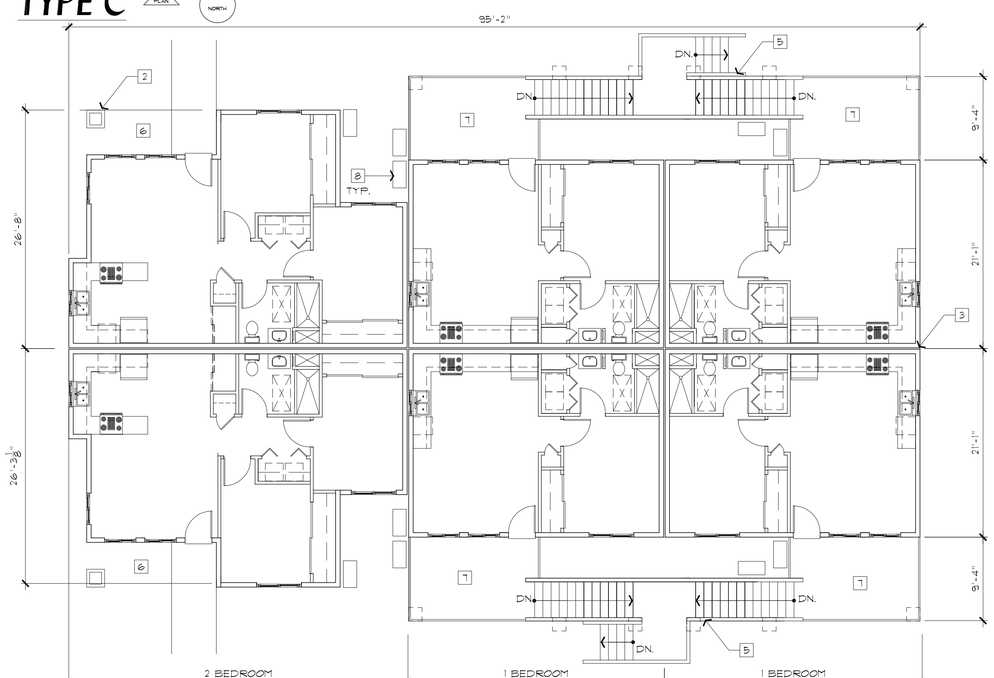


TYPE C ALT. STAIR

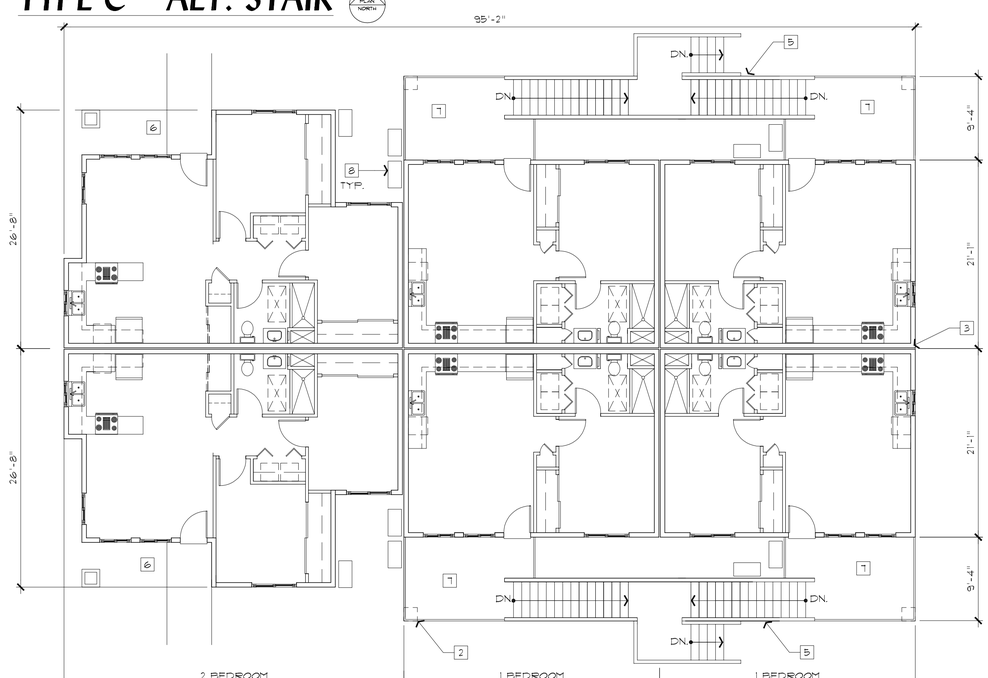
KEYNOTES

1. CONCRETE SIDEWALK
2. COLUMNS PER ELEVATION
3. ONE HOUR SEPARATION WALL
4. LANDSCAPING
5. STAIRS
6. PATIO
7. DECK
8. HVAC CONDENSING UNITS, TYP.

FOR PLAN LAYOUTS, REFER TO P2



TYPE D



TYPE D ALT. STAIR

0 4' 8' 16'

SCALE: 1/8"=1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

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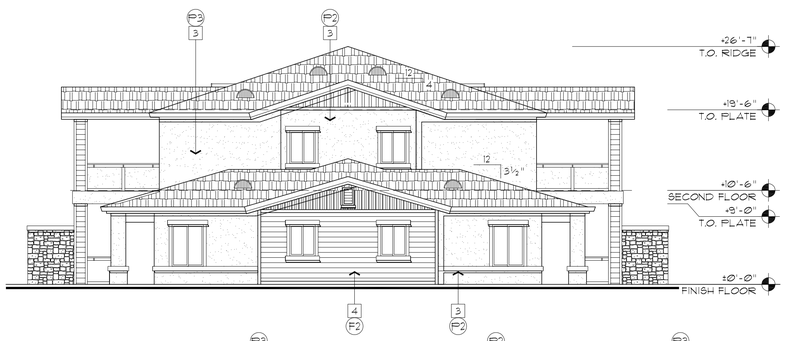
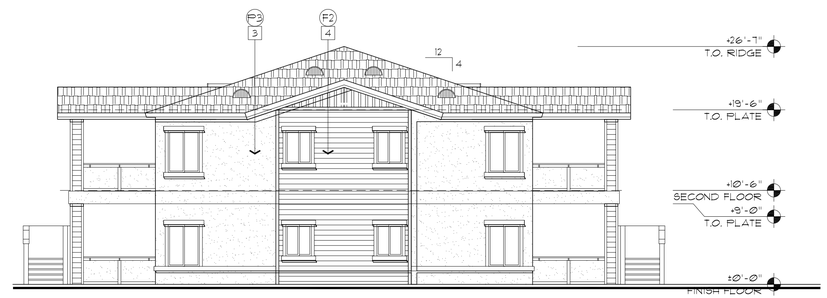
TYPE C + D UNIT LAYOUT

P5

TYPE C





KEYNOTES

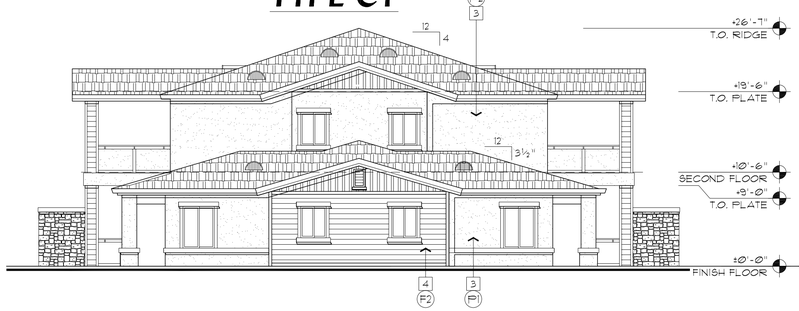
1. HEAVY COMPOSITION SHINGLE ROOF , CLASS A
2. STONE
3. PLASTER SYSTEM
4. WOOD LAP SIDING
5. UNIT DOOR
6. METAL RAILING
7. WINDOW
8. METAL GUTTER
9. STAIRS
10. HAND RAIL
11. WINDOW TRIM
12. BREEZE WAY BETWEEN UNITS
13. ATTIC VENTS
14. EYEBROW VENTS

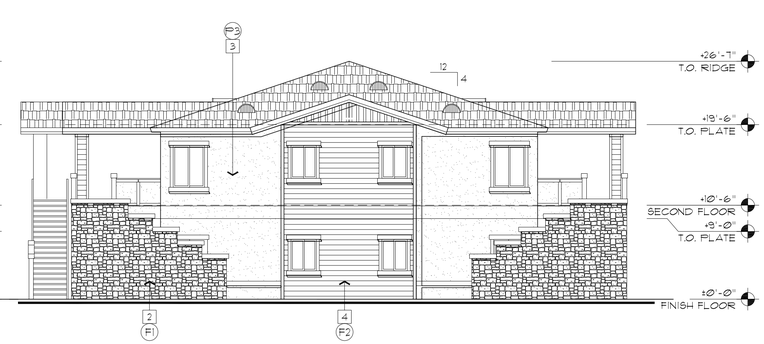
FINISH SCHEDULE

P1	PLASTER MAIN BODY COLOR 'MESA TAN' SW 7695
P2	PLASTER MAIN BODY COLOR 'HONED SOAP STONE' SW 9126
P3	PLASTER MAIN BODY COLOR 'CITYSCAPE' SW 7067
P4	TRIM ACCENTS 'SHOJI WHITE' SW 7042
P5	DOORS 'DARK NIGHT' SW 6237
P6	METAL WORK 'SEALSKIN' SW 7675
F1	STONE VENEER CULTURED STONE "SOUTHERN LEDGESTONE" COLOR VARIETY- 'ECHO RIDGE'
F2	WOOD SIDING 'ANALYTICAL GRAY' SW 7051
F3	ROOFING "CERTIANTEED" PRESIDENTIAL SHAKE TL 'SHADOW GRAY'

NOTE 1: SW = SHERWIN WILLIAMS

TYPE C1





0 4' 8' 16'

SCALE: 1/8"=1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

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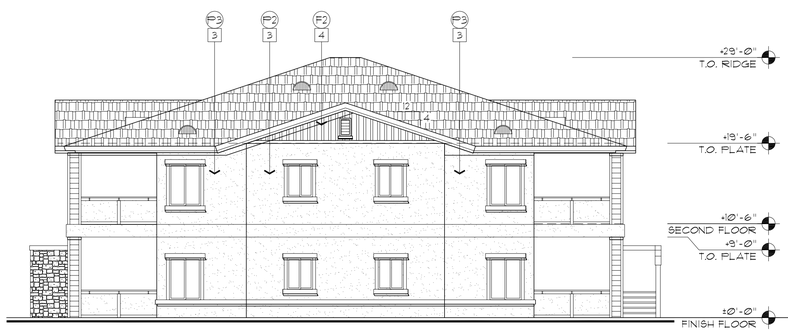
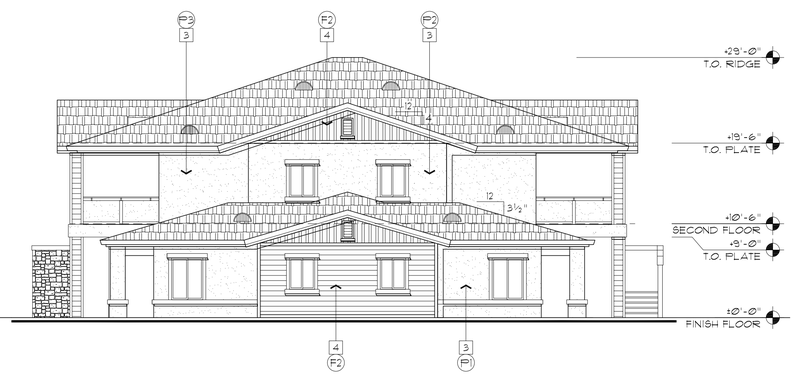
TYPE C+C1 ELEVATIONS P6A

TYPE D





TYPE D- END ELEVATIONS

KEYNOTES

1. HEAVY COMPOSITION SHINGLE ROOF , CLASS A
2. STONE
3. PLASTER SYSTEM
4. WOOD LAP SIDING
5. UNIT DOOR
6. METAL RAILING
7. WINDOW
8. METAL GUTTER
9. STAIRS
10. HAND RAIL
11. WINDOW TRIM
12. BREEZE WAY BETWEEN UNITS
13. ATTIC VENTS
14. EYEBROW VENTS
15. FAUX WINDOW

FINISH SCHEDULE

- P1 PLASTER MAIN BODY COLOR 'MESA TAN' SW 7695
- P2 PLASTER MAIN BODY COLOR 'HONED SOAP STONE' SW 9126
- P3 PLASTER MAIN BODY COLOR 'CITYSCAPE' SW 7067
- P4 TRIM ACCENTS 'SHOJI WHITE' SW 7042
- P5 DOORS 'DARK NIGHT' SW 6237
- P6 METAL WORK 'SEALSKIN' SW 7675
- F1 STONE VENEER CULTURED STONE "SOUTHERN LEDGESTONE" COLOR VARIETY- 'ECHO RIDGE'
- F2 WOOD SIDING 'ANALYTICAL GRAY' SW 7051
- F3 ROOFING "CERTIANTEED" PRESIDENTIAL SHAKE TL 'SHADOW GRAY'

NOTE 1: SW = SHERWIN WILLIAMS

0 4' 8' 16'

SCALE: 1/8"= 1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

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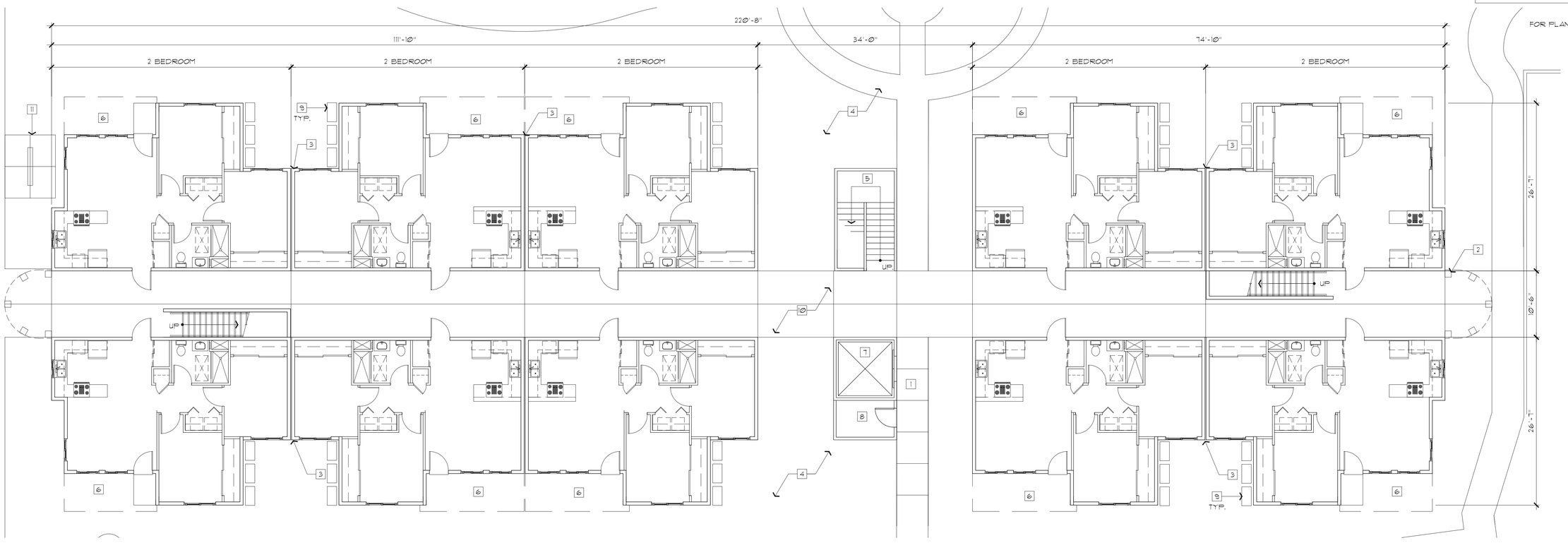
TYPE D ELEVATIONS P6B

KEYNOTES

1. CONCRETE SIDEWALK
2. COLUMNS PER ELEVATION
3. ONE HOUR SEPARATION WALL
4. LANDSCAPING
5. STAIRS
6. PATIO
7. ELEVATOR
8. ELEVATOR EQUIPMENT ROOM
9. HVAC CONDENSING UNITS, TYP.
10. CONCRETE WALK
11. BICYCLE RACK



FOR PLAN LAYOUTS, REFER TO P2

TYPE E

PLAN NORTH

0 4' 8' 16'

SCALE: 1/8"=1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

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TYPE E UNIT LAYOUT P7

KEYNOTES

1. HEAVY COMPOSITION SHINGLE ROOF , CLASS A
2. STONE
3. PLASTER SYSTEM
4. WOOD LAP SIDING
5. UNIT DOOR
6. METAL RAILING
7. WINDOW
8. METAL GUTTER
9. STAIRS
10. HAND RAIL
11. WINDOW TRIM
12. BREEZE WAY BETWEEN UNITS
13. ATTIC VENTS
14. EYEBROW VENTS
15. ELEVATOR MACHINE ROOM

