GENERAL PLAN CONFORMANCE REVIEW

1442 Murchison Avenue Project

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ACP	Asbestos cement pipe
Applicant	MLC Holdings, Inc.
APNs	Assessor's Parcel Numbers
BMPs	Best Management Practices
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
City	City of Pomona
County	Los Angeles County
DOC	California Department of Conservation
DTSC	Department of Toxic Substances Control
du/ac	Dwelling unit per acre
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
HOA	Homeowner's association
I-10	Interstate 10
MERV	Minimum Efficiency Reporting Value
NOx	Oxides of nitrogen
PDFs	Project design features
SB	Senate Bill
STC	Sound Transmission Class
SWPPP	Stormwater Pollution Prevention Plan
VCP	Vitrified clay pipe

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1 Introduction

1.1 Overview

MLC Holdings, Inc. (the applicant) is proposing the redevelopment of the project site located at 1442 Murchison Avenue to construct 152 new townhomes on site. The proposed project is required to undergo an environmental review pursuant to the California Environmental Quality Act (CEQA). This document provides the necessary documentation for compliance with CEQA. Pursuant to State CEQA Guidelines Section 15183, this document demonstrates the proposed project's ability to implement the goals and policies of the City's General Plan, and therefore, exempts the project from additional environmental review under CEQA. In order for the City to determine whether CEQA Guidelines Section 15183 may be used, the City must complete a General Plan Conformance Review to identify and determine the consistency of the proposed project with the goals and policies outlined in the City's General Plan.

The project site is in eastern Los Angeles County, within the municipal boundaries of the City of Pomona. The 7.47-acre project site is located relatively in the northwestern portion of the city adjacent to the south of Interstate 10. Although currently vacant, the project site previously contained multi-family residential structures which were removed from the property in the late twentieth century. Visible remnants of which include former streets, sidewalks, and other signs of modern development.

1.2 Summary of the Proposed Project

The proposed project includes the development of a 7.47-acre site with 152 new three-story attached townhomes (20 dwelling units per acre [du/ac]) and associated on-site and off-site improvements. The project site is designated as Urban Neighborhood and Activity Center by the City of Pomona's General Plan, and is also designated with Transect Zones T4-A and T5, which allow for a maximum of 70 du/ac and 80 du/ac, respectively (City of Pomona 2020; City of Pomona 2014). However, the project site is zoned C-4 Commercial Highway which does not permit the development of residential uses (City of Pomona 2010).

The adoption of Senate Bill (SB) 330, the Housing Crisis Act of 2019, does not require a housing development to be rezoned if the property is consistent with the objective general plan standards and criteria. Government Code Section 65589.5(j)(4) states "a proposed housing development project is not inconsistent with the applicable zoning standards and criteria, and shall not require a rezoning, if the housing development project is consistent with the objective general plan standards and criteria but the zoning for the project site is inconsistent with the general plan." The project site is zoned C-4 Commercial Highway which does not permit the development of residential uses, however, the project site is designated as General Plan Place Type Urban Neighborhood, which contemplates residential uses, General Plan Place Type Activity Center, which contemplates parks and other similar uses, as well as Transect Zones T4-A and T5, which allow residential densities of up to 70 dwelling units per acre and 80 dwelling units per acre, respectively (City of Pomona 2010; City of Pomona 2014). Therefore, a Change of Zone is not be required

because the proposed project demonstrates consistency with the project site's General Plan Place Type and Transect Zone designations.

In addition, Government Code Section 65589.5(j)(4) states a local agency (i.e., the City of Pomona) may require the proposed project to comply with the zoning regulations consistent with the City's General Plan. The zoning designation that is applicable to the City's Urban Neighborhood General Plan land use designation is R-3 Medium Density Multiple-family district (City of Pomona 2010). As such, the proposed project is required to comply with the zoning regulations for the R-3 district. However, the R-3 district limits building height to 35 feet or two floors while the designated land use transects of T4-A and T5 allow building heights up to four floors and six floors, respectively. In this case, the objective height standards of the General Plan shall prevail, and a building height variance shall not be required to allow the proposed three-story townhomes.

The following list of entitlements is required for project implementation:

- A Tentative Map shall be required for subdivision purposes.
- A Conditional Use Permit shall be required per the Supplemental Use Overlay district standards for the erection of new structures.
- A Major Oak Tree Permit shall be required for the removal of one or more oak trees.

1.3 California Environmental Quality Act Compliance

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. As such, the proposed project constitutes a project as defined by CEQA (California Public Resources Code Section 21000 et seq.). State CEQA Guidelines Section 15367 states that a "Lead Agency" is "the public agency which has the principal responsibility for carrying out or approving a project." Therefore, the City of Pomona (City) is the lead agency responsible for compliance with CEQA for the proposed project.

In 2014, the City of Pomona adopted an update to its general plan entitled *Pomona Tomorrow*. The General Plan Update was the first comprehensive update of the City's General Plan since 1976 and establishes the community's vision for the development of the city through the year 2035. The General Plan Update provides comprehensive land use, housing, circulation and infrastructure, public service, resource conservation and public safety policies for the entire city. As part of the 2014 General Plan Update, the City of Pomona certified the Environmental Impact Report (EIR) for the General Plan Update, Corridors Specific Plan, Active Transportation Plan and Green Plan (State Clearinghouse No. 2012051025).

According to State CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan, General Plan, or Zoning), "projects which are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific

significant effects which are peculiar to the project or its site. This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies." The applicant proposes the development of a 7.47-acre site with 152 three-story attached townhomes (20 du/ac) and associated on-site and off-site improvements on land designated as Urban Neighborhood and Activity Center by the City's General Plan.

The City's General Plan Update (*Pomona Tomorrow*) is comprised of seven components: Land Use & Density, Economic Development, Open Space Network, Mobility & Access, Conservation, Community Design, and Noise & Safety. Each of these components contains a set of goals and policies that must be adhered to by all discretionary development projects. The General Plan's goals and policies are outlined in Chapter 8, Implementation.

As mentioned above, the City of Pomona certified the City of Pomona General Plan Update (*Pomona Tomorrow*), Corridors Specific Plan, Active Transportation Plan and Green Plan EIR (State Clearinghouse No. 2012051025) in March of 2014. Below are the mitigation measures within the EIR applicable to the proposed project. As shown, these mitigation measures identified changes to the General Plan's goals and policies to reduce potentially significant and adverse environmental effects.

MM BIO-1 Amend Policy 7E.P10 as follows (new text added during the Final EIR shown in *italics*): Conduct presence/absence biological surveys for sensitive plant and animal species *during the appropriate time of year and time of day* in natural areas prior to any construction activities proposed adjacent to or within natural areas. If no special-status species are detected during these surveys, then construction-related activities may proceed. If listed special-status species are found within the construction zone, then avoid these species and their habitat or consult with U.S. Fish and Wildlife Service and/or California Department of Fish and Game *Wildlife* prior to the commencement of construction.

MM BIO-2 Add the following policy to the General Plan Update: *Conduct nesting bird surveys prior to any construction activities, including projects proposed to remove/disturb native and ornamental landscaping and other nesting habitat for native birds during bird breeding season from March 1 through August 31 (as early as January 1 for some raptors). If no nesting birds are detected during these surveys, then construction related activities may proceed. Active nests within and adjacent to the construction zone should be avoided and provided a minimum buffer as determined by a biological monitor (CDFW recommends a 300 foot nest avoidance buffer or 500 feet for all active raptor nests) or consult with U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife prior to the commencement of construction.*

MM BIO-3 Add the following policy to the General Plan Update: *Prior to development of areas with drainage features such as ponds, detention basins, or wetlands, a site-specific investigation shall be conducted to define the extent of drainage features, determine wetland permit requirements, and propose measures to mitigate any impacts on the resources.*

MM BIO-4 Amend Policy 7E.P7 as follows (new text added during the Final EIR shown in *italics*): Coordinate with Los Angeles County to protect the East San Gabriel Valley Significant Ecological Area (SEA #6). Develop local regulations to protect areas within and adjacent to SEA#6 *and adjacent SEAs such as Buzzard Peak-San Jose Hills SEA*, including the possibility of identifying this the East San Gabriel Valley SEA area with an overlay district in the Zoning Ordinance

MM CUL-2 Add the following policy to the Community Design Component of the General Plan Update: *Require that for proposed developments with the potential to adversely impact cultural resources, notification be sent to cultural organizations, including Native American organizations.*

MM HAZ-1 Incorporate the following policies into the General Plan Update: *Coordinate disaster preparedness and emergency response with appropriate agencies, including the Pomona Police Department, Los Angeles County Fire Department, Los Angeles County Airport Land Use Commission, Brackett Field operators and emergency response providers, and neighboring cities. Maintain consistency with the Los Angeles County Airport Land Use Compatibility Plan [once adopted] as it pertains to Brackett Field. Ensure that land uses, densities, and building heights within Airport Land Use Compatibility Zones are compatible with safe operation of Brackett Field. Review and update City procedures for responding to airport and aircraft related emergencies.*

MM LU-1 Add the following policy to the Conservation Component of the General Plan Update: *Encourage provision of dual plumbing new construction, and provide incentives for plumbing retrofits in existing development, to enable the safe and easy use of recycled water in toilets and for landscaping.*

MM LU-2 Add the following policy to the Open Space Network Component of the General Plan Update: *Consider the most recent annual report on open space conservation in planning and evaluating projects in areas with regionally significant open space resources, including Bonelli Regional Park, East San Gabriel Valley SEA, and others, and ensure consistency with the open space conservation policies and goals of the SCAG Regional Comprehensive Plan.*

MM T-1 Add Figure 4.13-4 of the EIR and the following policy to the General Plan Update: *Work with future developers to implement the improvements identified in Figure 4.13-4 of the EIR for the General Plan Update and Corridors Specific Plan*.

1.4 Organization of this Conformance Review

This General Plan Conformance Review document is organized in three separate sections as follows:

- Section 1. Introduction
- Section 2. Project Description
- Section 3. Conformance Review Analysis

Within Section 3, the applicable General Plan goals and policies are identified and are followed by a consistency analysis with the proposed project's design.

1.5 References

City of Pomona. 2010. City of Pomona Zoning Code. Updated March 12, 2010. Accessed October 2020. https://library.municode.com/ca/pomona/codes/zoning

City of Pomona. 2013. City of Pomona General Plan Update, Corridors Specific Plan, Active Transportation Plan and Green Plan. Draft Environmental Impact Report. Volume I. July 2013. Accessed June 2020. http://www.ci.pomona.ca.us/mm/comdev/plan/pdf/GPUP-DEIR-Volume_I.pdf

City of Pomona. 2014. *Pomona Tomorrow: City of Pomona 2014 General Plan Update*. Adopted March 2014. Accessed June 2020. http://www.ci.pomona.ca.us/mm/comdev/plan/pdf/General_Plan.pdf

City of Pomona. 2020. Pomona Public GIS: Interactive Property Map. Accessed October 2020. https://pomona-utilities.maps.arcgis.com/apps/webappviewer/index.html?id=13bf54e995f74891bdf5b3bddf90522a

2 Project Description

The proposed project involves the construction and operation of 152 townhomes on an existing 7.47-acre vacant project site. The Pomona General Plan designates the project site's land use as Urban Neighborhood and Activity Center. In addition, the General Plan establishes land use density and intensity standards by transect zone. As such, the project site is designated with T4-A and T5 transects. However, the project site is zoned C-4 Commercial Highway, which does not permit the development of residential uses and therefore, the project site's zoning designation is inconsistent.

As described in Section 1.2 of this document, the projects site's zoning inconsistency is superseded by Government Code Section 65589.5(j)(4). As such, the proposed project is required to comply with the zoning regulations of the City's R-3 district. However, the project's maximum height is determined by the City's designated transects of T4-A and T5, which allow up to 4 floors and 6 floors, respectively. Therefore, a building height variance in the zoning requirements of the R-3 district are not required to construct the proposed three-story buildings.

The proposed project would require the approval of a Tentative Tract Map, Conditional Use Permit, and Major Oak Tree Permit. A Conditional Use Permit is required per the City's Supplemental Use Overlay district standards for the erection of new structures. A Major Oak Tree Permit is required for the removal of one or more oak trees on the project site.

2.1 Project Location

The project site is located at 1442 Murchison Avenue in the City of Pomona (City), Los Angeles County (County), California. The project site is located immediately east of Dudley Street and is generally located in the northwestern edge of the City, as shown in Figure 1, Project Location. Twenty-two parcels are associated with the project site, identified as the following Assessor's Parcel Numbers (APNs):

1. 8358-035-908
2. 8358-035-909
3. 8358-035-910
4. 8358-035-911
5. 8358-035-912
6. 8358-035-913
7. 8358-035-914
8. 8358-035-915
9. 8358-035-917
10. 8358-035-918
11. 8358-035-922
12. 8358-035-923
13. 8358-035-925
14. 8358-035-926
15. 8358-035-928
16. 8358-035-929
17. 8358-035-935
18. 8358-035-936
19. 8358-035-937
20. 8358-035-938
21. 8358-035-939
22. 8358-035-941

Regional access to the project site is provided by Interstate 10 (I-10), approximately 50 feet at its closet point to the north of the project site; Holt Avenue, located 0.62 mile south of the project site via Dudley Avenue; and White Avenue, located approximately 0.95 mile east of the project site via Dudley Street and

Orange Grove Avenue. The project site is bound by North Dudley Street (hereafter referred to as Dudley Street) to the west, Murchison Avenue to the north, Cortez Mathematic & Science Magnet School (hereafter referred to as Cortez Elementary School) and a 7-Eleven convenience store to the south, and multi-family residential buildings to the east. The Pomona Metrolink Station, which provides commuter service to the Los Angeles and Riverside metropolitan areas, is approximately 1.5 miles to the southeast of the project site. The Pomona North Metrolink Station is 1.9 miles to the northeast of the project site, provides commuter service to the Los Angeles and San Bernardino metropolitan areas.

2.2 Environmental Setting

2.2.1 Existing Conditions

The project site is currently vacant; however, the 7.47-acre site previously supported multi-family residential uses. Remnants of former streets, sidewalks, fire hydrants, and other signs of modern development remain on site. Vegetation is present onsite with limited pockets of non-native weeds and grasses as well as a few oak and palm trees located along the former street alignments. Piles of pushed dirt, rubble, modern garbage, and modern building materials are found throughout the property, as shown in Figure 2, Existing Conditions Site Photos. According to the project application materials, the site slopes gently downward to the west with an approximately 5-foot elevation differential across the site. On-site soils generally consist of sands, silty sands and sandy silts (City of Pomona 2020c).