FINISH SCHEDULE

- P1 PLASTER MAIN BODY COLOR 'MESA TAN' SW 7695
- P2 PLASTER MAIN BODY COLOR 'HONED SOAP STONE' SW 9126
- P3 PLASTER MAIN BODY COLOR 'CITYSCAPE' SW 7067
- P4 TRIM ACCENTS 'SHOJI WHITE' SW 7042
- P5 DOORS 'DARK NIGHT' SW 6237
- P6 METAL WORK 'SEALSKIN' SW 7675
- F1 STONE VENEER CULTURED STONE "SOUTHERN LEDGESTONE" COLOR VARIETY- 'ECHO RIDGE'
- F2 WOOD SIDING 'ANALYTICAL GRAY' SW 7051
- F3 ROOFING "CERTIANTEED" PRESIDENTIAL SHAKE TL 'SHADOW GRAY'

NOTE 1: SW = SHERWIN WILLIAMS

TYPE E END ELEVATION (EAST AND WEST)

TYPE E ELEVATION- LONG ELEVATION (NORTH AND SOUTH)

(STAIRS ON OPPOSITE ELEVATION)

0 4' 8' 16'

SCALE: 1/8"= 1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

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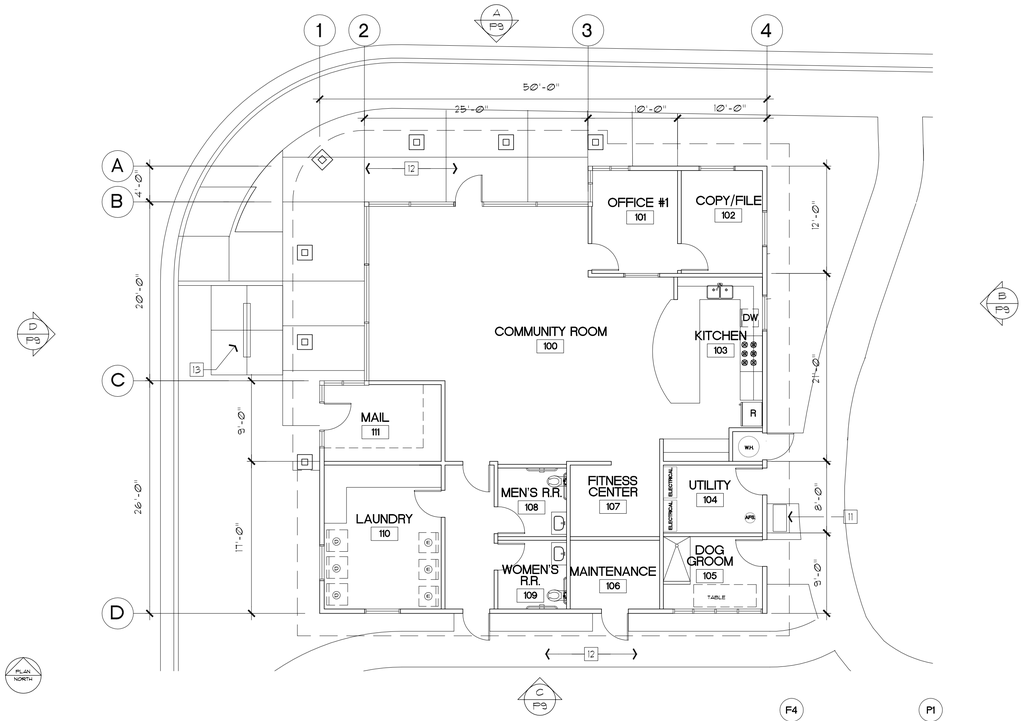
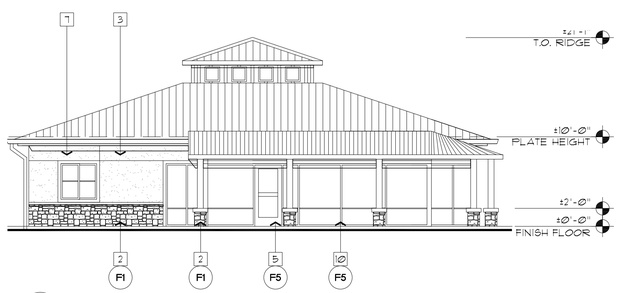
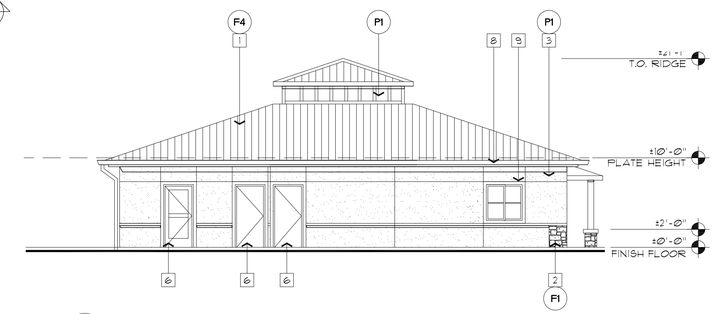
TYPE E ELEVATIONS P8



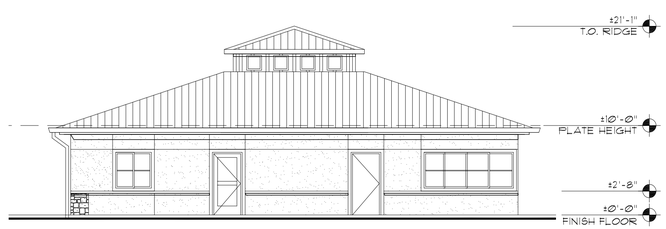
TYPE F CLUB HOUSE PLAN



A NORTH ELEVATION



B EAST ELEVATION



C SOUTH ELEVATION

D WEST ELEVATION

TYPE F CLUB HOUSE ELEVATIONS

KEYNOTES

1. METAL CORRUGATED ROOFING
2. STONE
3. PLASTER SYSTEM
4. WOOD LAP SIDING
5. ENTRY DOOR
6. METAL DOOR
7. WINDOW
8. METAL GUTTER
9. WINDOW TRIM
10. STOREFRONT SYSTEM
11. HVAC CONDENSER EQUIPMENT
12. CONCRETE WALK
13. BICYCLE RACK

FINISH SCHEDULE

- P1 PLASTER MAIN BODY COLOR 'MESA TAN' SW 7695
- P2 PLASTER MAIN BODY COLOR 'HONED SOAP STONE' SW 9126
- P3 PLASTER MAIN BODY COLOR 'CITYSCAPE' SW 7067
- P4 TRIM ACCENTS 'SHOJI WHITE' SW 7042
- P5 DOORS 'DARK NIGHT' SW 6237
- P6 METAL WORK 'SEALSKIN' SW 7675
- F1 STONE VENEER CULTURED STONE "SOUTHERN LEDGESTONE" COLOR VARIETY - ECHO RIDGE'
- F2 WOOD SIDING 'ANALYTICAL GRAY' SW 7051
- F3 ROOFING "CERTIANTEED" PRESIDENTIAL SHAKE TL 'SHADOW GRAY'
- F4 METAL ROOFING WESTERN STATES METAL GALVALUME
- F5 STOREFRONT NATURAL ANODIZED

NOTE 1: SW = SHERWIN WILLIAMS

0 4' 8' 16'

SCALE: 1/8"=1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

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~~February 12 2019~~
~~March 25 2019~~
June 19 2019

TYPE F PLAN AND COLORED ELEVATIONS

P9

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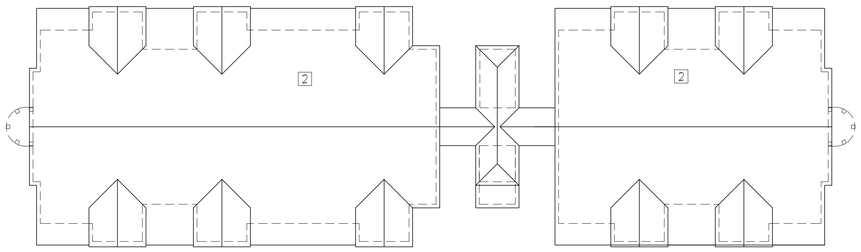
916.390.2227 mobile
916.780.0305 fax
cmiers@mierscottarchitects.com

KEYNOTES/LEGEND

1 METAL RIB ROOF
2 HEAVY COMPOSITION SHINGLE CLASS A
3
4
5



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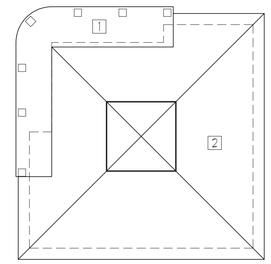
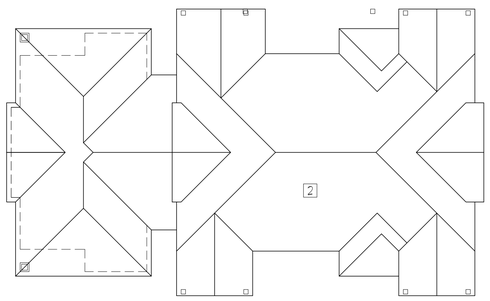


TYPE F ROOF PLAN



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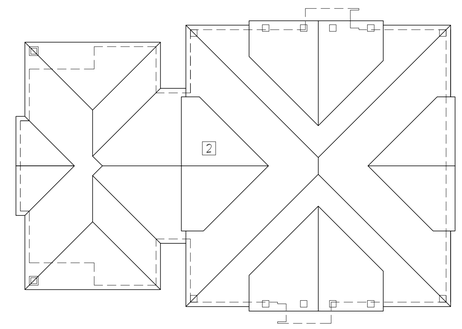

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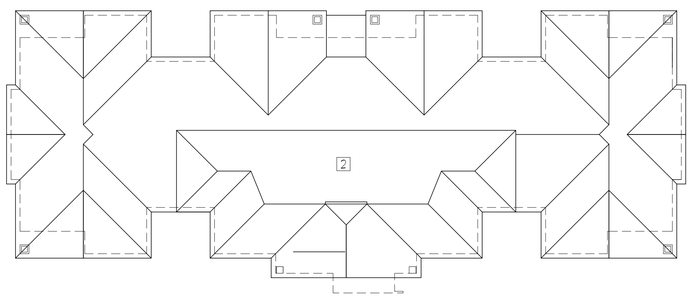
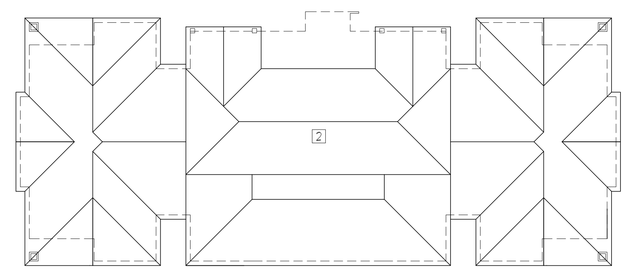


TYPE A ROOF PLAN



TYPE B ROOF PLAN

SCALE: 1/16"=1'-0"
0 8' 16' 32'

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

for ICON Enterprises

~~February 12 2019~~
~~March 25 2019~~
June 19 2019

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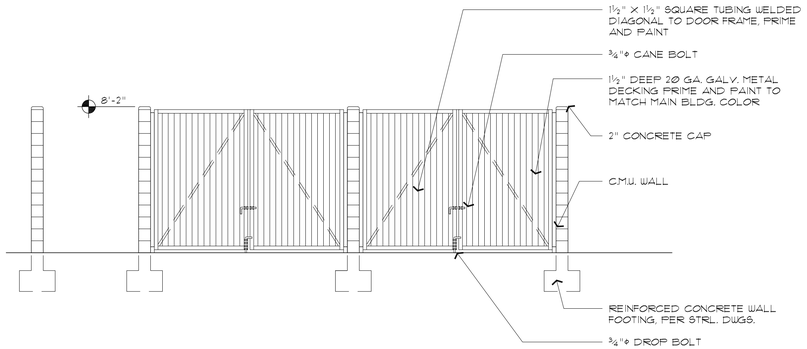
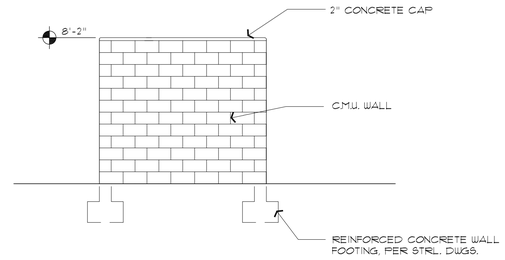
ROOF PLANS

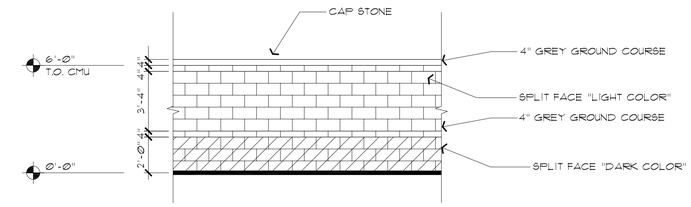
P10



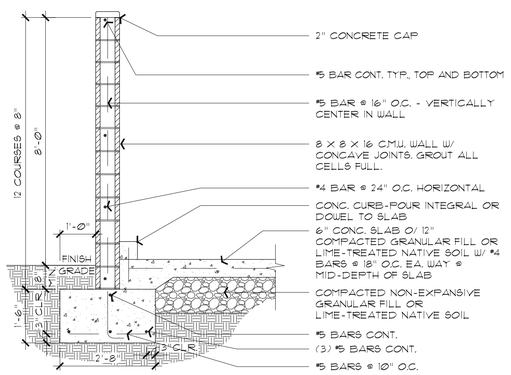
6 TRASH ENCLOSURE ELEVATION 1/4"



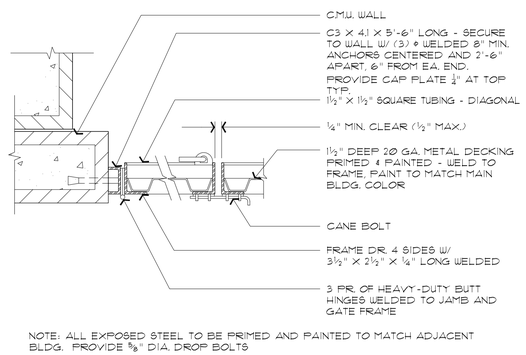
7 TRASH ENCLOSURE ELEVATION 1/4"



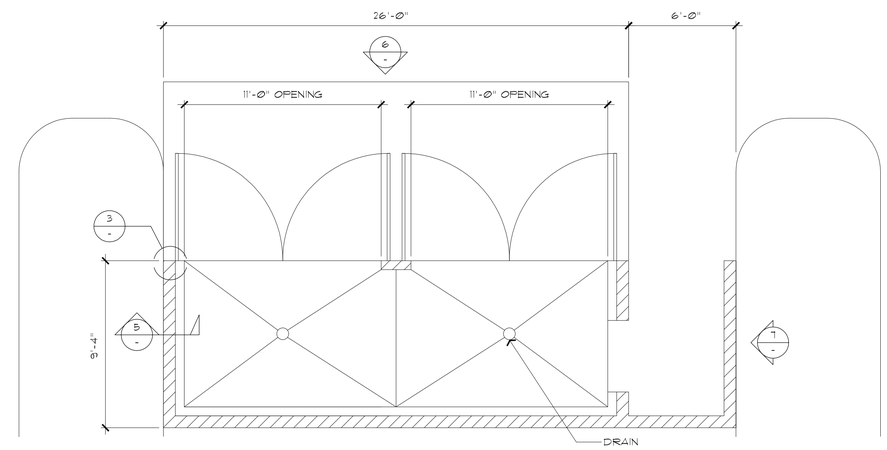
8 TYPICAL SITE WALL ELEVATION 1/4"



5 TRASH ENCLOSURE WALL 1/2"



3 TRASH ENCLOSURE DOOR 1-1/2"

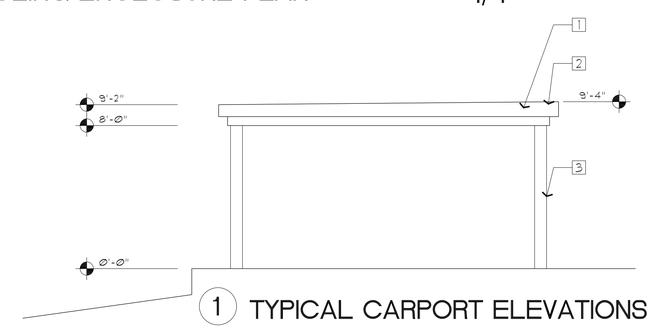


4 TYPICAL TRASH/ RECYCLING ENCLOSURE PLAN 1/4"

KEYNOTES/LEGEND

1	METAL RIB ROOF
2	METAL STRUCTURE
3	METAL TUBE POSTS

2 TYPICAL CARPORT ELEVATIONS



1 TYPICAL CARPORT ELEVATIONS

TYPE A ROOF PLAN

0 2' 4' 8'

SCALE: 1/4"=1'-0"

FAIR OAKS, CITRUS HEIGHTS APARMENTS

12057 FAIR OAKS BLVD.

for ICON Enterprises

~~February 12 2019~~
~~March 25 2019~~
June 19 2019

SITE DETAILS

P11

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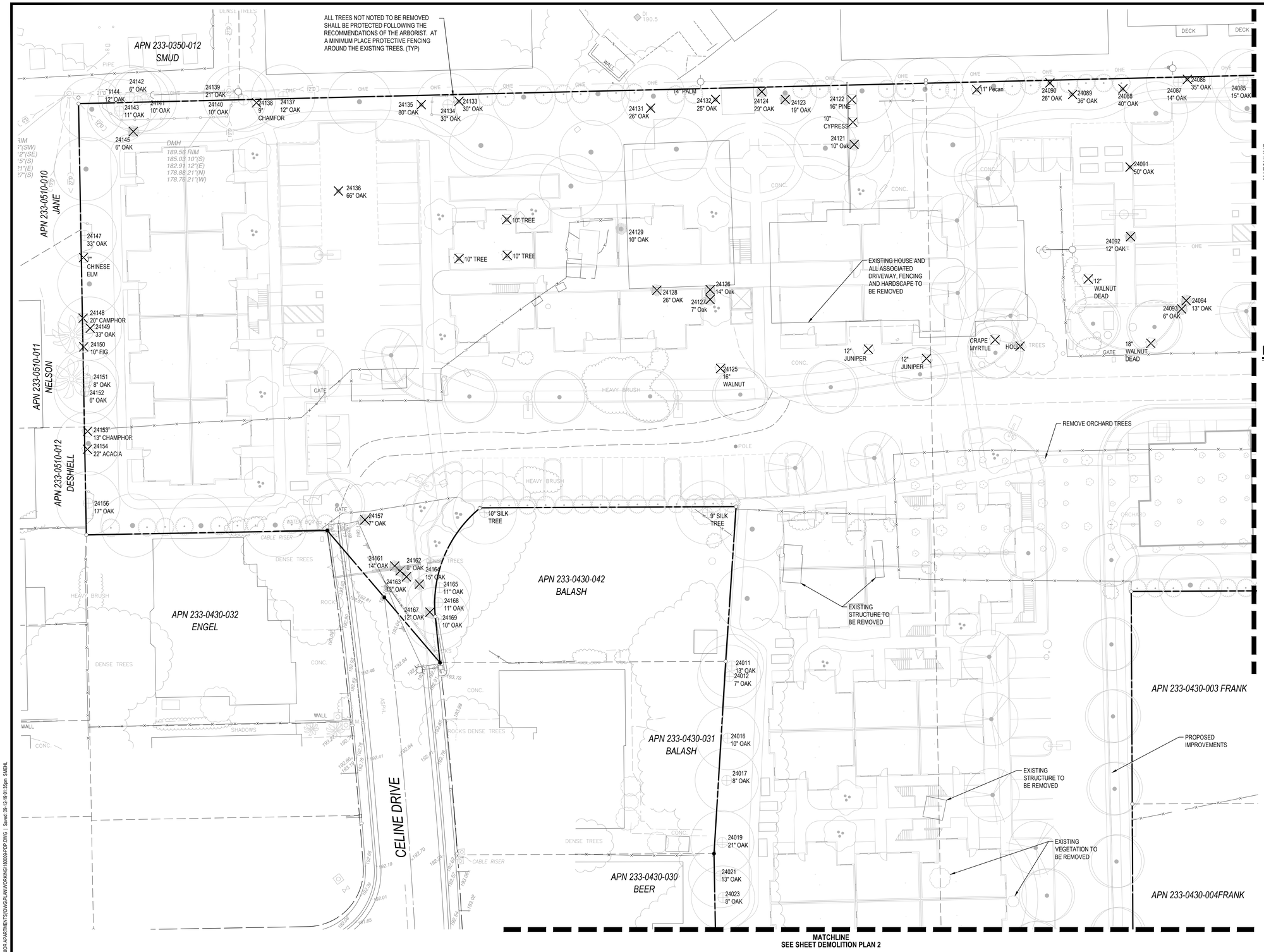

GRAPHIC SCALE

20 10 0 20

1 in = 20 ft

NOTE: TREE INVENTORY TABLE AND RECOMMENDATIONS WERE PREPARED BY ACORN ARBORICULTURAL SERVICES, INC. SEE SHEET 3 FOR THE PROTECTED TREE INVENTORY ASSESSMENT TABLE AND REMOVALS.

TREE PROTECTION: THE CONTRACTOR SHALL INSTALL A MINIMUM OF A SIX-FOOT HIGH CHAIN LINK FENCE (OR ACCEPTABLE ALTERNATIVE SUCH AS) AT THE OUTERMOST EDGE OF THE TREE PROTECTION ZONE FOR EACH TREE OR GROUP OF TREES. SIGNS MUST BE INSTALLED BY THE APPLICANT ON THE TEMPORARY FENCE AT LEAST TWO (2) EQUIDISTANT LOCATIONS TO BE CLEARLY VISIBLE FROM THE LOT. THE SIZE OF EACH SIGN SHALL BE A MINIMUM OF TWO FEET (2') BY TWO FEET (2') AND MUST CONTAIN THE FOLLOWING LANGUAGE:

"WARNING: THIS FENCE SHALL NOT BE REMOVED OR RELOCATED WITHOUT WRITTEN AUTHORIZATION FROM THE PLANNING DIVISION"

LEGEND

- OAKS REMOVED DUE TO ARBORIST RECOMMENDATIONS
- OAKS TO BE REMOVED DUE TO CONSTRUCTION
- NON-PROTECTED TREE TO BE REMOVED

NOT FOR CONSTRUCTION

REVISIONS					
NO.	DESCRIPTION	APPD. ENGR.	DATE	APPD. E.U.	DATE

SCALE:

HORIZ. 1" = 20'

VERT. 1" = N/A

BENCH MARK BM 14-194 EL=173.18 (NAVD 88)

7/8" METAL DISC & RAMSET STAMPED "CO. B.M. 14-194" SET IN CHISELED SQUARE IN TOP ROLL CURB EAST SIDE OF D.I. ON THE SOUTH SIDE OF KINGSWOOD DR. JUST EAST OF CONCRETE BOX CULVERT ON SAN JUAN CREEK APPROX. 0.2 MILE EAST OF SUNRISE BLVD.

COMPUTED	
DESIGNED	SMM
DRAWN	
PROJ. ENGR.	SMM

MORTON & PITALO, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING
Folsom * Sacramento * Fresno
75 Iron Point Circle, suite #120
Folsom, CA 95630
phone: (916) 984-7621
web: www.mpengr.com

GENERAL DEVELOPMENT PLAN

FAIR OAKS SENIOR APARTMENTS

PRELIMINARY TREE REMOVAL AND DEMOLITION PLAN 1

12057 FAIR OAKS BLVD

CITY OF CITRUS HEIGHTS, COUNTY OF SACRAMENTO, CALIFORNIA

DATE 10/11/19

SHEET 1 OF 6

JOB NO. 18-0009-00

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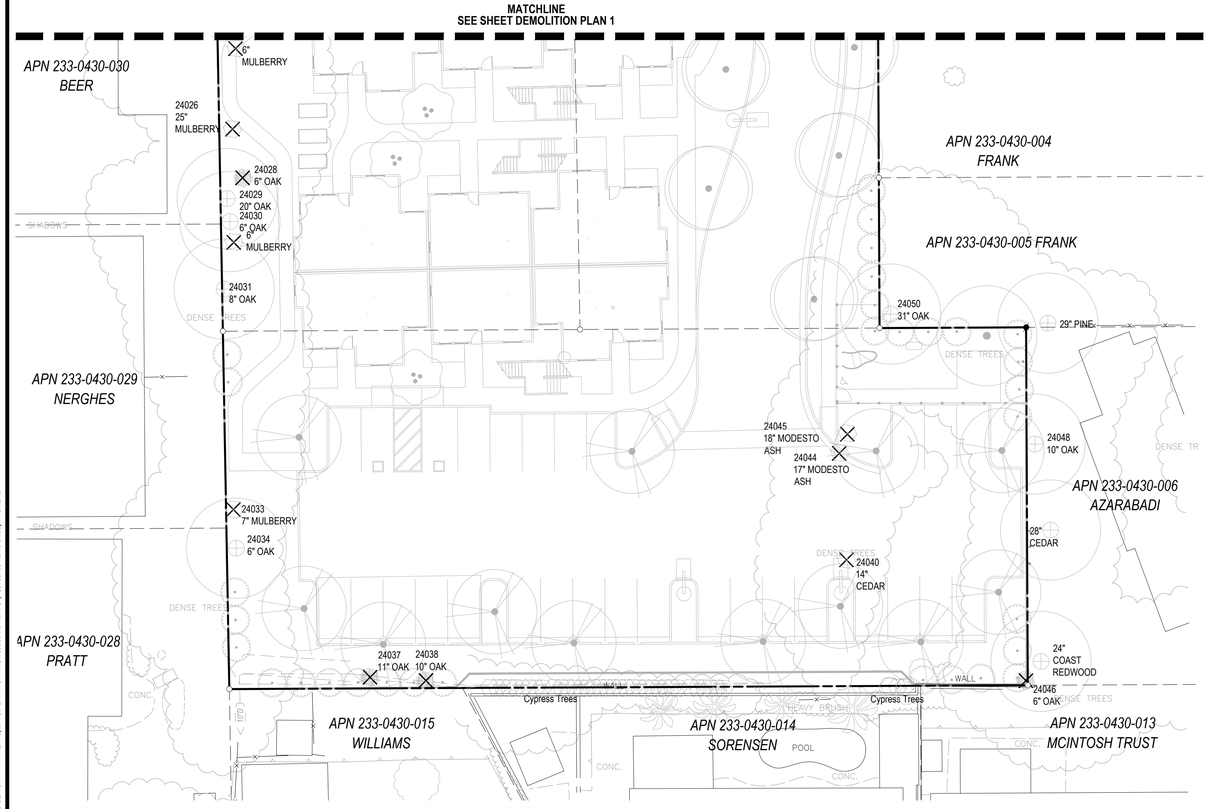
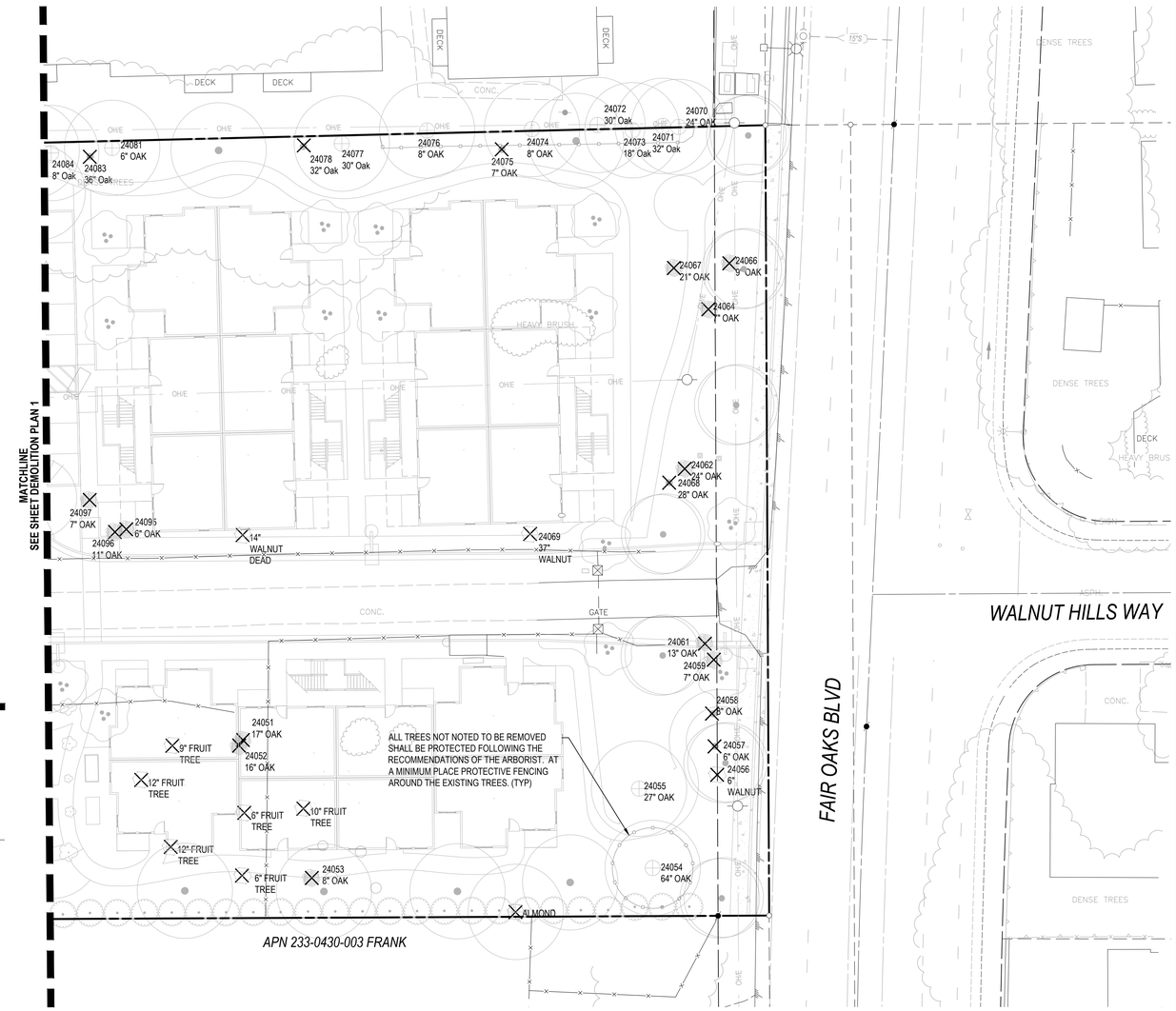
N

GRAPHIC SCALE
20 10 0 20
1 in = 20 ft

LEGEND

- OAKS REMOVED DUE TO ARBORIST RECOMMENDATIONS
- OAKS TO BE REMOVED DUE TO CONSTRUCTION
- NON-PROTECTED TREE TO BE REMOVED





NOT FOR CONSTRUCTION

REVISIONS					
NO.	DESCRIPTION	APPD. ENGR.	DATE	APPD. E.U.	DATE

SCALE:
HORIZ. 1" = 20'
VERT. 1" = N/A

BENCH MARK BM 14-194 EL=173.18 (NAVD 88)
7/8" METAL DISC & RAMSET STAMPED "CO. B.M. 14-194" SET IN CHISELED SQUARE IN TOP ROLL CURB EAST SIDE OF D.I. ON THE SOUTH SIDE OF KINGSWOOD DR. JUST EAST OF CONCRETE BOX CULVERT ON SAN JUAN CREEK APPROX. 0.2 MILE EAST OF SUNRISE BLVD.

COMPUTED
DESIGNED SMM
DRAWN
PROJ. ENGR. SMM

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GENERAL DEVELOPMENT PLAN

FAIR OAKS SENIOR APARTMENTS

PRELIMINARY TREE REMOVAL AND DEMOLITION PLAN 2

12057 FAIR OAKS BLVD

CITY OF CITRUS HEIGHTS, COUNTY OF SACRAMENTO, CALIFORNIA

DATE 10/11/19
SHEET 2
OF 6

JOB NO. 18-0009-00

Dwg: X:\2018\18-0009-00 (FAIR OAKS SENIOR APARTMENTS)\DWG\P-AN\WORKING\18009-PDP.DWG | Saved: 09-12-19 01:35pm SMENL

FAIR OAKS SENIOR APARTMENTS
12057 FAIROAKS BOULEVARD CITRUS HEIGHTS
TREE INVENTORY AND IMPACT ASSESSMENT

TREE #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR	Rating (1-6)	Preser-vation (1-3)	Pro-tected Species	Const Rem	Const Enc	NOTABLE CHARACTERISTICS	MAINTENANCE RECOMMENDATIONS	PERCIEVED IMPACTS	DISPOSITION
24011	Interior Live Oak	*(Quercus wislizeni)*	3,4,6	13	22	Poor to fair	Poor	Poor to fair	Fair	Poor	Fair	4	2	13		1	Suppressed. Out of balance and lying prone on grade to the northeast. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24012	Valley Oak	*(Quercus lobata)*		7	19	Fair	Poor to fair	Fair	Dormant	Poor to fair	Fair	4	2	7		1	Suppressed. Out of balance to the northeast. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24016	Valley Oak	*(Quercus lobata)*		10	17	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	10		1	Above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24017	Interior Live Oak	*(Quercus wislizeni)*		8	16	Fair	Fair	Fair	Fair	Fair	Fair	3	1	8		1	Slightly out of balance to the east. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24019	Interior Live Oak	*(Quercus wislizeni)*		12	21	Fair	Poor to fair	Fair	Fair	Poor to fair	Fair	4	2	12		1	Suppressed. Out of balance and growing at an angle to the southeast. Slightly above average amount of deadwood.	None at this time.	Moderate enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24021	Interior Live Oak	*(Quercus wislizeni)*		13	22	Fair	Fair	Fair	Fair	Fair	Fair	3	1	13		1	Slightly out of balance to the west. Slightly above average amount of deadwood.	None at this time.	Moderate enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24023	Valley Oak	*(Quercus lobata)*		8	17	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	4	1	8		1	Suppressed. Out of balance to the east. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24028	Interior Live Oak	*(Quercus wislizeni)*		6	15	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	1	6	6	1	Suppressed. Out of balance to the southeast. Slightly above average amount of deadwood.	None at this time.	Moderate to significant enc for water quality swale/drain, walkway & perimeter wall construction.	Remove
24029	Interior Live Oak	*(Quercus wislizeni)*		11	20	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	2	11		1	Measured at 1' above grade. Suppressed. Out of balance to the east. Forks 3' above grade. Weak attachments. Slightly above average amount of deadwood.	None at this time.	Moderate enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24030	Blue Oak	*(Quercus douglasii)*		6	8	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	6		1	Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24031	Interior Live Oak	*(Quercus wislizeni)*		8	17	Poor	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	5	2	8		1	Past partial failure of the root system has left the tree growing one-sided at an angle to the southeast. Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24034	Blue Oak	*(Quercus douglasii)*		6	7	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	6		1	Slightly above average amount of deadwood.	None at this time.	Minor enc for water quality swale/drain, walkway & perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24037	Valley Oak	*(Quercus lobata)*		11	22	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	11	11		Slightly above average amount of deadwood.	None at this time.	Significant impacts for bio swale const.	Remove
24038	Valley Oak	*(Quercus lobata)*		10	16	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	10	10		Slightly above average amount of deadwood.	None at this time.	Significant impacts for bio swale const.	Remove