Existing Site Access

The project site is surrounded by chain-linked fencing that prohibits public access to the vacant site. Under existing conditions, Murchison Avenue is closed from the western edge of the project site at Dudley Street to the northeast corner of the project site. In addition, a former road on site is blocked by a fence at Jacqueline Drive at the eastern edge of the project site.

Existing Infrastructure and Utilities

The project site is vacant. However, under existing conditions, the project site is surrounded, and can be serviced by presently existing infrastructure (i.e., water, sewer, stormwater), including those serving Cortez Elementary School to the south and residential land uses to the east.

2.2.2 Existing and Surrounding Uses

Project Site Land Use and Designations

The City of Pomona General Plan designates the project site as Urban Neighborhood and Activity Center, as shown in Figure 3A, General Plan Land Use (City of Pomona 2014). According to the General Plan, Urban Neighborhoods are moderately intense clusters of development that contain a mix of uses and Activity Centers are districts or concentrations of development that are catalyzed by retail and other complementary uses (City of Pomona 2014).

The City's General Plan establishes land use density and intensity standards by transect zone. The transect is a system of classification for built environments established in the SmartCode[1], which uses the concept of place types that range from rural (T1) to urban (T6). The project site is designated as T4-A and T5, as shown in Figure 3B, General Plan Transect Zone. The T4-A transect zone allows for development with a maximum of 4 floors, 70 du/ac, and is intended for a mix of development types compatible with medium scale multi-family housing that is adjacent to stable residential neighborhoods. The T5 transect zone allows for a maximum of 6 floors and 80 du/ac. The intent of the T5 transect zone is to feature mixed use buildings with ground floor shopfronts in activity centers, larger scale multi-family housing types (i.e. townhomes) adjacent to stable residential neighborhoods (City of Pomona 2014).

The project site is zoned C-4 Highway Commercial, which is intended for the development of neighborhood shops, commercial centers, and other commercial uses, as shown in Figure 4, Zoning (City of Pomona 2020a). The current zoning designation of the project site does not permit the development of residential uses and, therefore, not consistent with the General Plan land use or transect designations. However, per Government Code Section 65589.5(j)(4), a Change of Zone shall not be required if a housing development project is consistent with the objective general plan standards and criteria.

Surrounding Land Uses and Designations

As shown in Figure 1, Project Location, the project site is bound by Dudley Street to the west, the I-10 freeway to the north, single- and multi-family residences to the east, and Cortez Elementary School and a 7-Eleven convenience store to the south.

The I-10 freeway creates the project site's northern boundary. The I-10 freeway provides east-west regional access for the project site and surrounding vicinity. Beyond the right-of-way of the adjacent freeway are single-family residences located approximately 230 feet away. This area is designated as Residential Neighborhood and T3 by the General Plan and zoned R-1-7500 (single-family with minimum lot size of 7,500 square feet)

Directly east of the project site include both single- and multi-family residences. The closest residence is located at the property line at the northeastern corner of the site. This area is designated as Residential Neighborhood and T3 and zoned R-1-6000 and R-2 (Low Density Multiple Family).

Directly south of the project site is Cortez Elementary School and a 7-Eleven convenience store. The closest classroom is approximately 30 feet to the south of the property line. This area is designated as Urban Neighborhood and Activity Center with T4-A and T5 transect zones. The City zones the area as C-4 Highway Commercial with a Supplemental Use Overlay.

Directly west of the project site is Dudley Street, a north-south roadway which provides access to the I-10 freeway. Beyond Dudley are single- and multi-family residences, approximately 400 feet from the project site, and a Jack in the Box fast food restaurant. The City's General Plan designates this area as Residential Neighborhood with T3 transects and is zoned R-MHD (Residential-Manufactured Housing Development), R-1-6000, and C-4 with a Supplemental Use Overlay.

[1] The SmartCode Version 9: New Urban News Publications; http://www.smartcodecentral.org/

2.3 Project Characteristics

2.3.1 Residential Development

The proposed project would involve the construction and operation of 152 new attached townhomes within 20 separate buildings, as shown in Figure 5, Conceptual Site Plan. The buildings would total 124,803 square feet (2.87 acres) in building coverage and would have a maximum building height of 35 feet (3 floors). The project would introduce a residential density of 20 du/ac on the 7.47-acre project site.

The project would feature six types of plans. Table 1, below, details each type of plan, the number of units, average unit size, and amenities within.

Table 1
Residential Development by Plan Type

Plan Type	Number of Units	Average Unit Size	Amenities
Plan 1/1X	40 units	1,210 sf	2 bedrooms; 2.5 bathrooms; standard side-by-side garage
Plan 2	54 units	1,505 sf	3 bedrooms; 3 bathrooms; tandem garage
Plan 3	38 unit	1,802 sf	3 bedrooms; 3 bathrooms; standard side-by-side garage
Plan 3X/3Y	20 units	1,802 sf	3 bedrooms; 3 bathrooms; standard side-by-side garage
Notes: sf = square feet **Source**: City of Pomona 2020c			

2.3.2 Circulation and Parking

Access to the project site would be primarily available at the southwestern corner of the site from Murchison Avenue. This entrance would include one ingress and one egress lane. Additionally, two emergency access points on the eastern edge of the project site would be available: one at Murchison Avenue and another at Jacqueline Drive. Each emergency point of entry would be gated. The private roadway network within the project site would consist of a 26-foot drive aisle with a sidewalk on both sides of the street. Circulation on the project site would consist of one private street which would loop around the southern portion of the project site and feature eight private alleyways. A 5-foot sidewalk would be provided throughout the entire site. The sidewalks along the private streets would provide an inner pedestrian path along the looped road and throughout the site.

Parking would collectively consist of 99,486 square feet (2.28 acres) of the project site. Parking would be provided within buildings' garages and in separate and designated guest parking locations throughout the site. In compliance with the City's Municipal Code, the applicant proposes 339 parking spaces (299 residential and 40 for guests). The number of proposed spaces reflects the applicant's request for a 15% reduction of 398 spaces required by the Code.

2.3.3 Architectural Design, Landscaping, and Outdoor Amenities

The project's design would feature two different contemporary eclectic schemes. One scheme would feature brown and blue paints and brick, while the other would feature gray and brown paints. Both schemes would include stucco and brick finishes, and concrete tile roof tops. The proposed project's color schemes are shown in Figure 6, Color Boards.

Landscaping is proposed throughout the project site. These include trees, shrubs, vines, and various groundcovers. Trees are proposed along the outer edges of the project site, notably screening the proposed townhomes from the I-10 freeway to the north and within the setbacks between proposed buildings and parkways. Located on the northwestern corner of the project site is a proposed turf area. Proposed landscaping on the project site is shown in Figure 7, Conceptual Landscape Plan.

A pool recreation area (including a 1,000 square-foot swimming pool and 500 square-foot spa) and a pool building (including an electrical room, storage, men's and women's restrooms and showers and an entry space) are proposed on the southwestern corner of the project site. The pool building's architectural design would feature a collection of tan and brown paints and brick façades. The proposed pool building is shown in Figure 8, Pool Building. Other open space and recreational areas within the project site include a proposed barbeque area as well as private patios spaces attached to the townhomes. In total, the project would include 101,063 square feet of landscaping on site (31% of the project site). A total of 75,292 square feet would be utilized as common open space. Private open space varies depending on the townhome plan type, ranging between 80 square feet and 99 square feet. All open space and recreational facilities on site would be maintained by a future homeowner's association (HOA).

The project applicant would construct various walls and fences along the perimeter of the project site and within. The two eastern emergency access gates would be guarded by a 6-foot tubular steel fire access gate with knox box and 24-inch split face pilasters with "grasspave" hardscape meeting the asphalt-paved driveways. A 6-foot 6-inch split face block wall would surround the project site along the eastern, western, and southern edges. Tubular steel pool fencing would surround the pool building recreational area at 5 feet and 6 inches in height. In addition, a block wall would surround the pool's electrical room. The northern edge of the project site would keep in place the existing sound wall that is shared with the I-10 freeway.

2.3.4 Infrastructure and Utility Improvements

Construction of the proposed project would connect the project site with the surrounding utilities. The proposed connections include an existing 8-inch asbestos cement pipe (ACP) water line and an existing 8-inch vitrified clay pipe (VCP) sewer line at the southwestern edge of the project site as well as connections to existing lines within Murchison Avenue at the northeastern edge of the project site. On-site infrastructure improvements on the project site would include the construction of various storm drain, water, and sewer lines, notably within the proposed street alignments. A water quality bio-filtration chamber is proposed at the project site's northwest corner. The project's proposed utility connections and improvements are shown in Figure 9, Preliminary Utility Plan. Removal of existing utility infrastructure would also occur. An existing 6-inch ACP water line and an 8-inch VCP sewer line would be removed. Implementation of the proposed project would also result in proposed easements for public and emergency access for the City of Pomona, including easements for sanitary sewer, domestic water, storm drain access and maintenance. An

easement for the access and maintenance of an existing 36-inch storm drain public utility easements is also proposed for the California Department of Transportation (Caltrans).

2.4 Project Construction

The proposed project would include grading of the project site followed by earthwork activities resulting in cut and fill of approximately 58,000 cubic yards. No import or export of soil would be required and the cut and fill activities would result in a balanced site. Construction activities would also include the removal of existing oak trees on the project site. It is anticipated that construction would commence in late 2020/early 2021 and be completed in early 2022. Approximately 14 months is assumed for the duration of the construction period, as shown in Table 2, which outlines start date, finish date and total working days.

Table 2
Proposed Construction Schedule

Construction Phase	Start Date	Finish Date	Total Working Days
Site Preparation	December 2020	December 2020	2 weeks
Grading	December 2020	January 2021	4 weeks
Building Construction	January 2021	November 2021	11 months
Paving	November 2021	December 2021	4 weeks
Architectural Coating	December 2021	January 2022	6 weeks
Source: Appendix D			

2.5 Project Operation

It is anticipated the proposed project would be fully operational by 2022. The new residential development is projected to accommodate approximately 585 residents[2]. No employment-generating land uses are proposed on site. Typical operations on the project site would produce vehicular traffic, landscaping maintenance noise, and noise from the pool complex and recreational facilities.

2.6 Required Permits and Approvals

2.6.1 City Permits and Approvals

The proposed project would require the following of discretionary permits and approvals from the City. As such, these permits are subject to CEQA review.

- A Tentative Map shall be required for subdivision purposes.
- A Conditional Use Permit shall be required per the Supplemental Use Overlay district standards for the erection of new structures.
- A Major Oak Tree Permit shall be required for the removal of one or more oak trees.

[2] 152 units x City's Housing Element Household Profile of 3.85 persons per household.

2.6.2 Approvals and Review from Other Agencies

Approvals from other agencies may also be required and are listed below. These permits would be administrative and ministerial in nature and are not expected to be subject to CEQA. As such, no responsible or trustee agencies have been identified for this project.

- Caltrans – Coordination for access and maintenance easements as well as improvement of an all-way stop control at the intersection of Dudley Street and Interstate 10 (I-10) Eastbound (EB) Ramps/Murchison Avenue
- Southern California Edison – Coordination for utility pole relocations
- Utility providers – Utility connection permits

2.7 References

City of Pomona. 2014. *Pomona Tomorrow: City of Pomona 2014 General Plan Update*. Adopted March 2014. Accessed June 2020. http://www.ci.pomona.ca.us/mm/comdev/plan/pdf/General_Plan.pdf

City of Pomona. 2020a. City of Pomona Zoning Ordinance, Part II, Section .370 "C-4" Highway Commercial District. https://library.municode.com/ca/pomona/codes/zoning?nodeId=APXIZOOR_PTII_S.370HICODIINPU

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City of Pomona. 2020c. Project Application Materials from MLC Holdings, Inc. Provided by the City of Pomona, June 2020.



SOURCE: Esri Aerial Imagery 2019

DUDEK

0 75 150 Feet

FIGURE 1

Project Location

1442 Murchison Avenue Project

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View Along Southeast Edge of Site



View Looking East



View at Northwest Corner



View Looking Northwest



View Along Northerly Property Line



View Looking South



View Along Easterly Property Line

SOURCE: Kevin L. Crook Architect Inc. 2020

DUDEK

FIGURE 2

Existing Conditions Site Photos

1442 Murchison Avenue Project

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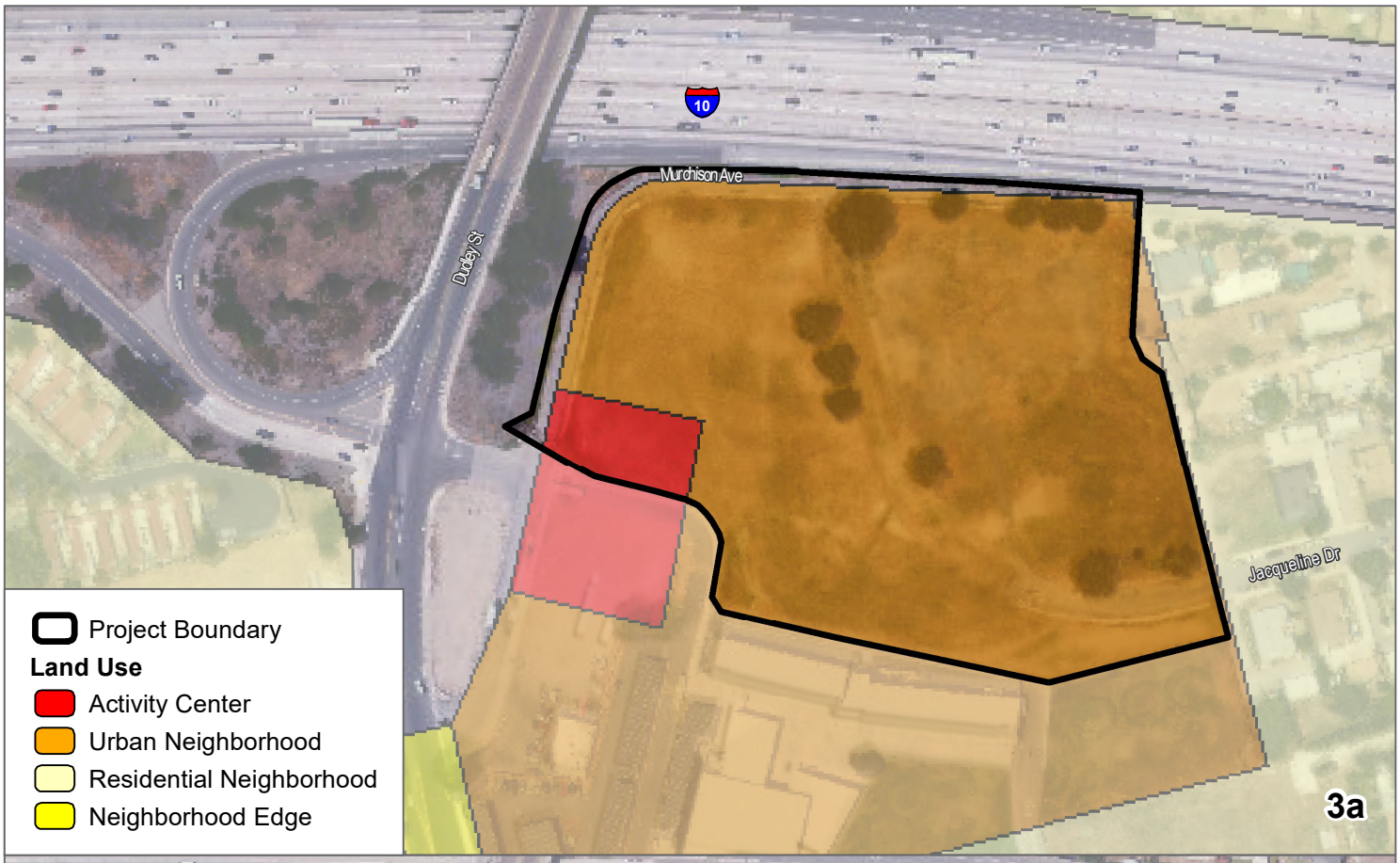