PREPARED BY ACORN ARBORICULTURAL SERVICES, INC. SEPTEMBER 12, 2019

FAIR OAKS SENIOR APARTMENTS
12057 FAIROAKS BOULEVARD CITRUS HEIGHTS
TREE INVENTORY AND IMPACT ASSESSMENT

24046	Interior Live Oak	*(Quercus wislizeni)*		6	14	Fair	Fair	Fair	Fair	Fair	Fair	3	1	6	6		Suppressed. Out of balance to the west. Slightly above average amount of deadwood.	None at this time.	Significant impacts for bio swale const.	Remove
24048	Interior Live Oak	*(Quercus wislizeni)*	4,6	10	15	Fair	Fair	Fair	Fair	Fair	Fair	3	1	10		1	Slightly above average amount of deadwood.	None at this time.	Minor to moderate encroachment for parking lot and landscape planter const.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24050	Blue Oak	*(Quercus douglasii)*		31	30	Fair	Fair	Fair	Dormant	Fair	Fair	3	2	31		1	Located 15' east of the east property line. Above average amount of deadwood. Tag on fence.	None at this time.	Minor to moderate encroachment for parking lot and landscape planter const.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24051	Interior Live Oak	*(Quercus wislizeni)*	4,6,7	17	15	Fair	Fair	Fair	Fair	Fair	Fair	3	1	17	17		Forks approximately 1' above grade. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24052	Interior Live Oak	*(Quercus wislizeni)*	3,4,4,5	16	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	16	16		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24053	Valley Oak	*(Quercus lobata)*		8	13	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	8	8		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24054	Valley Oak	*(Quercus lobata)*	30,34	64	31	Poor to fair	Poor	Poor	Dormant	Poor	Fair	5	3	64		1	Callusing basal lower trunk wounds, various locations. Suspect interior decay. Callusing wound, southwest side, 2'-12' above grade with obvious decay. Excessive end weight.		May require removal pending additional diagnostics. If preserved minor to moderate encroachment for landscape grading and walking path.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24055	Interior Live Oak	*(Quercus wislizeni)*		27	29	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	2	27		1	Measured at 3' above grade. Forks 3'-5' above grade. Inherently weak primary crotch with an exposed seam. Slightly above average amount of deadwood.	None at this time.	Minor to moderate encroachment for landscape grading and walking path.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24056	California Black Walnut	*(Juglans californica)*		6	6	Fair	Fair	Fair	Dormant	Fair	Fair	3	2		6		Slightly above average amount of deadwood.	None at this time.	Minor to moderate encroachment for landscape grading and walking path.	Remove
24057	Valley Oak	*(Quercus lobata)*		6	8	Fair	Poor	Poor to fair	Dormant	Poor	Fair	6	3	0	0		Tree actually grows through a chain-link fence in two locations.	***Recommend removal due to nature and extent of noted defects.***		Remove
24058	Interior Live Oak	*(Quercus wislizeni)*		8	10	Poor to fair	Poor	Fair	Fair	Poor	Fair	6	3	0	0		Embedded chain-link in the lower 3' of the trunk. Other wounding, various locations, with minor decay. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects.***		Remove
24059	Valley Oak	*(Quercus lobata)*		7	9	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	4	2	7	7		Embedded chain-link in the lower trunk.	Cut chain-link.	Grading impacts	Remove
24061	Interior Live Oak	*(Quercus wislizeni)*		13	16	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	2	13	13		Suppressed. Out of balance to the west. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24062	Valley Oak	*(Quercus lobata)*		24	25	Fair	Poor to fair	Fair	Dormant	Fair	Fair	4	2	24	24		Callused lower trunk wound, north side, with possible interior decay. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24064	Interior Live Oak	*(Quercus wislizeni)*		7	10	Poor to fair	Poor to fair	Poor to fair	Poor to fair	Poor to fair	Poor to fair	5	3	7	7		Lower trunk covered in ivy. Out of balance to the east. Above average amount of deadwood. Substantial amount of brown foliage.	None at this time.	Grading impacts	Remove
24066	Blue Oak	*(Quercus douglasii)*		9	16	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	9	9		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove

PREPARED BY ACORN ARBORICULTURAL SERVICES, INC. SEPTEMBER 12, 2019

FAIR OAKS SENIOR APARTMENTS
12057 FAIROAKS BOULEVARD CITRUS HEIGHTS
TREE INVENTORY AND IMPACT ASSESSMENT

24067	Interior Live Oak	*(Quercus wislizeni)*	10,11	21	22	Fair	Fair	Fair	Fair	Fair	Fair	3	1	21	21		Forks at grade with weak attachments. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24068	Interior Live Oak	*(Quercus wislizeni)*		28	30	Poor	Poor	Fair	Fair	Poor	Fair	6	3	0	0		What remains is approximately one-half of a very large tree that has partially failed. Severe decay evident. The measurement was taken 5' above grade. Over 60% of the lower trunk has been compromised.	***Recommend removal due to nature and extent of noted defects.***		Remove
24069	California Black Walnut	*(Juglans californica)*	9,14,14	37	22	Poor to fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	6	3	0	0		Forks from grade to 1.5' above grade. Weak attachments. Defects in the upper canopy. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects.***		Remove
24070	Blue Oak	*(Quercus douglasii)*		24	30	Poor	Poor	Poor to fair	Dormant	Poor	Poor to fair	6	3	0		1	**OFF SITE Tree;** Callusing basal trunk wound, south side, to 2' above grade. Moderate decay. Trunk has an abrupt bend 8' above grade to the east growing horizontal. Recent fracture 18' from the root collar compromised over half of the trunk. Some persistent brown foliage on the ends.	***Recommend removal due to nature and extent of noted defects. The Tree owner should be notified.***	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24071	Blue Oak	*(Quercus douglasii)*		32	33	Poor	Poor	Poor to fair	Dormant	Poor	Fair	6	3	0		1	**OFF SITE Tree**; Callusing basal trunk wound with moderate decay in various locations. Inherently weak primary crotch 8' above grade with inclusions and weak attachments. Scaffold failures in the upper canopy. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects. The Tree owner should be notified.***	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24072	Blue Oak	*(Quercus douglasii)*		30	29	Poor	Poor	Poor to fair	Dormant	Poor	Fair	6	3	0		1	**OFF SITE Tree**; Callusing basal trunk cavity, south side, from grade to 3' above grade. Significant interior decay. Failures of scaffolds in the upper canopy.	***Recommend removal due to nature and extent of noted defects. The Tree owner should be notified.***	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24073	Interior Live Oak	*(Quercus wislizeni)*	3,4,5,6	18	12	Fair	Fair	Fair	Fair	Fair	Fair	3	1	18		1	Forks at grade. Weak attachments. Above average amount of deadwood.	None at this time.	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24074	Interior Live Oak	*(Quercus wislizeni)*		8	15	Fair	Fair	Fair	Fair	Fair	Fair	3	1	8		1	Slightly out of balance to the south. Slightly above average amount of deadwood.	None at this time.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain
24075	Interior Live Oak	*(Quercus wislizeni)*		7	16	Fair	Fair	Fair	Fair	Fair	Fair	3	1	7	7		Slightly above average amount of deadwood.	None at this time.		Remove
24076	Interior Live Oak	*(Quercus wislizeni)*		8	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	8		1	Slightly above average amount of deadwood.	None at this time.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24077	Blue Oak	*(Quercus douglasii)*		30	31	Poor to fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	3	30		1	Weak attachments, over burdened branches.	Prune to reduce excessive weight, evaluate for support system.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.

PREPARED BY ACORN ARBORICULTURAL SERVICES, INC. SEPTEMBER 12, 2019

FAIR OAKS SENIOR APARTMENTS
12057 FAIROAKS BOULEVARD CITRUS HEIGHTS
TREE INVENTORY AND IMPACT ASSESSMENT

24078	Blue Oak	*(Quercus douglasii)*		32	30	Poor to fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	3	32	0		Weak attachments. Severely out of balance to the southwest.	***Recommend removal due to nature and extent of noted defects.***		Remove
24081	Interior Live Oak	*(Quercus wislizeni)*		6	14	Fair	Fair	Fair	Fair	Fair	Fair	3	1	6		1	Slightly above average amount of deadwood.	None at this time.	Minor encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24083	Blue Oak	*(Quercus douglasii)*		35	36	Poor to fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	3	35			Weak attachments with inclusions. Out of balance to the east. Limb cavities with decay.	***Recommend removal due to nature and extent of noted defects.***		Remove
24084	Blue Oak	*(Quercus douglasii)*		8	10	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	2	8		1		None at this time.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24085	Blue Oak	*(Quercus douglasii)*		15	23	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	2	15		1	Out of balance to the north.	Prune to reduce excessive weight.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24086	Blue Oak	*(Quercus douglasii)*		35	36	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	3	35	0		Weak attachments. Overburdened limbs. Sparse foliage.	***Recommend removal due to nature and extent of noted defects.***		Remove
24087	Blue Oak	*(Quercus douglasii)*		14	25	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	2	14		1	Out of balance to the northwest.	Prune to reduce excessive weight.	Minor to moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24088	Interior Live Oak	*(Quercus wislizeni)*		40	35	Poor to fair	Poor	Poor to fair	Fair	Poor	Fair	6	3	0	0		Measured at 2' above grade. Callusing basal lower trunk wounds/cavities, various locations. Moderate to significant decay. Forks 8' above grade into codominant stems, one tending northwest and the other south.	***Recommend removal due to nature and extent of noted defects.***		Remove
24089	Blue Oak	*(Quercus douglasii)*		30	32	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	3	30	0		Out of balance to the south and west. Weak attachments. Sparse foliage.	***Recommend removal due to nature and extent of noted defects.***		Remove
24090	Blue Oak	*(Quercus douglasii)*		26	35	Poor	Poor	Poor to fair	Dormant	Poor to fair	Fair	6	3	0	0		Suppressed. Out of balance to the west. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects.***		Remove
24091	Interior Live Oak	*(Quercus wislizeni)*		50	40	Poor	Poor	Poor to fair	Fair	Poor	Fair	6	3	0	0		Callusing basal lower trunk wounds, various locations. Minor to moderate decay. Out of balance to the south and west. Several failures of scaffolds with resulting decay into the main stem.	***Recommend removal due to nature and extent of noted defects.***		Remove
24092	Interior Live Oak	*(Quercus wislizeni)*		12	17	Fair	Fair	Fair	Fair	Fair	Fair	3	1	12	12		Measured at 3' above grade. Out of balance to the south. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24093	Interior Live Oak	*(Quercus wislizeni)*		6	8	Fair	Fair	Fair	Fair	Fair	Fair	3	1	6	6		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24094	Interior Live Oak	*(Quercus wislizeni)*	3,5,5	13	6	Fair	Fair	Fair	Fair	Fair	Fair	3	1	13	13		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove

PREPARED BY ACORN ARBORICULTURAL SERVICES, INC. SEPTEMBER 12, 2019

FAIR OAKS SENIOR APARTMENTS
12057 FAIROAKS BOULEVARD CITRUS HEIGHTS
TREE INVENTORY AND IMPACT ASSESSMENT

24095	Valley Oak	*(Quercus lobata)*		6	11	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	6	6		Out of balance to the east. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24096	Interior Live Oak	*(Quercus wislizeni)*	5,6	11	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	11	11		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24097	Valley Oak	*(Quercus lobata)*		7	9	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	7	7		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24100-24120	***# Not Used***																			
24121	Interior Live Oak	*(Quercus wislizeni)*		10	12	Fair	Fair	Fair	Fair	Fair	Fair	3	1	10	10		Slightly above average amount of deadwood. Tag on fence.	None at this time.	Grading impacts	Remove
24123	Blue Oak	*(Quercus douglasii)*		19	24	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	4	2	19	19		Suppressed. Out of balance to the east. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24124	Blue Oak	*(Quercus douglasii)*		29	30	Fair	Fair	Poor to fair	Dormant	Poor to fair	Fair	4	2	29	29		Weak attachments. Above average amount of deadwood.	None at this time.	Grading impacts	Remove
24126	Interior Live Oak	*(Quercus wislizeni)*	6,8	14	17	Fair	Fair	Fair	Fair	Fair	Fair	3	1	14	14		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24127	Valley Oak	*(Quercus lobata)*		7	8	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	7	7		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24128	Interior Live Oak	*(Quercus wislizeni)*	6,7,13	26	24	Poor to fair	Poor to fair	Fair	Fair	Poor to fair	Fair	4	3	26	26		Tree grew as an old stump sprout with up to 2' of separation between the bases of the stems. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24129	Interior Live Oak	*(Quercus wislizeni)*		10	12	Fair	Fair	Fair	Fair	Fair	Fair	3	1	10	10		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24131	Interior Live Oak	*(Quercus wislizeni)*		26	30	Poor	Poor	Poor to fair	Fair	Poor	Fair	6	3	0	0		Callusing basal trunk cavity from grade to 4' above grade. Significant decay has left the main stem compromised. Appears as though the tree may be leaning on the garage.	***Recommend removal due to nature and extent of noted defects.***		Remove
24132	Blue Oak	*(Quercus douglasii)*	11,14	25	20	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	3	2	0	0		Out of balance to the west. Slightly above average amount of deadwood. Recent failure of 11" stem.	***Recommend removal due to nature and extent of noted defects.***		Remove
24133	Interior Live Oak	*(Quercus wislizeni)*		30	35	Poor to fair	Poor	Poor to fair	Fair	Poor	Fair	5	3	30	0		Growing at an angle/out of balance to the northeast, over apartment building. Weak attachments. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects.***		Remove
24134	Blue Oak	*(Quercus douglasii)*		30	30	Fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3	3	30		1	Out of balance to the south. Slightly above average amount of deadwood.	Prune to reduce excessive weight and evaluate for a support system.	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24135	Interior Live Oak	*(Quercus wislizeni)*	19,25,36	80	40	Poor to fair	Poor to fair	Fair	Fair	Poor to fair	Fair	5	3	80	0		Callusing basal lower trunk wounds. Moderate to severe decay visible in various locations, with fruiting bodies present. Weak attachments. Above average amount of deadwood. Severe mistletoe canker damage.	***Recommend removal due to nature and extent of noted defects.***		Remove
24136	Blue Oak	*(Quercus douglasii)*	30,36	66	42	Poor	Poor	Poor	Fair	Poor	Fair	6	3	0	0		Measured 3' and 3.5' above grade. Tree was originally codominant, forking 3' above grade, but has failed and lying in two parts. Southerly part is lying prone on grade, and the northerly part is still upright.	***Recommend removal due to nature and extent of noted defects.***		Remove

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FAIR OAKS SENIOR APARTMENTS
12057 FAIROAKS BOULEVARD CITRUS HEIGHTS
TREE INVENTORY AND IMPACT ASSESSMENT

24137	Interior Live Oak	*(Quercus wislizeni)*	6,6	12	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	12		1	Slightly above average amount of deadwood.	None at this time.	Appears to be located off site. Minor encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24139	Interior Live Oak	*(Quercus wislizeni)*	9,12	21	26	Poor to fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3	1	21		1	Chain-link embedded in the lower trunk. Out of balance, one sided to the south. Weak attachments and included bark.	***Recommend removal due to nature and extent of noted defects.***	Appears to be located off site. Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24140	Interior Live Oak	*(Quercus wislizeni)*	5,5	10	25	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	1	10		1	Suppressed. Out of balance to the south. Slightly above average amount of deadwood.	None at this time.	Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24141	Interior Live Oak	*(Quercus wislizeni)*		7	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	7		1	Slightly above average amount of deadwood.	None at this time.	Appears to be located off site. Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24142	Interior Live Oak	*(Quercus wislizeni)*		6	6	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	6	3	0		1	Tree is growing through a chain-link fence with embedded wire. Codominant failure 7' above grade compromised the main stem by 50%. Above average amount of deadwood.	***Recommend removal due to nature and extent of noted defects.***	Appears to be located off site. Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24143	Interior Live Oak	*(Quercus wislizeni)*		11	16	Fair	Fair	Fair	Fair	Fair	Fair	3	1	11		1	Slightly above average amount of deadwood.	None at this time.	Appears to be located off site. Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24144	Interior Live Oak	*(Quercus wislizeni)*		12	23	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	1	12		1	Suppressed. Out of balance to the west. Inherently weak primary crotch with included bark.	None at this time.	Appears to be located off site. Moderate encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24145	Valley Oak	*(Quercus lobata)*		6	17	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	6	6		Suppressed. Out of balance to the south. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24147	Valley Oak	*(Quercus lobata)*	16,17	33	29	Poor to fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	5	2	33		1	Tree is growing against a wooden retaining wall with fill on the west side. Out of balance to the east. Forks 3.5' above grade into codominant stems with included bark in the primary crotch. Slightly above average amount of deadwood.	Prune to clean crown and reduce end weight. Evaluate for a support system.	Moderate to significant encroachment for pad/landscape grading and perimeter wall construction.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24148	Camphor	*(Cinnamomum camphora)*	10,10	20	18	Fair	Fair	Fair	Fair	Fair	Fair	3	2		0		Slightly above average amount of deadwood.		Significant impact for retaining wall & Bio swale construction.	Remove
24149	Valley Oak	*(Quercus lobata)*		11	18	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	11		1	Slightly out of balance to the east. Slightly above average amount of deadwood.	None at this time.		Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.