SOURCE: Esri Aerial Imagery 2019, City of Pomona 2020

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0 100 200 Feet

FIGURE 3

General Plan Land Use and Transect Zones

1442 Murchison Avenue Project

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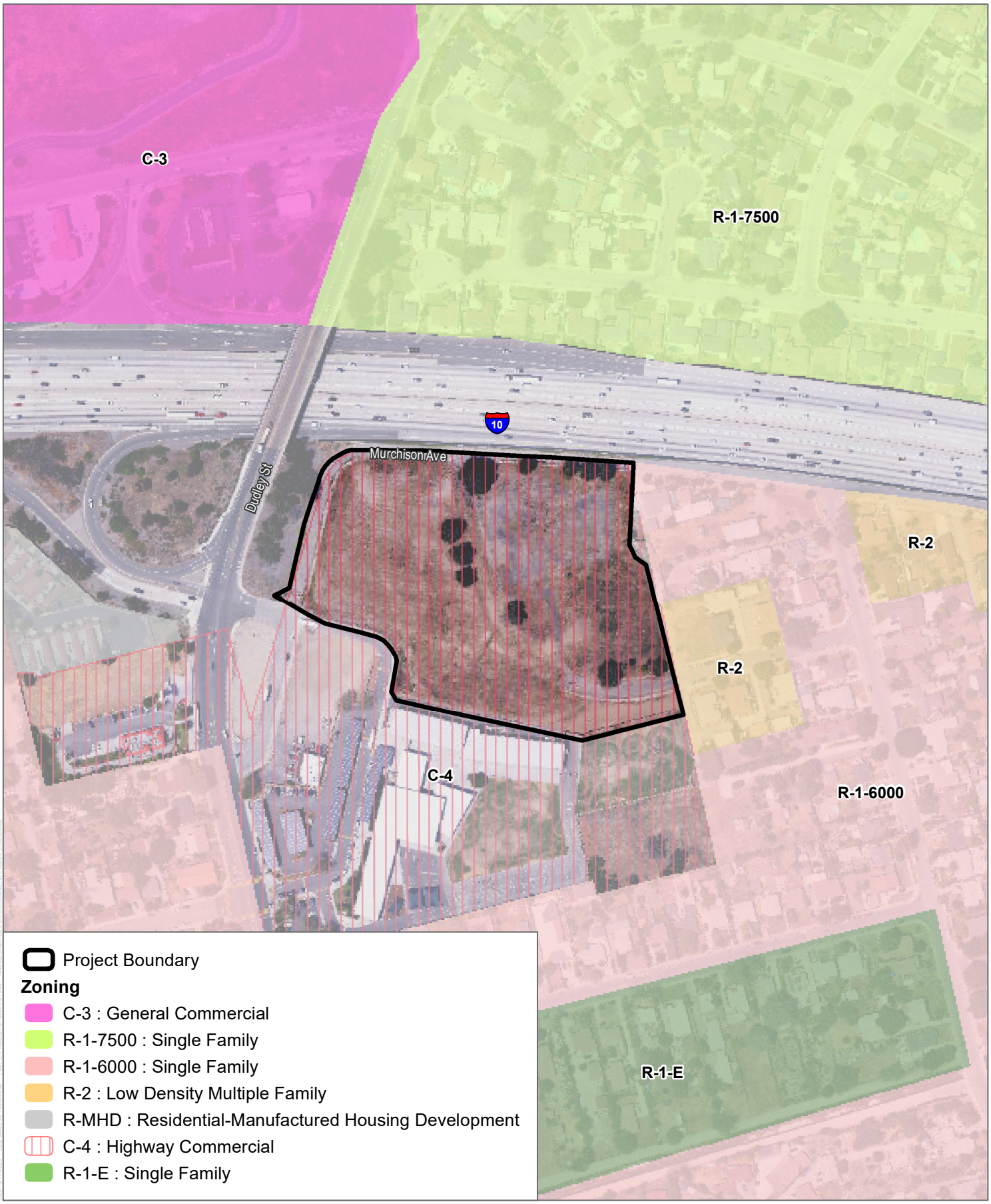

SOURCE: Esri Aerial Imagery 2019, City of Pomona 2020

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0 125 250 Feet

FIGURE 4

Zoning

1442 Murchison Avenue Project

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Project Summary

Lot Area: 7.47 Acres (325,352 SF)

- Building coverage: +124,803 (2.87 Acres) = 38%
- Parking Area: +99,486 (2.28 Acres) = 31%
- Landscape Area: +101,063 (2.32 Acres) = 31%

Total number of units: 152 Homes

- 40 - Plan 1: 1,210 SF/2 Bed/2.5 Ba/S-S Garage
- 54 - Plan 2: 1,505 SF/3 Bed/3 Ba/Tandem Garage
- 38 - Plan 3: 1,802 SF/3 Bed/3Ba/S-S Garage
- 20 - Plan 3X / Plan 3Y: 1,802 SF/3 Bed/3 Ba/S-S Garage

Density: 20.3

Occupancy: R3 Townhome/U

Sprinkler System: NFPA 13D

Construction Type: VB

Building gross area: 235,128 SF

Maximum Building height permitted: 35 feet/4 stories

Building Height/Number of levels: 34'10"/3 Stories

Parking spaces required:

- Garage: 2 per unit x 152 = 304
- Guest: 1 per 4 unit (0.25) x 152 = 38 (including 1 standard + 1 van accessible space)

Parking spaces provided:

- Garage: 304 (2 per unit)
- Standard: 40 (includes 3 Van Accessible)

Common Open Space Required: 72,000 SF

- Two Bedroom: 400 SF per unit x 40 = 16,000 SF
- Three Bedroom: 500 SF per unit x 112 = 56,000 SF

Common Open Space Provided[2]: 72,268 SF

Private Open Space Required[3]: 70 SF per unit; min. 6' dimension

Private Open Space Provided[3]:

- Plan 1: 70 SF Deck, 6' minimum dimension
- Plan 2: 96 SF Deck, 6' minimum dimension
- Plan 3: 96 SF Deck, 6' minimum dimension
- Plan 3X / Plan 3Y: 96 SF, 6' minimum dimension

Landscape area required: 20% of entire parcel

Landscape area provided: 31% of entire parcel

Existing Zoning: C-4

Proposed Zoning: R-3

General Plan Place Type: Urban Neighborhood & Activity Center

General Plan Transect:

- T4-A – 4 floors max., 70 du/ac max
- T5 – 6 floors max., 80 du/ac

Notes:

1. Setbacks reduced by 20% pursuant to a minor deviation (PMC Section .560(J))
2. Includes areas with an average minimum dimension of 15 feet. Excludes front yard and side yard setbacks.
3. Assumes all units are considered "above ground" since living space is located on second floor.
4. S-S garage indicates a standard side-by-side parking configuration.