PREPARED BY ACORN ARBORICULTURAL SERVICES, INC. SEPTEMBER 12, 2019

FAIR OAKS SENIOR APARTMENTS
12057 FAIROAKS BOULEVARD CITRUS HEIGHTS
TREE INVENTORY AND IMPACT ASSESSMENT

24151	Valley Oak	*(Quercus lobata)*		8	10	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	8		1	Slightly above average amount of deadwood.	None at this time.		Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24152	Valley Oak	*(Quercus lobata)*		6	7	Fair	Fair	Fair	Dormant	Fair	Fair	3	1	6		1	Slightly above average amount of deadwood.	None at this time.		Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24154	Black Acacia	*(Acacia melanoxylon)*	10,12	22	19	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	3	0	0		Forks at grade. Weak attachments. Slightly above average amount of deadwood.	None at this time.		Remove
24156	Valley Oak	*(Quercus lobata)*		17	25	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	4	1	17		1	Forks 12' above grade. Inherently weak primary crotch with included bark. Slightly above average amount of deadwood.		Moderate encroachment for grading, drainage, retaining wall and perimeter wall.	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24157	Valley Oak	*(Quercus lobata)*		7	17	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	4	1	7	7		Out of balance to the north. Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24161	Interior Live Oak	*(Quercus wislizeni)*		14	23	Fair	Fair	Fair	Fair	Fair	Fair	3	1	14	14		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24162	Interior Live Oak	*(Quercus wislizeni)*		8	12	Fair	Fair	Fair	Fair	Fair	Fair	3	1	8	8		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24163	Interior Live Oak	*(Quercus wislizeni)*	6,7	13	17	Fair	Fair	Poor to fair	Fair	Fair	Fair	3	1	13	13		Smaller stem has embedded chain-link 3' above grade.	Cut wire.	Grading impacts	Remove
24164	Interior Live Oak	*(Quercus wislizeni)*	7,8	15	15	Fair	Fair	Fair	Fair	Fair	Fair	3	1	15	15		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24165	Interior Live Oak	*(Quercus wislizeni)*	5,6	11	12	Fair	Poor to fair	Poor to fair	Fair	Poor to fair	Fair	4	1	11		1	Embedded chain-link in the lower trunk. Out of balance to the west. Slightly above average amount of deadwood.	Cut wire.	Minor grading impacts	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24167	Interior Live Oak	*(Quercus wislizeni)*	4,8	12	20	Fair	Fair	Fair	Fair	Fair	Fair	3	1	12	12		Slightly above average amount of deadwood.	None at this time.	Grading impacts	Remove
24168	Interior Live Oak	*(Quercus wislizeni)*	3,4,4	11	10	Fair	Fair	Fair	Fair	Fair	Fair	3	1	11		1	Slightly above average amount of deadwood.	None at this time.	Minor grading impacts	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.
24169	Interior Live Oak	*(Quercus wislizeni)*	5,5	10	13	Fair	Fair	Fair	Fair	Fair	Fair	3	1	10		1	Slightly above average amount of deadwood.	None at this time.	Minor grading impacts	Retain - Any grading or excavation to occur within the critical root zone (CRZ) shall be supervised by the project arborist.

TOTAL PROTECTED, INVENTORIED TREES = 95 trees (1,652 aggregate diameter inches)
TOTAL RECOMMENDED REMOVALS = 23 trees (504 aggregate diameter inches)
TOTAL CONSTRUCTION REMOVALS = 36 trees (413 aggregate diameter inches)
Rating (1-6, where 6 is remove): 1=0 trees; 2=0 trees; 3=48 trees; 4=19 trees; 5=13 trees; 6=13 trees
Suitability for Preservation (1-3, where 3 is remove): 1=50 trees; 2=19 trees; 3=24 trees

PREPARED BY ACORN ARBORICULTURAL SERVICES, INC. SEPTEMBER 12, 2019

NOT FOR CONSTRUCTION

REVISIONS NO.	DESCRIPTION	APPD. ENGR.	DATE	APPD. E.U.	DATE
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SCALE:
HORIZ. 1" = 20'
VERT. 1" = N/A

BENCH MARK BM 14-194 EL=173.18 (NAVD 88)
7/8" METAL DISC & RAMSET STAMPED "CO. B.M. 14-194" SET IN CHISELED SQUARE IN TOP ROLL CURB EAST SIDE OF D.I. ON THE SOUTH SIDE OF KINGSWOOD DR. JUST EAST OF CONCRETE BOX CULVERT ON SAN JUAN CREEK APPROX. 0.2 MILE EAST OF SUNRISE BLVD.

COMPUTED
DESIGNED SMM
DRAWN
PROJ. ENGR. SMM

MORTON & PITALO, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING
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GENERAL DEVELOPMENT PLAN
FAIR OAKS SENIOR APARTMENTS
PRELIMINARY TREE SURVEY DATA TABLE
12057 FAIR OAKS BLVD
CITY OF CITRUS HEIGHTS, COUNTY OF SACRAMENTO, CALIFORNIA

DATE 10/11/19
SHEET 3
OF 6

JOB NO. 18-0009-00

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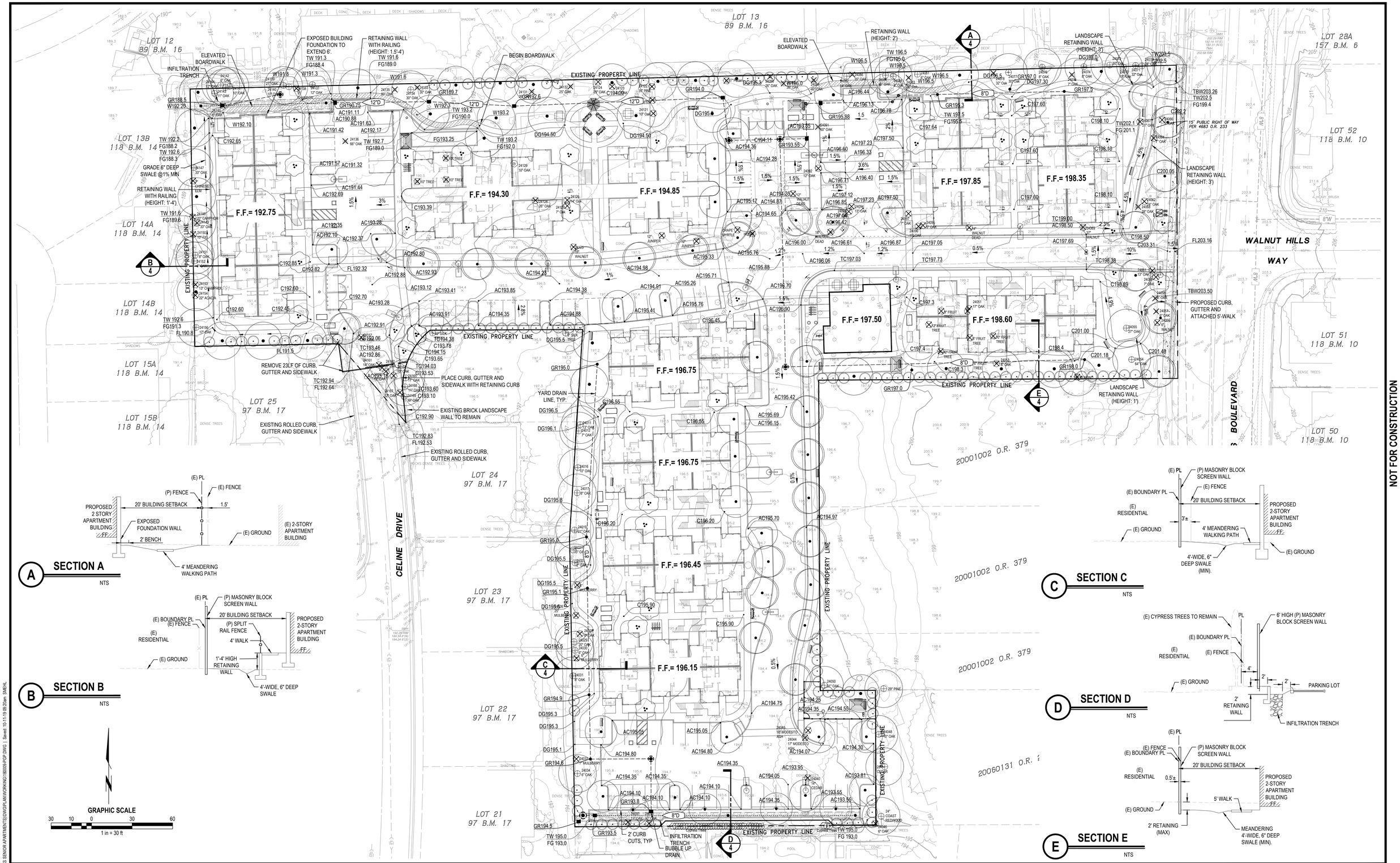

NOT FOR CONSTRUCTION

REVISIONS NO.	DESCRIPTION	APPD. ENGR.	DATE	APPD. E.U.	DATE
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SCALE:
HORIZ. 1" = 30'
VERT. 1" = N/A

BENCH MARK BM 14-194 EL=173.18 (NAVD 88)
7/8" METAL DISC & RAMSET STAMPED "CO. B.M. 14-194" SET IN CHISELED SQUARE IN TOP ROLL CURB EAST SIDE OF D.I. ON THE SOUTH SIDE OF KINGSWOOD DR. JUST EAST OF CONCRETE BOX CULVERT ON SAN JUAN CREEK APPROX. 0.2 MILE EAST OF SUNRISE BLVD.

COMPUTED
DESIGNED SMM
DRAWN
PROJ. ENGR. SMM

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GENERAL DEVELOPMENT PLAN

FAIR OAKS SENIOR APARTMENTS

PRELIMINARY GRADING PLAN

12057 FAIR OAKS BLVD

CITY OF CITRUS HEIGHTS, COUNTY OF SACRAMENTO, CALIFORNIA

DATE 10/11/19
SHEET 4
OF 6

JOB NO. 18-0009-00

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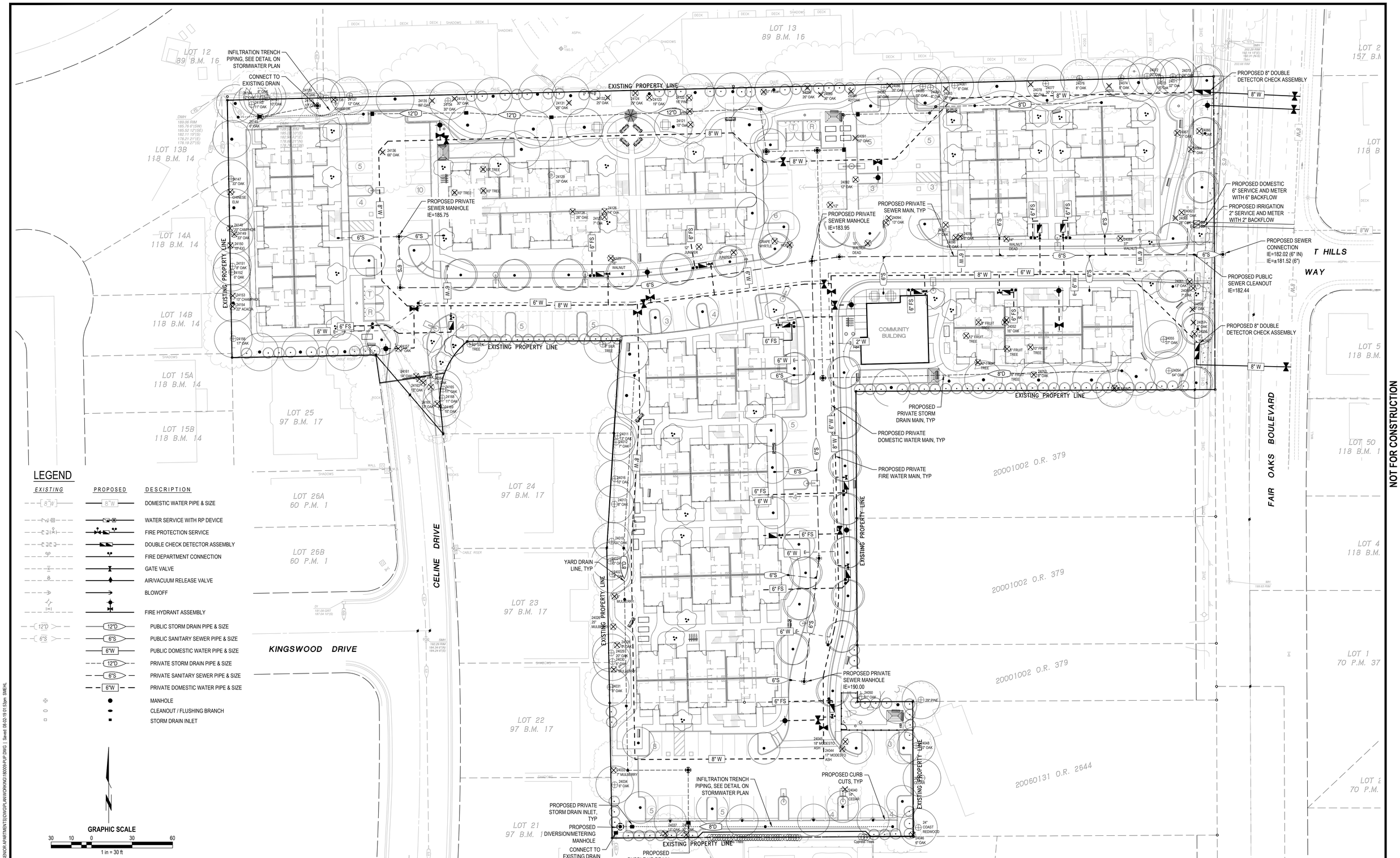

NOT FOR CONSTRUCTION

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REVISIONS NO.	DESCRIPTION	APPD. ENGR.	DATE	APPD. E.U.	DATE
△					
△					
△					
△					
△					

SCALE:
HORIZ. 1" = 30'
VERT. 1" = N/A

BENCH MARK BM 14-194 EL=173.18 (NAVD 88)
7/8" METAL DISC & RAMSET STAMPED "CO. B.M. 14-194" SET IN CHISELED SQUARE IN TOP ROLL CURB EAST SIDE OF D.I. ON THE SOUTH SIDE OF KINGSWOOD DR. JUST EAST OF CONCRETE BOX CULVERT ON SAN JUAN CREEK APPROX. 0.2 MILE EAST OF SUNRISE BLVD.

COMPUTED
DESIGNED SMM
DRAWN
PROJ. ENGR. SMM

MORTON & PITALO, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING
Folsom ∗ Sacramento ∗ Fresno
75 Iron Point Circle, suite #120
Folsom, CA 95630
phone: (916) 984-7621
web: www.mpengr.com

GENERAL DEVELOPMENT PLAN

FAIR OAKS SENIOR APARTMENTS

PRELIMINARY UTILITY PLAN

12057 FAIR OAKS BLVD

CITY OF CITRUS HEIGHTS, COUNTY OF SACRAMENTO, CALIFORNIA

DATE 10/11/19
SHEET 5
OF 6

JOB NO. 18-0009-00

NORTH INFILTRATION TRENCH 4.5'
GRAVEL LAYER (12" +3.3' Dmax)
MINIMUM AREA = 884 SF

NORTH SHED A=3.34 AC
NORTH SHED WQ ASSUMPTIONS:
DISCONNECTED ROOF DRAINS
40 TREES (20 EVERGREEN, 20 DECIDUOUS)
MINIMUM AMENDED SOIL AREA=13,900 SF (1' DEEP)

15' PUBLIC RIGHT OF WAY
PER 4683 O.R. 233

ONSITE RUNOFF
SHED AREA = 2500 SF

SOUTH SHED A=1.678 AC
SOUTH SHED WQ ASSUMPTIONS:
DISCONNECTED ROOF DRAINS
40 TREES (20 EVERGREEN, 20 DECIDUOUS)
MINIMUM AMENDED SOIL AREA=8,700 SF (1' DEEP)

SOUTH INFILTRATION TRENCH
4.3' GRAVEL LAYER (12" +3.3' Dmax)
MINIMUM AREA = 813 SF

LOT 13
89 B.M. 16

LOT 12
B.M. 16

LOT 25
97 B.M. 17

LOT 26A
60 P.M. 1

LOT 26B
60 P.M. 1

LOT 24
97 B.M. 17

LOT 23
97 B.M. 17

LOT 22
97 B.M. 17

LOT 21
97 B.M. 17

20001002 O.R. 379

20060131 O.R. 2644

WALNUT HILLS WAY

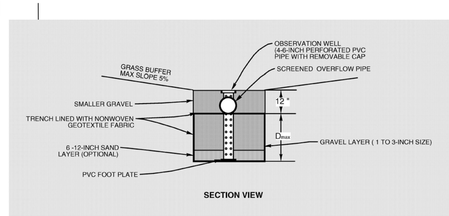
FAIR OAKS BOULEVARD

CELINE DRIVE

KINGSWOOD DRIVE

GRAPHIC SCALE
30 10 0 30 60
1 in = 30 ft

NOT FOR CONSTRUCTION



INFILTRATION TRENCH DETAIL

REVISIONS NO.	DESCRIPTION	APPD. ENGR.	DATE	APPD. E.U.	DATE
△					
△					
△					
△					
△					

SCALE:
HORIZ. 1" = 30'
VERT. 1" = N/A

BENCH MARK BM 14-194 EL=173.18 (NAVD 88)
7/8" METAL DISC & RAMSET STAMPED "CO. B.M. 14-194" SET IN CHISELED SQUARE IN TOP ROLL CURB EAST SIDE OF D.I. ON THE SOUTH SIDE OF KINGSWOOD DR. JUST EAST OF CONCRETE BOX CULVERT ON SAN JUAN CREEK APPROX. 0.2 MILE EAST OF SUNRISE BLVD.

COMPUTED	
DESIGNED	SMM
DRAWN	
PROJ. ENGR.	SMM

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GENERAL DEVELOPMENT PLAN

FAIR OAKS SENIOR APARTMENTS

PRELIMINARY STORMWATER CONTROL PLAN

12057 FAIR OAKS BLVD

CITY OF CITRUS HEIGHTS, COUNTY OF SACRAMENTO, CALIFORNIA

DATE 10/11/19
SHEET 6
OF 6

JOB NO. 18-0009-00

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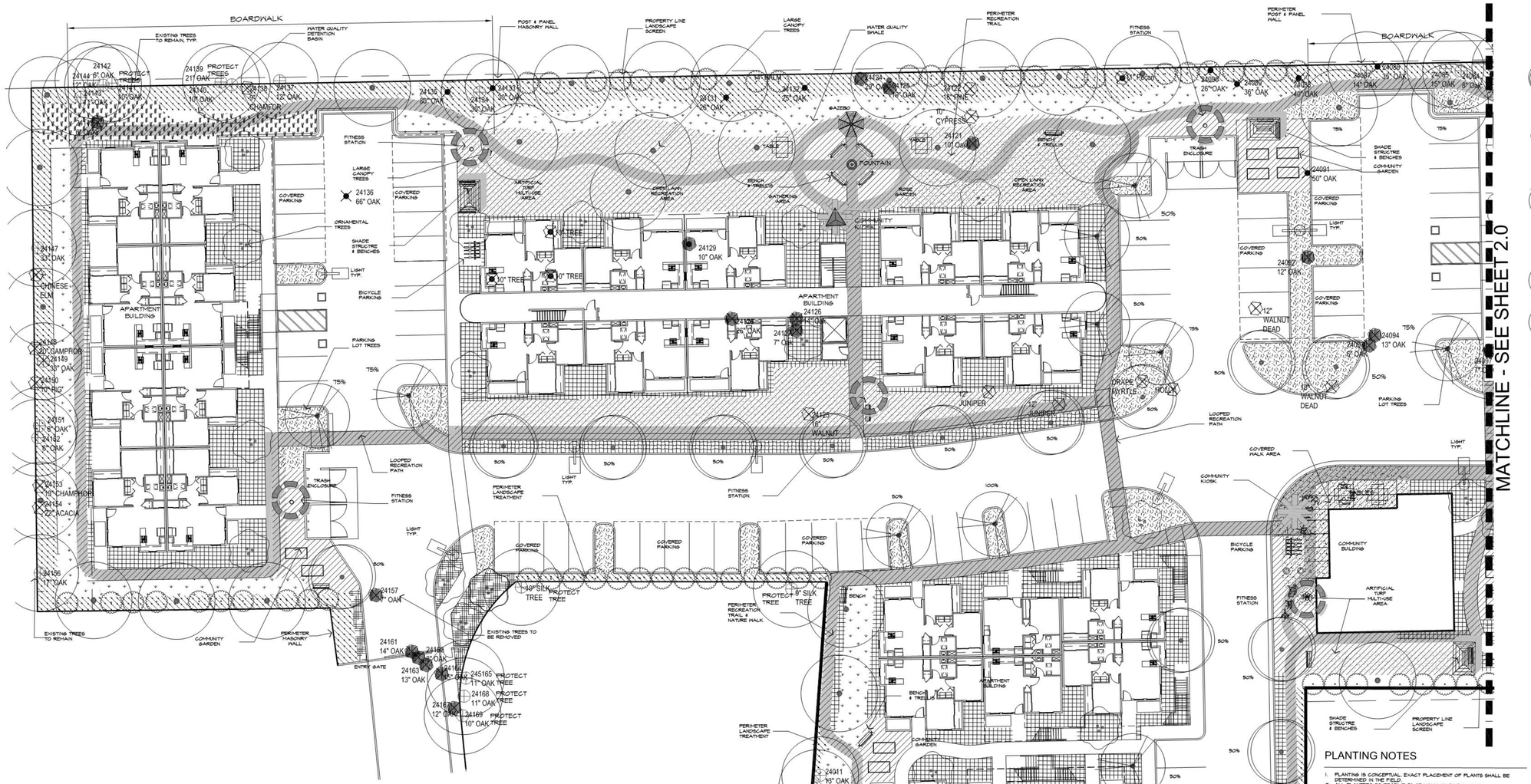


NOTES:
1. SEE SHEET 2.0 FOR SHADE AND WATER USE CALCULATIONS.

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION	QTY
	POST & PANEL PERIMETER MASONRY WALL	524 lf

SYMBOL	DESCRIPTION	QTY
	COMMUNITY KIOSK	3
	FITNESS STATIONS - Exercise, Stretching, Strength and Conditioning	7
	SHADE STRUCTRE	4
	TABLES	6

SYMBOL	SITE FURNISHINGS DESCRIPTION	QTY
	BENCH	30
	FOUNTAIN	2
	GAZEBO	1
	TRELLIS	11

SYMBOL	DESCRIPTION	QTY
	RECREATIONAL AREA: Areas for passive and active recreation or leisure such as but not limited to: Trails/Nature Walk, Seating/Viewing/Gathering Areas, Community Garden, Rose Garden, Dog Park, Putting Green, Horseshoes, Bocce Ball Court	33,328 sf

CONCEPT PLANT SCHEDULE

STREET TREES
MIX OF DROUGHT TOLLERANT EVERGREEN AND DECIDIOUS TREES AT 40' O.C.
LARGE TREES SHALL COMPLY WITH MINIMUM SOIL VOLUME REQUIREMENTS FO 500 CF OF UNCOMPACTED SOILS WITHIN THE TREE CANOPY.

Quercus agrifolia / Coast Live Oak	15 gal
Quercus wislizenii / Interior Live Oak	15 gal

ORNAMENTAL TREES
MIX OF MODERATE WATER USE EVERGREEN AND DECIDIOUS ORNAMENTAL TREES AS FOCAL POINTS
SMALL TREES SHALL COMPY WITH THE MINIMUM SOIL VOLUME REQUIREMENTS OF 60 CF OF UNCOMPACTED SOIL WITHIN THE TREE CANOPY.

Cercis occidentalis / Western Redbud Multi-trunk	24"box
Cotinus coggygria 'Velvet Cloak' / Velvet Cloak Smoke Tree	24"box
Lagerstroemia indica 'Watermelon Red' / Watermelon Red Crape Myrtle Multi-Trunk	24"box

PARKING LOT TREES
MIX OF MODERATE WATER USE EVERGREEN AND DECIDIOUS TREES
LARGE TREES SHALL COMPLY WITH MINIMUM SOIL VOLUME REQUIREMENTS FO 500 CF OF UNCOMPACTED SOILS WITHIN THE TREE CANOPY.

Acer buergerianum / Trident Maple	15 gal
Carpinus betulus / European Hornbeam	15 gal
Fraxinus uhdei / Shamel Ash	15 gal
Pistacia chinensis 'Keith Davey' / Keith Davey Chinese Pistache	15 gal
Pyrus calleryana 'Capital' / Capital Callery Pear	15 gal
Tilia cordata / Littleleaf Linden	15 gal

LARGE CANOPY TREES
MIX OF DROUGHT TOLLERANT EVERGREEN AND DECIDIOUS TREES
LARGE TREES SHALL COMPLY WITH MINIMUM SOIL VOLUME REQUIREMENTS FO 500 CF OF UNCOMPACTED SOILS WITHIN THE TREE CANOPY.

Platanus racemosa / California Sycamore	15 gal
Quercus lobata / Valley Oak	15 gal
Quercus wislizenii / Interior Live Oak	15 gal

EXISTING TREES TO RUMAIN
SEE ARBORIST REPORT
-

OAKS REMOVED DUE TO ARBORIST RECOMMENDATIONS
SEE ARBORIST REPORT
-

OAKS TO BE REMOVED DUE TO CONSTRUCTION
SEE ARBORIST REPORT
-

NON-PROTECTED TREE TO BE REMOVED
SEE ARBORIST REPORT
-

PERIMETER LANDSCAPE SCREEN
MIX OF LARGE DROUGHT TOLLERANT EVERGREEN SCREENING SHRUBS

Heteromeles arbutifolia 'Davis Gold' / Toyon	15 gal
Prunus carolniana / Carolina Laurel Cherry	15 gal
Xylosma japonicum	15 gal

ENTRY TREATMENT
MIX OF DROUGHT TOLLERANT GRASSES AND EVERGREEN SHRUBS
MAXIMUM HEIGHT OF 36" MIXED IN WITH ORNAMENTAL TREES

Agapanthus inapertus / Lily Of The Nile	1 gal
Carex oshimensis 'Evergold' / Variegated Japanese Sedge	1 Gal
Festuca glauca 'Elijah Blue' / Blue Fescue	1 Gal
Jasminum mesnyi / Chinese Jasmine	5 gal
Juniperus chinensis 'Old Gold' / Old Gold Juniper	5 gal
Perovskia x 'Little Spire' / Russian Sage	1 gal
Tulbaghia violacea / Society Garlic	1 gal

PERIMETER LANDSCAPE
MIX OF MEDIUM - LARGE DROUGHT TOLLERANT EVERGREEN SHRUBS IN GROUPINGS BETWEEN TREES

Berberis nevinii / Nevin Mahonia	1 gal
Dodonaea viscosa 'Purpurea' / Purple Hopseed Bush	5 gal
Ficus pumila / Creeping Fig	5 gal
Jasminum mesnyi / Chinese Jasmine	5 gal
Jasminum nudiflorum / Winter Jasmine	5 gal
Macfadyena unguis-cati / Yellow Trumpet Vine	5 gal

STREETSCAPE
MIX OF DROUGHT VINES, TOLLERANT GRASSES AND SCREENING EVERGREEN SHRUBS MINIMUM HEIGHT 36":

Callistemon viminalis 'Little John' / Dwarf Bottlebrush	5 gal
Dietes bicolor / Fortnight Lily	5 gal
Helictotrichon sempervirens / Blue Oat Grass	1 gal
Macfadyena unguis-cati / Yellow Trumpet Vine	5 gal
Myoporum parvifolium 'Burgundy Carpet' / Trailing Myoporum	1 Gal
Rhaphiolepis umbellata 'Minor' / Yedda Hawthorn	5 gal
Rosmarinus officinalis 'Irene' TM / Irene Trailing Rosemary	1 gal
Symphoricarpos albus / Common White Snowberry	5 gal

PARKING LOT LANDSCAPE

Agapanthus inapertus / Lily Of The Nile	1 gal
Muhlenbergia capillaris 'Regal Mist' TM / Muhly	5 gal
Nandina domestica 'Blush Pink' / Heavenly Bamboo	5 gal
Nandina domestica 'Fire Power' / Firepower Nandina	5 gal
Pittosporum umbellatum / Hackeee	5 gal
Rhaphiolepis umbellata 'Minor' / Dwarf Yedda Hawthorne Standard	5 gal
Tulbaghia violacea / Society Garlic	1 gal

INTERIOR LANDSCAPE

Abelia x grandiflora 'Edward Goucher' / Glossy Abelia	5 gal
Berberis thunbergii 'Rose Glow' / Rosy Glow Barberry	1 gal
Choisya ternata / Mexican Orange	5 gal
Coleonema pulchrum 'Sunset Gold' / Golden Breath Of Heaven	5 gal
Dietes bicolor 'Moraea' / Fortnight Lily	1 gal
Fatsia japonica 'Spiders Web' / Speckled Japanese Fatsia	5 gal
Hemerocallis x 'Stella de Oro' / Stella de Oro Daylily	1 gal
Liriope gigantea / Giant Liriope	1 gal
Muhlenbergia rigens / Deer Grass	5 gal
Myrtus communis 'Variegata' / Variegated Myrtle	5 gal
Rosmarinus officinalis 'Collingwood Ingram' / Rosemary	1 gal
Salvia greggii 'Hot Lips' / Autumn Sage	5 gal
Sarcococca ruscifolia / Fragrant Sarcococca	5 gal
Viburnum davidii / David Viburnum	1 gal

WATER QUALITY SWALE
CALIFORNIA NATIVE BIO-SWALE MIX

Carex barberae / Santa Barbara Sedge	1 Gal
Carex divulsa / Berkeley Sedge	1 Gal
Carex oshimensis 'Everest' / Everest Japanese Sedge	1 Gal
Carex oshimensis 'Evergold' / Variegated Japanese Sedge	1 Gal
Carex praegracilis / Slender Sedge	1 Gal
Festuca californica / California Fescue	1 Gal
Festuca glauca / Blue Fescue	1 Gal
Festuca idahoensis / Idaho Fescue	1 Gal
Festuca occidentalis 'Mokelumne' / Western Mokelumne Fescue Grass	1 Gal
Juncus balticus / Baltic Rush	1 Gal
Juncus effusus / Soft Rush	1 Gal
Juncus tenuis / Poverty Rush	1 Gal
Turf Hydroseed Biofiltration Mix / California Native Biofiltration Hydroseed	Hydroseed
Turf Hydroseed Native No Mow / California Native No Mow Hydroseed	Hydroseed

LAWN AREAS

Turf Sod Bolero Plus / Fescue blend	sod

BIO-RETENTION BASIN

Turf Hydroseed Biofiltration Mix / California Native Biofiltration Hydroseed	Hydroseed
Turf Hydroseed Native No Mow / California Native No Mow Hydroseed	Hydroseed

PLANTING NOTES

1. PLANTING IS CONCEPTUAL. EXACT PLACEMENT OF PLANTS SHALL BE DETERMINED IN THE FIELD.
2. ALL PLANTERS TO RECEIVE 3" OF MULCH ON BARK MULCH.
3. ALL LANDSCAPE TO CONFORM TO THE CITY OF CITRUS HEIGHTS AND STATE WATER EFFICIENCY STANDARDS.
4. PLANT MATERIAL WATER USAGE TO COMPLY WITH HYDROZIS IV.
5. THE IRRIGATION SYSTEM IS TO BE A FULLY AUTOMATIC UNDERGROUND SYSTEM AND COMPLY WITH THE CITY OF CITRUS HEIGHTS AND STATE WATER EFFICIENCY STANDARDS.
6. ALL PROPOSED TREES SHALL COMPLY WITH MINIMUM SOIL VOLUME REQUIREMENTS: LARGE TREES 500 CF, MEDIUM TREES 300 CF AND SMALL TREES 60 CF OF UNCOMPACTED SOILS WITHIN TREE CANOPY.
7. THE FINAL LANDSCAPE PLANS WILL BE REQUIRED PRIOR TO BUILDING PERMIT ISSUANCE THAT DOCUMENT COMPLIANCE WITH ALL LANDSCAPE STANDARDS.
8. EXISTING OAKS TO REMAIN TO BE PROTECTED DURNING DEMOLITION AND CONSTRUCTION.
4. EXISTING TOP SOIL TO BE STOCK PILED FOR USE IN PLANTING.

STUDIO C
LANDSCAPE ARCHITECTURE & PLANNING
PO BOX 270557
SACRAMENTO, CA 95827
(PH) 916-868-2854

0 30 60 90 feet
SCALE: 1" = 30'

CITRUS HEIGHTS APARTMENTS
12057 FAIR OAKS BLVD.

PRELIMINARY LANDSCAPE PLAN

NOT FOR CONSTRUCTION
THESE PLANS HAVE NOT BEEN APPROVED BY THE GOVERNING AGENCY AND ARE SUBJECT TO CHANGE.