0 20 40 80

SOURCE: Kevin L. Crook Architect Inc. 2020

DUDEK

FIGURE 5

Conceptual Site Plan

1442 Murchison Avenue Project

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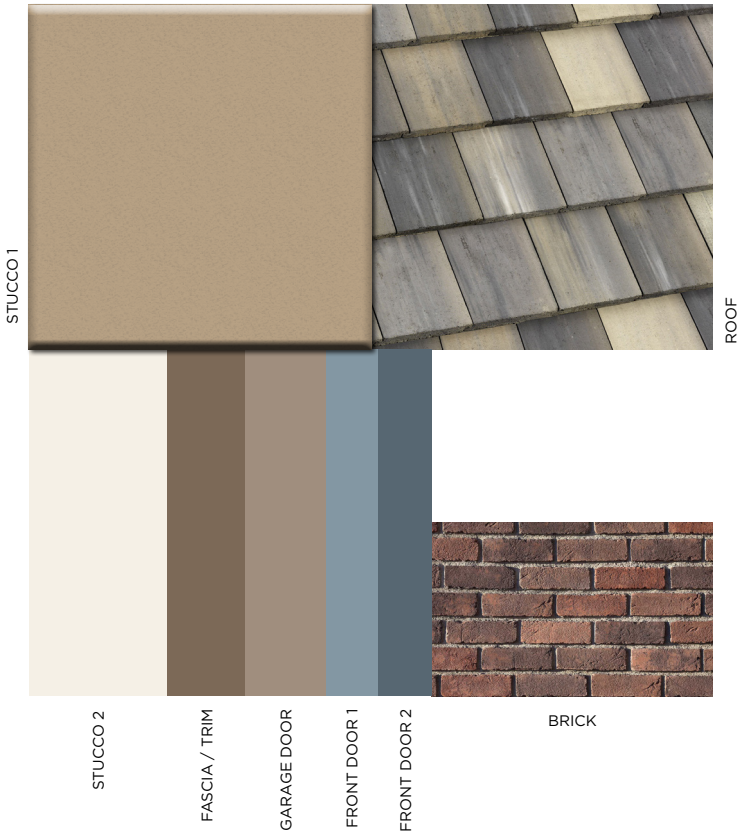
CONTEMPORARY ECLECTIC
SCHEME #1



CONTEMPORARY ECLECTIC
SCHEME #2



Colors May Vary Due To Screen And Printer Calibration. Refer To Paint Chips And Materials Boards For Actual Colors.

SOURCE: Kevin L. Crook Architect Inc. 2020

DUDEK

FIGURE 6
Color Boards
1442 Murchison Avenue Project

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SOURCE: BGB Design Group 2020

DUDEK

FIGURE 7

Conceptual Landscape Plan

1442 Murchison Avenue Project

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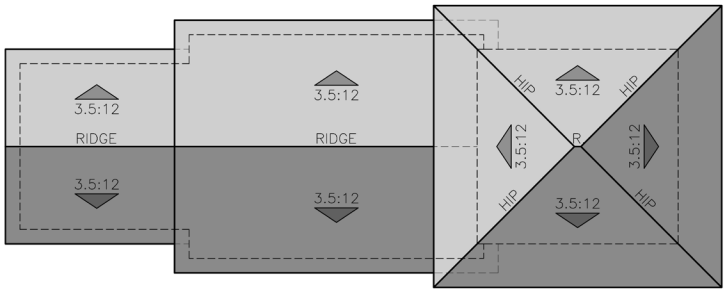


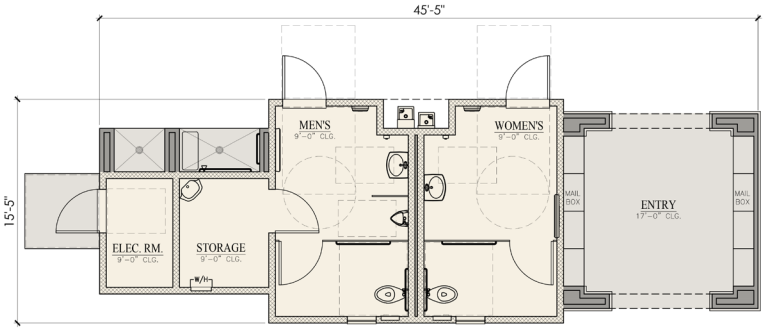
ROOF PLAN



LEFT ELEVATION



FRONT ELEVATION



FLOOR PLAN



RIGHT ELEVATION



REAR ELEVATION

SOURCE: Kevin L. Crook Architect Inc. 2020

DUDEK

FIGURE 8

Pool Building

1442 Murchison Avenue Project

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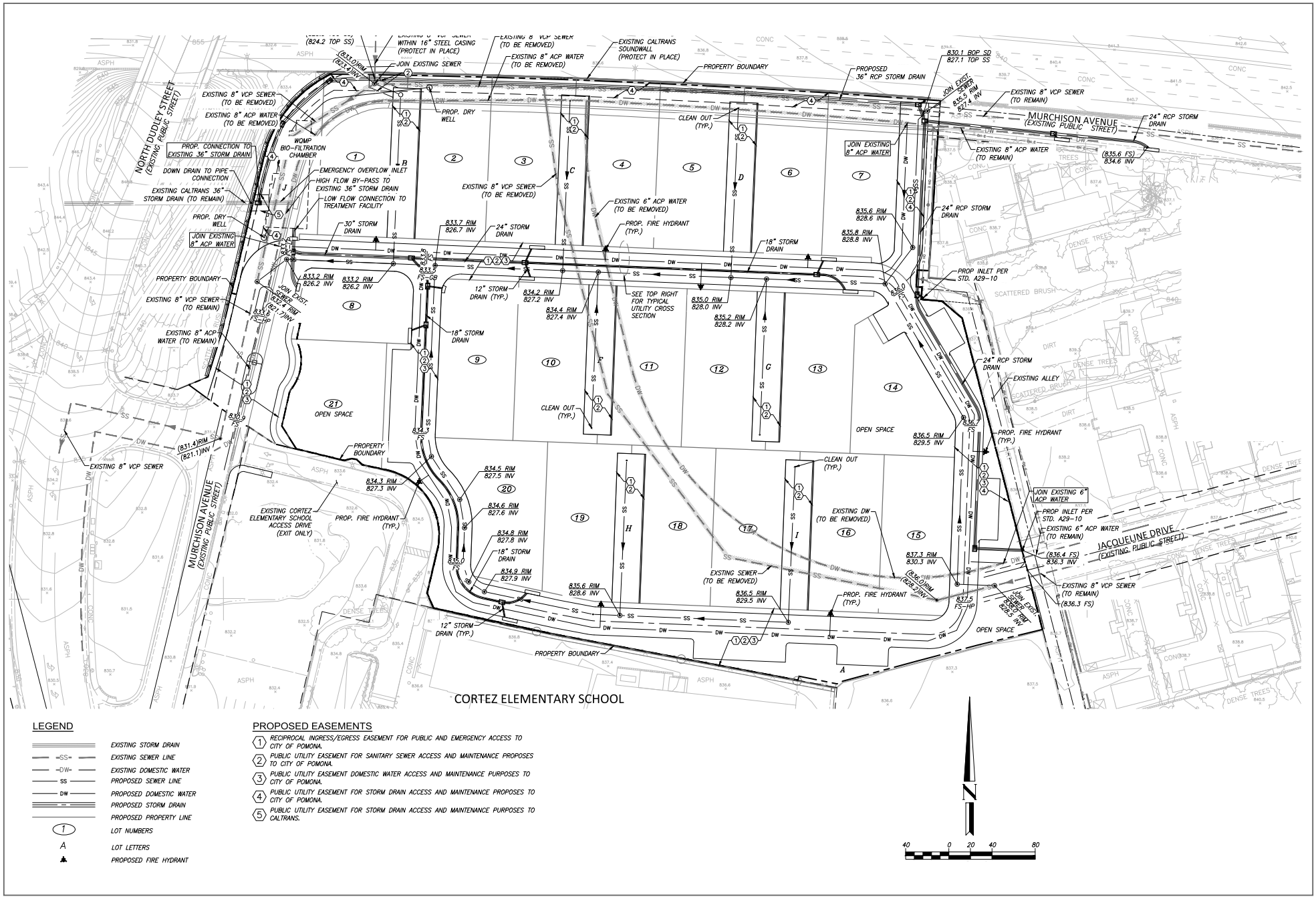

SOURCE: Huitt-Zollars, Inc. 2020

DUDEK

FIGURE 9

Preliminary Utility Plan

1442 Murchison Avenue Project

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3 Conformance Review Analysis

As described in Section 1 of this document, the City must complete a General Plan Conformance Review to identify and determine the proposed project's consistency with the goals and policies of the Pomona General Plan Update, *Pomona Tomorrow*. The City's General Plan is comprised of seven place types (Activity Centers, Transit Oriented Districts, Special Campuses, Neighborhood Edges, Urban Neighborhoods, Workplace Districts, and Residential Neighborhoods) and seven components (Land Use & Density, Economic Development, Open Space Network, Mobility & Access, Conservation, Community Design, and Noise & Safety).

The analysis that follows evaluates the proposed project against applicable goals and policies included in the City's 2014 General Plan Update. These goals and policies are listed by both function/place type (i.e., Activity Center and Urban Neighborhood) and by the following General Plan Components.

3.1 Activity Centers

According to the City's General Plan, Activity Centers are districts or concentrations of development that are catalyzed by retail and other complementary uses. Due to their geographic location, visibility, access, and existing conditions, different activity centers in the City play different roles in establishing the healthy distribution of retail activity essential to Pomona's integrated economy (City of Pomona 2014). The General Plan designates the southwestern portion of the project site as Activity Center. This area of the project site corresponds with the General Plan transect zoning of T5. The intent of the T5 transect zone is to feature mixed use buildings with ground floor shopfronts in activity centers, larger scale multi-family housing types (i.e. townhomes) adjacent to stable residential neighborhoods (City of Pomona 2014). The proposed project's shared recreational amenities, including the proposed pool complex, would correspond with the 0.42 acre of land designated for Activity Center. Table 3, below, demonstrates the proposed project's consistency with the following applicable goals and policies.

Table 3
Activity Centers Consistency Analysis

Goal/Policy	Analysis
6A. P2: Strategically identify locations for activity centers that maximize both neighborhood and vehicular accessibility and visibility.	**Consistent.** The proposed project includes the development of on-site recreational amenities (i.e., pool area) for residents of the proposed development. These features would be accessible to pedestrians through proposed sidewalk infrastructure on site and visible through an on-site street network, adjacent to the southwest entrance. As such, the proposed project would utilize a strategic location on the project site for the proposed community. Therefore, the project is consistent with this policy.

Table 3
Activity Centers Consistency Analysis

Goal/Policy	Analysis
6A. P4: Utilize a combination of capital improvements and private investments to create attractive, walkable streetscape environments that support shopping, entertainment, community, and pedestrian activity.	**Consistent.** The proposed project does not include the construction of retail on site. However, the proposed project includes the creation of on-site recreational amenities (i.e., a pool area, barbeque facilities, and a turf area) for residents of the proposed development. These features would be accessible to pedestrians through proposed sidewalk infrastructure on site. All sidewalks on site are planned with trees and other landscaping features, which would support walkable streetscape environments on the project site. The proposed improvements would be created from private investments from the applicant. Despite no commercial land uses on-site, the proposed project would be consistent with this policy.

3.2 Urban Neighborhood

As previously mentioned, the City's General Plan designates land with seven different place types. The majority of the project site is designated as Urban Neighborhood by the City's General Plan, as shown in Figure 3A. Urban Neighborhoods are defined as moderately intense clusters of development that contain a mix of uses (City of Pomona 2014). The specific character of any individual urban neighborhood land use builds upon the existing development within or adjacent to it. Smaller clusters that are currently housing-only and surrounded by single family homes will continue to be characterized by lower density residential development (City of Pomona 2014). Table 4, below, demonstrates the proposed project's consistency with the applicable goals and policies for the Urban Neighborhood land use designation.

Table 4
Urban Neighborhood Consistency Analysis

Goal/Policy	Analysis
6E. G1: Preserve stable neighborhoods by focusing new intensity and activity in clusters at major crossroads and areas of existing intensity throughout the City.	**Consistent.** The project site is currently a vacant lot, therefore, redevelopment of the site into residential land uses would not interfere with the preservation of existing land uses on site. In addition, the project's proposed land use is consistent with the City's Urban Neighborhood designation. Implementation of the proposed project would be in-line with the goals for infill development on existing vacant land at the intersection of Dudley Street and the I-10 freeway. As such, the development of the site would not interfere with the preservation of an existing neighborhood or the surrounding area. Therefore,