LICENSED LANDSCAPE ARCHITECT
LYLE B. CAMPBELL
Signature
March 7, 2017
Renewal Date
April 1, 2019
Date
STATE OF CALIFORNIA
PRELIMINARY

PROJECT #: SC0300
DATE: SEPT 9, 2019
EXHIBIT: 1.0

Water Efficient Landscape Worksheet for:

Citrus Heights Apartments

Prepared For: Client
Date: February 20, 2019
Prepared by: Lyle Campbell

Reference Evapotranspiration (Eto) 50.5

Hydrozone # / Planting Description [a]	Plant Factor (PF)	Irrigation Method [b]	Irrigation Efficiency (IE) [c]	ETAF (PF/IE)	Landscape Area (SF)	ETAF x Area	Estimate Total Water Use (ETWU) [e]
Regular Landscape Areas							
Street Trees - Low	0.2	Bubblers	0.81	0.25	528	130.37	4,081.90
Ornamental Trees - Moderate	0.4	Bubblers	0.81	0.32	679	220.00	6,886.07
Parking Lot Trees - Moderate	0.4	Bubblers	0.81	0.32	480	158.76	4,970.78
Large Canopy Trees - Low	0.2	Bubblers	0.81	0.25	278	68.64	2,149.18
Perimeter LS Screen - Moderate	0.4	Bubblers	0.81	0.32	3864	1251.94	39,198.12
Entry Treatement - Moderate	0.4	Drip	0.81	0.32	1552	502.85	15,744.17
Parimeter Landscape - Low	0.2	Drip	0.81	0.16	11083	1795.45	56,215.41
Streetscape - Low	0.2	Rotators	0.75	0.27	1703	454.13	14,218.91
Parking Lot Landscape - Low	0.2	Drip	0.81	0.25	5492	1358.05	42,457.91
Interior Landscape - Moderate	0.4	Drip	0.81	0.49	23998	11850.86	371,050.58
Water Quality Swale - Moderate	0.4	Rotators	0.75	0.53	8993	4796.27	150,171.11
Bio-Retention Basin - Low	0.2	Rotators	0.75	0.16	4134	620.10	19,415.33
Lawn Areas - High	1	Rotators	0.75	0.75	10956	8217.00	257,274.27
				Totals	73750	31422.41	
Special Landscape Areas							
				1		0.00	0.00
				Totals	0	0.00	0.00
						ETWU Total	983,838.72
						Maximum Allowed Water Allowance (MAWA) [e]	983,852.94

[a] Hydrozone #/Planting Description
E.g. 1 - front lawn
2 - low water use plantings
3 - medium water use planting

[b] Irrigation Method
overhead spray or drip

[c] Irrigation Efficiency
0.75 for spray head
0.81 for drip

[d] ETWU (Annual Gallons Required) =
Eto x 0.62 x ETAF x Area
where 0.62 is a factor which converts acre-inches per acre year gallons per square foot per year

[e] MAWA (Annual Gallons Required) =
(Eto) (0.62) [(ETAF x LA) + ((1-ETAF) x SLA)]
where 0.62 is a factor which converts acre-inches per acre year gallons per square foot per year. LA is total landscape area in square feet. SLA is the total special landscape is the area in

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	31,422.41
Total Area	73,750.00
Average ETAF	**0.43**

All Landscape Areas

Total ETAF x Area	31,422.41
Total Area	73,750.00
Site wide ETAF	**0.43**

Average ETAF for Regular Landscape Areas must be .55 or below for residential areas and .45 or below for non-residential areas.

PRELIMINARY SHADE CALCULATIONS
30'-35' DIAMETER TREES

TREE NAME	100% = 962 SF			75% = 721 SF			50% = 481 SF			25% = 240 SF		
	TREES	VALUE	TOTAL	TREES	VALUE	TOTAL	TREES	VALUE	TOTAL	TREES	VALUE	TOTAL
See Plant Schedule	3	962	2,886	9	721	6,489	39	481	18,759	0	240	0
TOTAL			2,886			6,489			18,759			-
TOTAL SHADE AREA VALUE			28,134									
TOTAL PARKING AREA			51,610									
PERCENT SHADE REQUIRED			50%									
PERCENT SHADE PROVIDED:			55%									

TREE_MITIGATION_SCHEDULE_6"+

TREE TYPE	# OF IN. REMOVED	# OF MITIGATE IN ON-SITE	REMAINING TO BE MITIGATED
QUERCUS DOUGLASII BLUE OAK	57"	56 (14-48" BOX) STREET TREES	1"
QUERCUS LOBATA VALLEY OAK	93"	92 (13-48" BOX) STREET TREES	1"
QUERCUS WISLIZENI INTERIOR LIVE OAK	270"	200 (32-48" BOX) LARGE CANOPY TREES	70"
TOTAL:	420"		

NOTES:
1. NO ACTIVITY SHALL BE PERFORMED WITHIN THE CRITICAL ROOT ZONE OF ANY PROTECTED TREE WITHOUT THE PROJECT ARBORIST OR CITY ARBORIST APPROVAL.

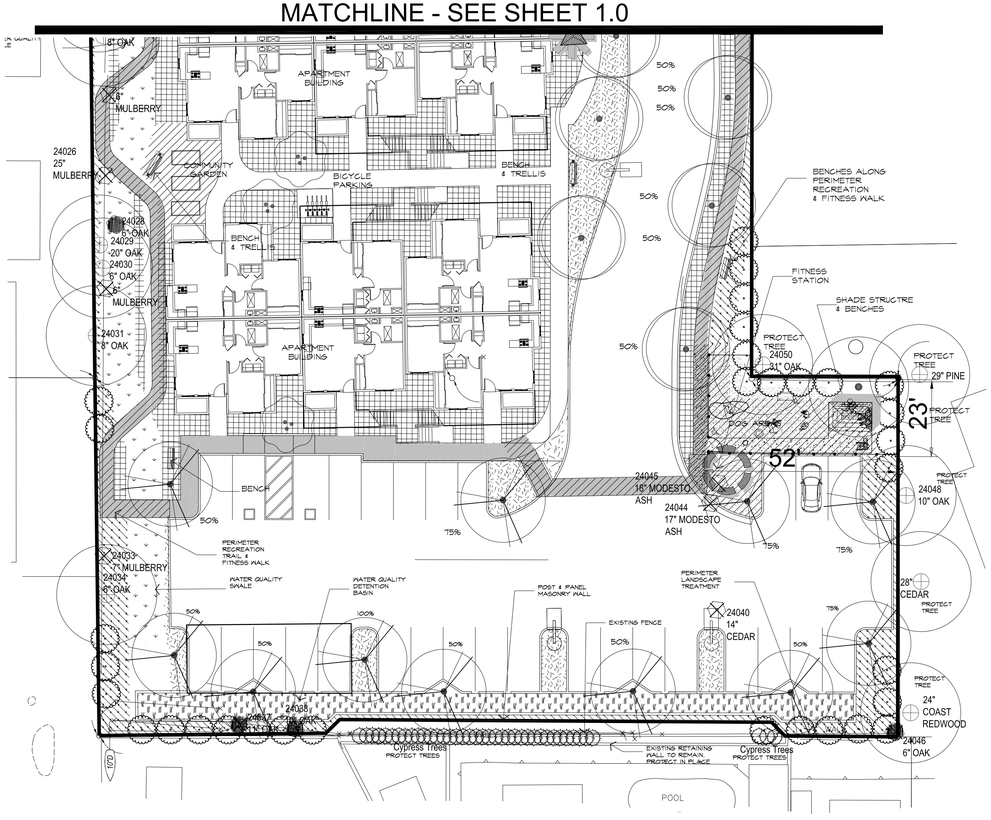
2. ANY EXCAVATION (GRADING OR TRENCHING) WITHIN THE CRITICAL ROOT ZONE AREA OF A PROTECTED TREE MAY REQUIRED SPECIAL MEASURES OR PROCEDURES INCLUDING, HAND DIGGING, PNEUMATIC EXCAVATION (AIR SPADE/AIR KNIFE) OR HYDROVAC EXCAVATION IN ORDER TO PRESERVE ROOTS.

3. IN FILL SITUATIONS OR IN AREAS WHERE HARDSCAPE WILL BE INSTALLED, PIPED AERATION SYSTEMS, STRUCTURAL SOILS AND/OR PERMEABLE CONCRETE MAY BE REQUIRED.

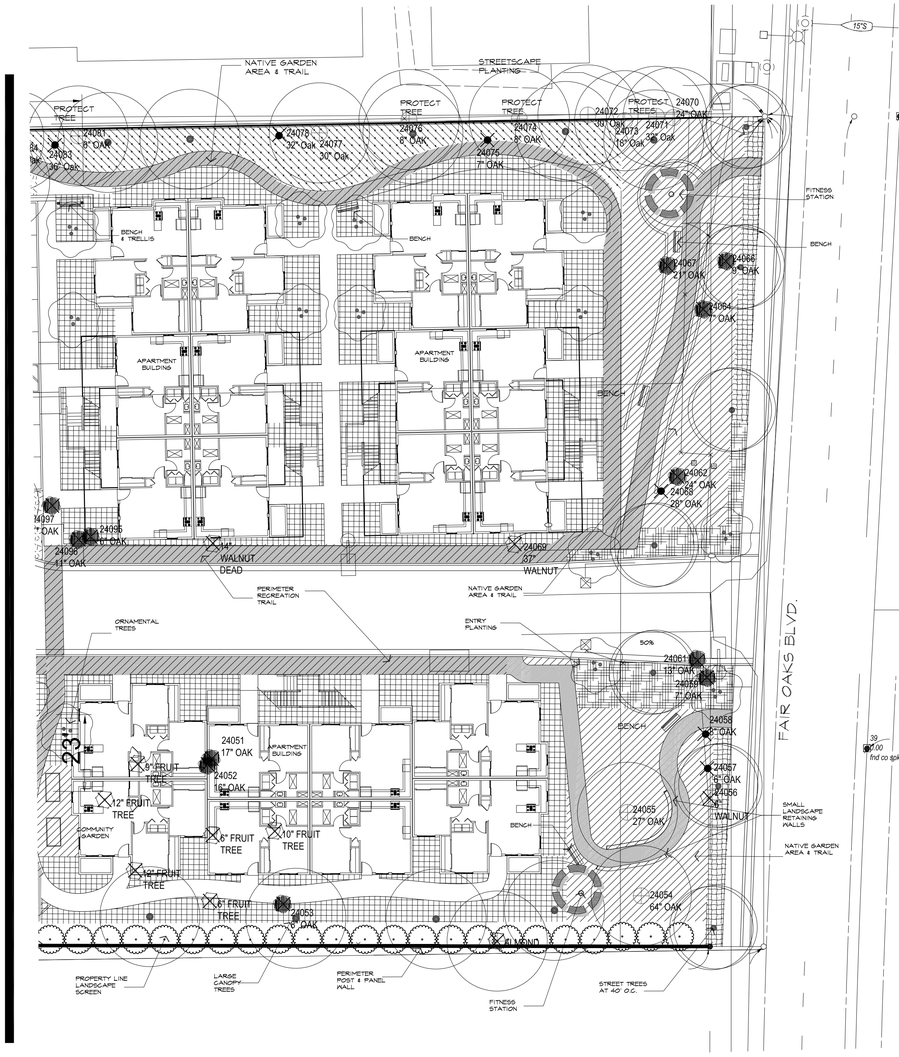
4. SPECIAL FOUNDATION FOOTING FOR BUILDINGS OR MASONRY WALL BE REQUIRED WITHIN THE CRITICAL ROOT ZONE AREA.

5. ALL ITEMS AS DIRECTED BY THE PROJECT ARBORIST.

MATCHLINE - SEE SHEET 1.0



MATCHLINE - SEE SHEET 1.0



STUDIO C
LANDSCAPE ARCHITECTURE & PLANNING
PO BOX 270557
SACRAMENTO, CA 95827
(PH) 916-868-2854

0 30 60 90 feet
SCALE: 1" = 30'

CITRUS HEIGHTS APARTMENTS
12057 FAIR OAKS BLVD.

PRELIMINARY LANDSCAPE PLAN

NOT FOR CONSTRUCTION
THESE PLANS HAVE NOT BEEN APPROVED BY THE GOVERNING AGENCY AND ARE SUBJECT TO CHANGE.

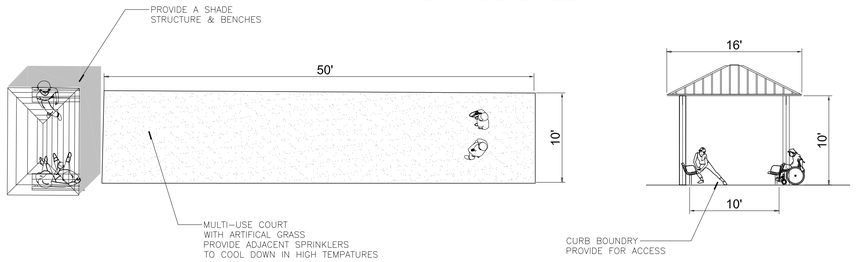
LICENSED LANDSCAPE ARCHITECT
LYLE D. CAMPBELL
STATE OF CALIFORNIA
Revision Date
Oct 14, 2019
Date

PROJECT #: SC0300
DATE: OCT 14, 2019
EXHIBIT: 2.0

MULTI-PURPOSE COURTS

MULTI-PURPOSE COURTS PROVIDE FOR THE OPPORTUNITY TO ENGAGE IN MANY DIFFERENT GAMES RATHER THAN PROVIDING SINGLE USE COURTS. LOCATE IN A SHADED AREA AND ADJACENT TO THE TRAIL SYSTEM.

BOCCE BALL

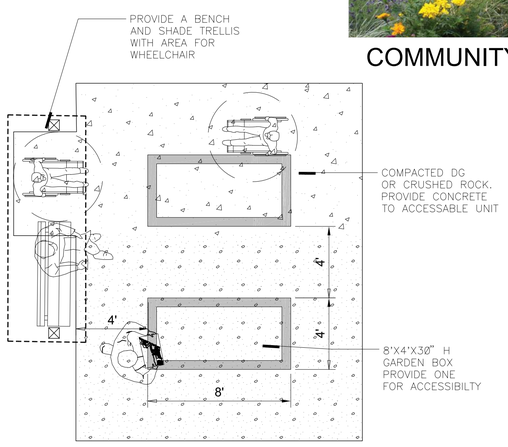


CROQUET

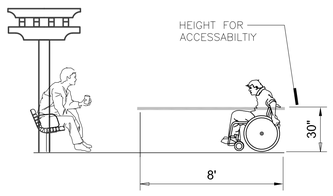
HORSESHOES

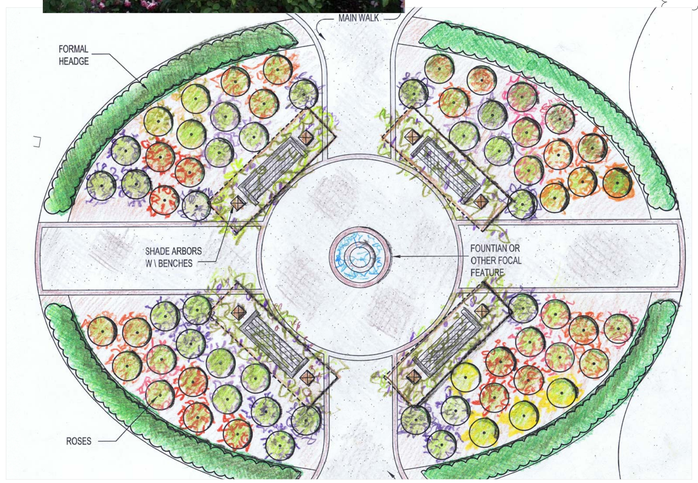
COMMUNITY GARDENS

COMMUNITY GARDENS ARE LOCATED THROUGHOUT THE COMPLEX. EACH HAS RAISED GARDEN BOXES FOR MOBILITY/ACCESSIBILITY AND INCLUDES A BENCH WITH TRELLIS

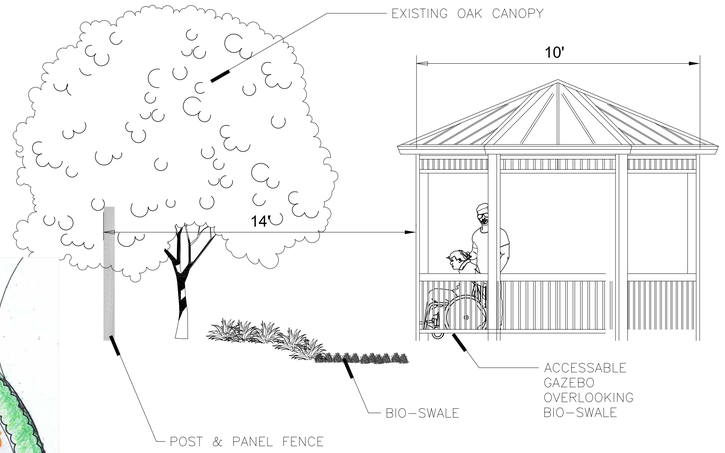


COMMUNITY GARDENS





ROSE GARDEN



ROSE GARDEN

THE ROSE GARDEN IS A MAJOR SOCIAL GATHERING SPACE WITH A ACCESSIBLE GAZEBO, THREE-TIERED FOUNTAIN, AND BENCHES WITH SHADE TRELLIS,

POST & PANEL MASONRY WALL

A POST & PANEL MASONRY WALL HAS LESS IMPACT ON TREE ROOT ZONES VS A TRADITIONAL MASONRY WALL. POSTS ARE 5'-8' APART AND THE PANEL SLIPS INTO THE POST.

STUDIO C
LANDSCAPE ARCHITECTURE & PLANNING
PO BOX 270557
SACRAMENTO, CA 95827
(PH) 916-868-2854

RECREATION AREAS

CITRUS HEIGHTS APARTMENTS
12057 FAIR OAKS BLVD.

NOT FOR CONSTRUCTION

THESE PLANS HAVE NOT BEEN APPROVED BY THE GOVERNING AGENCY AND ARE SUBJECT TO CHANGE.

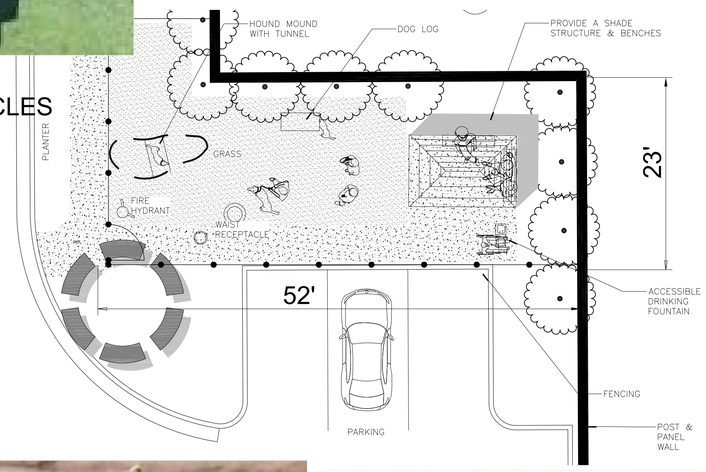
LICENSED LANDSCAPE ARCHITECT
LYLE D CAMPBELL
Renewal Date
Sept 9, 2019
Date
STATE OF CALIFORNIA

PROJECT #: SC0300
DATE: SEPT 9, 2019
EXHIBIT: 3.0

DOG AREA

AN AREA FOR SMALL DOGS INCLUDING A SHADE STRUCTURE WITH WASTE RECEPTACLES, BENCHES, FENCED PERIMETER, GRASS, INTERACTIVE PLAY AND ACCESSIBLE DRINKING FOUNTAIN

WASTE RECEPTACLES



DOG PLAY

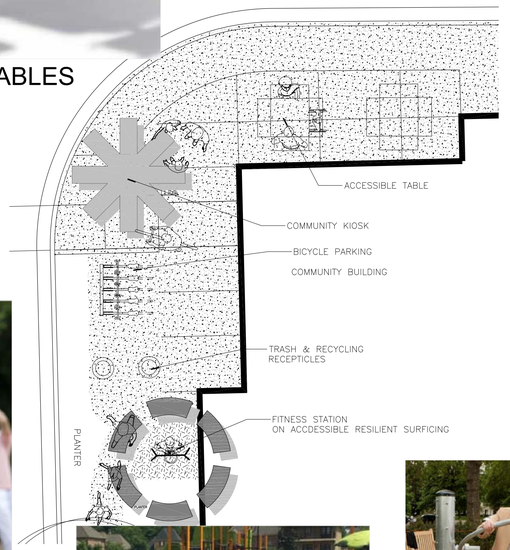
FENCING

BOARDWALK

ACCESSIBLE DRINKING FOUNTAIN

ACCESSIBLE TABLES

GROUP FITNESS



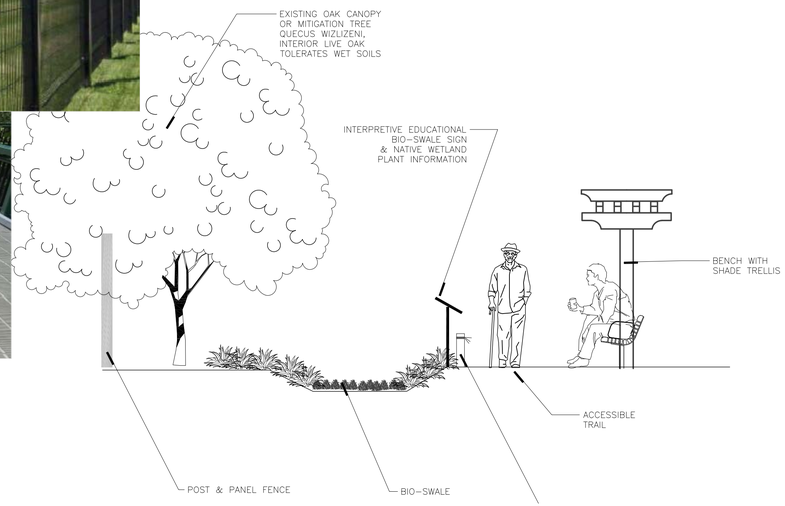
RESILIENT SURFACING

GATHERING AREAS

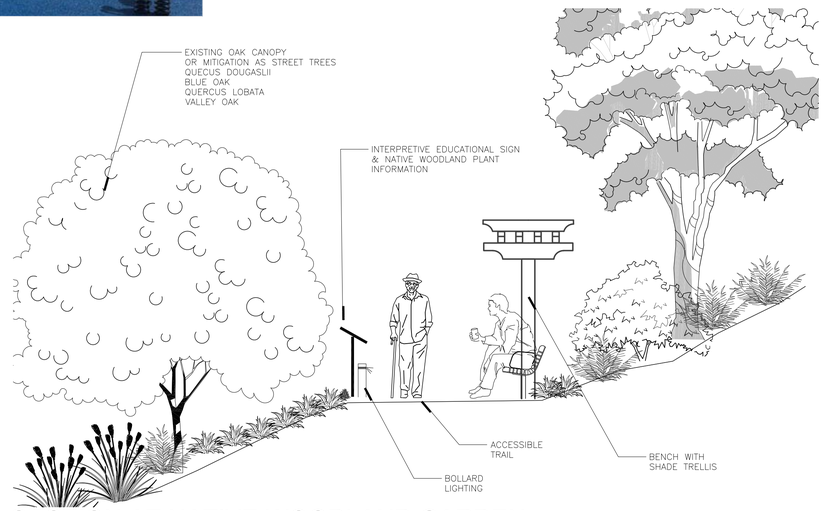
GATHERING AREAS ARE LOCATED THROUGHOUT THE SITE AND PROVIDE OPPORTUNITY FOR SOCIAL INTERACTION: PATIO AT COMMUNITY BUILDING, ROSE GARDEN, DOG AREA, COMMUNITY GARDEN, FITNESS STATIONS, ETC

PRIVATE PATIOS

FITNESS STATION



SECTION AT BIO-SWALES, VARIES AT SITE



SECTION AT NATIVE WOODLAND GARDEN

STUDIO C
LANDSCAPE ARCHITECTURE & PLANNING
PO BOX 270557
SACRAMENTO, CA 95827
(PH) 916-868-2854

CITRUS HEIGHTS APARTMENTS
12057 FAIR OAKS BLVD.

NOT FOR CONSTRUCTION

THESE PLANS HAVE NOT BEEN APPROVED BY THE GOVERNING AGENCY AND ARE SUBJECT TO CHANGE.

TRAILS

THE TRAILS SERVE AS A CONNECTION THROUGHOUT THE COMMUNITY.

LICENSED LANDSCAPE ARCHITECT
LYLE P. CAMPBELL No. 4217
STATE OF CALIFORNIA
Renewal Date
Sept 9, 2019
Date

PROJECT #: SC0300
DATE: SEPT 9, 2019
EXHIBIT: 4.0

C R A I G M I E R S + G E O R G E S C O T T A R C H I T E C T S
llp

MEMO

TO:
Casey Kempenaar, Senior Planner
City of Citrus Heights
6360 Fountain Square Drive
Citrus Heights, CA 95621

DATE:
June 19, 2019

RE: Senior Apts – Fair Oaks – Citrus Heights
M+S JOB NO: 8.448 1.13

Parking Comparison:

The Stamas Corporation operates and manages the following two Senior Apartment Complexes to provide a comparative parking need based on the City of Citrus Heights – Off Street Parking criteria. This analysis is to be used for the request of less than required parking for the proposed Fair Oaks Citrus Heights Senior Apartment Facility. The survey occurred over several days at these existing facilities and the highest count of 'used/occupied' parking was used.

Facility	# of Apts.	Parking Required per CH	Highest Count (% of required) (1)
Villa Serena Apartments: 101 Villa Serena Cir, Rocklin	236	260	180 (69.2%)
Veranda Apartments: 8160 Power Inn Road, Sacramento	180	198	148 (74.7%)

The requested reduction of Citrus Heights Parking Standards for this project is 88.4%.

BY: ***Craig Miers, AIA***

(1) number provided by apartment mangers

Kempenaar, Casey

From: Barbara Sorensen <b-sorensen@sbcglobal.net>
Sent: Monday, January 14, 2019 12:04 PM
To: Kempenaar, Casey
Subject: 12057 Fair Oaks Blvd Proposed Development

Mr. Kempenaar,

We are the homeowners of the property located at 5636 Gitta Ria Ct Citrus Heights 95610 and are writing to express our concern on the development of property behind our house, 12057 Fair Oaks Blvd, Citrus Heights.

We obtained a preliminary proposed site plan in May which indicates there will be approximately 110 apartments built. Here are our concerns:

1. This is a rural area with single family dwellings, we believe the site should have single family homes not apartments.

2. Our entire back yard backs up on the proposed site. We are concerned about noise, traffic and privacy. My understanding is there would be a 10 foot set back from our property line. We would request that be increased to 15 feet.

3. The plan shows garbage dumpsters directly behind our property. We would request the location of the dumpster be moved as we are concerned about rats, animals, smell, large garbage trucks and all other issues related to dumpsters. In addition, there appears to only be 2 dumpsters for the entire development which does not seem adequate. We would request review of adding additional dumpsters and locate them away from existing home owners.

4. We would like to know the plan for fencing i.e. type, height etc.

5. We are very concerned about this development as it will effect our home value, quality of life and safety and are not in favor of this development.

We appreciate your attention to our concerns and look forward to further communication.
Best,

Tom & Barbara Sorensen
5636 Gitta Ria Ct
Citrus Heights, CA 95610
707-290-8226
b-Sorensen@sbcglobal.net

From:	Jodi Ash
To:	Kempenaar, Casey
Cc:	Ramsay, Karen
Subject:	Senior Apartments 12057 Fair Oaks Blvd
Date:	Tuesday, December 4, 2018 4:57:43 PM

Hi Casey

Following up on our conversation from yesterday

This project at 12057 Fair Oaks Blvd was discussed by the Area 11 Board of Directors. There is a fair amount of concern.
The neighbors right around the property, including one of our BOD members are in the process of preparing a letter opposing the project.

If this project is going to be presented to the Citrus Heights Planning Commission we would like to be informed so that we may attend.

I will keep you in the loop

Thank you,

Jodi Ash
C 21 Select Real Estate Inc.
7919 Pebble Beach Drive, Suite 101
Citrus Heights, CA 95610

916 223 8138
916 536 4238

BRE # 00971897

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The information contained in this communication from the sender is confidential. It is intended for the sole use by the receipient and others authorized to receive it. If you are not the receipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohitited and may be unlawful.

Kempenaar, Casey

From: Stan Frank <stan@hcbuilders.com>
Sent: Wednesday, January 2, 2019 12:36 PM
To: Kempenaar, Casey
Subject: RE: 12057 Fair Oaks rezone and development

Mr. Casey Kempenaar: I am in receipt of your email dated 12/18/18. My response is twofold. First, although the Stamas's are developing at this time I am not. However, it would be prudent to take into consideration that their design should accommodate the future zoning and development of my properties being the same zoning as they are requesting, RD20. This, of course, is smart planning as both owners' properties are presently zoned the same and should remain being zoned the same. It would be a mistake to design multiple accesses onto Fair Oaks Blvd given both owners having similar zoning densities. Essentially, we have a difference about market conditions as I don't think is an opportune time to develop at this time in the real estate cycle and they may think it is.

Therefore, secondly, given the above, the Stamas design needs to be reconfigured to meet BOTH property owners development needs by adjusting their plan to have one access road onto Fair Oaks Blvd. which is contiguous to both properties. It's the only planning that makes sense.

Thanks, Stan Frank

From: Kempenaar, Casey <ckempenaar@citrusheights.net>
Sent: Tuesday, December 18, 2018 9:24 AM
To: 'Stan Frank' <stan@hcbuilders.com>
Subject: RE: 12057 Fair Oaks rezone and development

Hello Mr. Frank:

We have received your comments and will take them into consideration. We have provided your letter to the project applicant for their consideration as well.

The City's Zoning Code requires that any Rezone application be considered in conjunction with a proposed development project. As a result, the City cannot process a rezone on your property without an affiliated development application.

We recommend that you work with the adjacent property owner to submit a joint application if you are interested in rezoning your property. The project Manager, Sam Stamas can be reached at 916-783-0330.

Thanks,

Casey Kempenaar
Senior Planner
ckempenaar@citrusheights.net
6360 Fountain Square Dr. | Citrus Heights, CA
(916) 727-4740 | www.citrusheights.net

From: Stan Frank <stan@hcbuilders.com>
Sent: Friday, December 14, 2018 7:54 AM

To: Kempenaar, Casey <ckempenaar@citrusheights.net>
Subject: 12057 Fair Oaks rezone and development

Mr. Kempenaar, are you in receipt of my letter to you? I am waiting for your response.

Thank you,

Stan Frank
Project Manager

11760 Atwood Rd. #2
Auburn, CA 95603
530-305-7908 cell
530-885-8085 office
530-885-8985 fax

December 6, 2018

Casey Kempenaar, AICP
City Of Citrus Heights
6360 Fountain Square Dr.
Citrus Heights, CA 95621-5634

Mr. Kempenaar:

This letter is in regard to the proposed zoning change from RD10 to RD20 and consequent planned development of a large apartment complex which will be located at 12057 Fair Oaks Blvd., Citrus Heights, CA. The proposed zoning change and development will trigger major economic and development impacts of my three parcels 233-0430-003, 233-0430-004, and 233-0430-005 located directly on Fair Oaks Blvd., are contiguous to the proposed development, and subsequently will force changing the zoning and development path for my properties.

First, let me mention that I have been a Citrus Heights resident for 38 years, since 1980. I presently live just down the street from the properties described above at 5527 Sequoia Circle, Citrus Heights, CA 95610 and have for the last four years. Before that I live at the duplex (which will be torn down to accommodate the future development of the property) located on my three parcels discussed above with the address 12023 Fair Oaks Blvd. I lived there for approximately 12 years. I have also own another property located at 8116-8118 Holly Dr., Citrus Heights for the last 15 years and am presently subdividing it into two parcels.

The reason I purchased the Fair Oaks properties last Century was because of the development potential. In fact, at one time I had a 10 lot tentative map approved for 10 houses which expired, and then just last year I talked to Alison about new zoning for a higher density so I could build apartments and she said the City of Citrus Heights would be against it and that the City wanted to bring back the old 10 lot subdivision with a fully dedicated road off Fair Oaks Blvd.

As it turns out and after looking at the proposed development at 12057, the developer is proposing an access street off of Fair Oaks Blvd. which would be extremely close to the proposed access street off Fair Oaks Blvd. for my talked about 10 lot subdivision. This is not a desirable situation and I feel poor planning, not at all compatible with both properties being developed in conjunction with each other.

It should be mentioned that the land for the proposed development and my land were originally designated the same zoning RD10, and, of course, the original planners had it correct. The whole block of land should definitely be homogonous zoning. Don't you think spot zoning is analogous to poor planning, especially in this case?

I want to mention that the developers that are proposing this huge development offered to purchase my land for $50,000. They know that my parcels are critical to the development of their proposed project but wanted to purchase only if they could "steal" the property. Any normal soul could look at the parcel maps and know that my property should be included in this new zoning proposal which would result in compatible developments. In fact, my parcels have half of the street frontage on Fair Oaks Blvd. making them much more amenable to higher density zoning.

We now have all property owners in the picture and have the opportunity to work out an agreement which will facilitate well-matched developments. Obviously, with the proposed zoning change of the 12067 property from RD10 to RD20 and gigantic apartment complex being proposed would significantly negatively affect my property remaining at the existing RD10 zoning and planning a 10 lot house subdivision with an access road extremely close to the access road off Fair Oaks Blvd. for the apartment complex is not at all an enviable end result. Plus, a tiny slew of houses on a busy street and surrounded by a large apartment complex would not be attractive nor advantageous to the community and could end up as a blighted area.

The proper solution to this situation is to rezone my three parcels to RD20 automatically by the City of Citrus Heights if they approve the zoning change and large planned apartment complex for the 12057 Fair Oaks Blvd. property. The access road off Fair Oaks Blvd. should be fully dedicated and almost entirely located on the 12057 property based on the number of units the road will serve as compared to both developments, however, still contiguous to my three parcels so that my parcels are accessed with the same road when developed with additional apartment units allowed by the City of Citrus Heights automatic rezoning of my parcels to RD20.

Another thing that needs to be mentioned is that the development proposal shows that my properties are zoned RD4, which is not the case. They are zoned RD 10, all three parcels.

I feel that we can work this entire situation out by having the developer of the 12057 Fair Oaks property reconfigure his apartments to accommodate moving the road to the most logical access off Fair Oaks Blvd. to service all the parcels involved and the City of Citrus Heights automatically rezone my three parcels to the new homogonous zoning for that block of land to RD20 without bringing in legal counsel.

Please feel free to contact me anytime regarding anything with regard to this situation and I wait for your favorable reply to these changes for the above mentioned properties.

Thank you,

Stan Frank

October 14, 2019

Casey Kempenaar

Sir:

My letter is in regard to the proposed project at 12057 Fair Oaks Blvd. I have reviewed the plans for this project, and am concerned about the placement of trash dumpsters. I live at 5706 Celine Dr., and the proposed location of them is just north of Celine Dr. dead end. I would request that placement of said dumpsters be elsewhere in the complex due to the noise they will generate when trash trucks make their pick-ups in early mornings. I can hear the trucks that make pick-ups from the apartments on Sunrise East and Sunrise Vista. By placing the dumpster at the dead end of Celine Dr., the trash trucks will access the gate next to my house, and will negatively affect the value of my property. This proposed gate is mainly for emergency vehicle access, but will be used for trash truck access as well. Mr. Hans Engle and I will be negatively affected by the noise generated by trash pick-ups. I've lived at my current location for 17 years, Mr. Engle for much longer.

Respectfully,

Tom Balash

Tom Balash

FOG302FPD@YAHOO.COM