Table 4
Urban Neighborhood Consistency Analysis

Goal/Policy	Analysis
	the proposed project would be consistent with this goal.
6E. G3: Establish areas that can successfully transition into mixed-use neighborhoods with a strong residential character by supporting high quality, multi-family housing.	**Consistent.** The proposed project involves the redevelopment of a vacant lot with multi-family housing. The surrounding land uses include residential, commercial, and a school. Although the proposed project does not incorporate mixed-use development land uses, it would provide the project area with higher quality land uses compared to existing (vacant) conditions. Therefore, the proposed project would be consistent with this goal.
6E. G4: Establish active, pedestrian-oriented neighborhoods with a mix of housing and workplace development, including clean light industry, manufacturing, flex and incubator spaces, and live/work units.	**Consistent.** The project would result in the construction of new multi-family housing within an area of the City consisting of single- and multi-family housing. The proposed project would include sidewalks along on-site streets and within landscaped setbacks between the proposed residential buildings. In addition, the proposed sidewalks would connect to existing off-site sidewalk infrastructure outside of the project site's boundaries. No live/work units would be introduced onto the project site. However, implementation of the proposed project would support the City's goal by contributing to an active, pedestrian-oriented neighborhood by establishing a pedestrian network for residential uses. Therefore, the project would be consistent.
6E. P1: Permit a range of multi-family residential and residentially compatible development types in clusters at major crossroads throughout the City as identified in Figure 6.3 Pomona Tomorrow and Figure 7-A.8 Transect Tomorrow.	**Consistent.** The project site, located at the intersection of Dudley Street and the I-10 freeway, is designated as Urban Neighborhood, as shown in Figure 6.3 Pomona Tomorrow of the General Plan Update. The proposed project would redevelop an existing vacant lot to multi-family residential which would be consistent with the density and intensity standards designated for the site. Therefore, the proposed project would be consistent with this policy.
6E. P4: Establish development regulations that control the height, massing, orientation, and siting of buildings in these neighborhoods to ensure that all new development contributes positively to the character of the neighborhood and maintains an appropriate relationship to adjacent, stable residential neighborhoods.	**Consistent.** The proposed project would be constructed on land designated as Urban Neighborhood with transect zones T4-A and T5, which establishes guidance on development standards. For example, the T4-A zone allows for a maximum building height of 4 floors and the T5 zone allows for a maximum of 6 floors. The project's proposed height would be 35 feet (3 floors). As such, the project would be within the defined density and intensity standards of the General Plan transect zone and therefore, would be consistent.

Table 4
Urban Neighborhood Consistency Analysis

Goal/Policy	Analysis
	Redevelopment of an existing vacant lot would result in a positive change as the project would be compatible with the character of the surrounding neighborhood. Therefore, the proposed project would be consistent with this policy.
6E. P5: Require development to reduce height and intensity on portions of properties adjacent to stable residential neighborhoods. Permitted heights and intensities in these locations should be compatible with the scale of the existing residential neighborhood.	**Consistent.** The proposed project would be constructed on land designated as Urban Neighborhood with transect zones T4-A and T5, which establishes guidance on density and intensity standards. For example, the T4-A zone allows for a maximum building height of 4 floors and the T5 zone allows for a maximum of 6 floors. The project's proposed height would be 35 feet (3 floors). As such, the project would propose a maximum building height on the lower end of the spectrum for allowable height and be compatible with the scale of the surrounding neighborhood, which includes both two-story, multi-family and one-story, single family homes. Therefore, the proposed project would be consistent with this policy.

3.3 Land Use & Density

Section 3.2, Urban Neighborhood, of this document demonstrates consistency with the project site's land use designation which establishes permittable land uses by "place type." However, land use density and intensity standards are defined by transect zone. The General Plan transect zones range in land use type by numeric value from rural (T1) to urban (T6). Transect zones are illustrated in many forms in character and function by district, center, or segment (City of Pomona 2014). For example, maximum permitted heights (expressed in number of floors) are established by transect zones. These height limits correspond with zoning regulations within the City's Municipal Code. Residential density is expressed as housing units per net acre (exclusive of public streets and other rights-of-way). In addition to density and intensity standards, some transect zone classifications stipulate envisioned building types (such as single-family residential) (City of Pomona 2014).

The transect zone standards do not imply that development projects will be approved within the maximum density or intensity specified for each use (City of Pomona 2014). Zoning regulations consistent with General Plan policies and/or site conditions may reduce development potential within the stated ranges. The transect zones within the Land Use & Density component represent adopted City policy with flexibility in implementation. The City's Zoning Ordinance provides more detailed provisions and standards. As a result, more than one zoning district may be consistent with a single General Plan transect zone (City of Pomona 2014).

The project site is designated with T4-A and T5 transect zone designations. Table 5 compares the two transect zones with the proposed project.

Table 5
Transect Zone and Proposed Project Comparison

	T5 Typical	T4A Typical	Proposed Project
Height	6 floors max.	4 floors max.	35 feet (3 floors)
Housing Density	80 du/ac max.	70 du/ac max.	20 du/ac
Typical Development Types	Some mixed use buildings or sites featuring ground floor shopfronts in activity centers. A mix of building types compatible with larger scale multi-family housing as well as townhomes. Smaller scale multifamily housing limited to locations that are adjacent to stable residential neighborhoods	A mix of building types compatible with medium scale multi-family housing as well as townhomes, and other smaller scale multifamily housing in locations that are adjacent to stable residential neighborhoods. A wider variety of freestanding commercial and mixed-use building types in areas with less residential and greater use mix	The proposed project would construct a multi-family residential development with recreational amenities on site. Consistent with the T5 and T4A transect's typical development types, the project would introduce townhomes onto the project site.

As shown above, the proposed project is within the development density and intensity standards of both transect zones.

One of the General Plan Components, Land Use & Density, outlines the City's land use strategies and framework to guide land use decision-making in support of the vision established in *Pomona Tomorrow*. Under this section of the General Plan, the City identifies residential uses as "under supply" in which housing production has slowed significantly during the past three decades as the City approaches build-out, but potential housing production exists and should be appropriately designed (City of Pomona 2014). Table 6, below, demonstrates the proposed project's consistency with applicable goals and policies.

Table 6
Land Use & Density Consistency Analysis

Goal/Policy	Analysis
7A. G2: Promote a balance mix of uses throughout the City that can be part of an integrated and sustainable local economy that supports harmonious diversity and economic propensity.	**Consistent.** As mentioned above, the General Plan cited an "under supply" of housing exists within the City. The proposed project would develop on vacant land designated for multi-family residential. The project would introduce new residential uses in an area that supports existing commercial and educational land uses. As such, the project would promote the City's goal of providing a mix of uses

Table 6
Land Use & Density Consistency Analysis

Goal/Policy	Analysis
	throughout the city. Therefore, the project would be consistent with this goal.
7A. G3: Promote a more efficient pattern of permitted land uses throughout the City. Provide a better balance between permitted land uses and the amount of land available for each use.	**Consistent.** As mentioned above, the General Plan cited an "under supply" of housing within the City. The proposed project would develop on land designated for multi-family residential. As such, the project would develop the land use designation allowed on the project site. Consistency with the land use designation ensures consistency with this goal.
7A. G4: Distribute land uses throughout the City in way that takes advantage of the City assets that add value to those uses.	**Consistent.** As mentioned above, the General Plan cited an "under supply" of housing within the City. The proposed project would develop on land designated for multi-family residential. As such, the project would develop the land use designation allowed on the project site. Consistency with the land use designation ensures consistency with this goal.
7A. P4: Maintain minimum and maximum development intensities as stipulated in the Land Use & Density Component to ensure availability of land for future growth. Approval of developments at lower than stipulated densities should be accomplished by map amendments to the General Plan, not by providing exemptions from stipulated densities.	**Consistent.** The proposed project would develop on land designated for multi-family residential and within the appropriate allowed density for the project site. The project represents a density on the lower end of the spectrum for allowable density. As such, the project would develop the land use designation allowed on the project site. Consistency with the land use designation ensures consistency with this policy.

3.4 Economic Development

The primary goal of the Economic Development Component is to establish a framework to enhance the economic character of the City and achieve the community's economic goals, consistent with the vision of a prosperous community with a high quality of life (City of Pomona 2014). The City seeks to achieve the goals and policies of this component by providing direction to guide development activities while maintaining the flexibility to make the best use of resources as they become available; taking advantage of future economic opportunities; responding to changing economic trends; and reacting to local market conditions (City of Pomona 2014). The General Plan establishes the following strategic priorities for economic development, below:

1. Make the most of value already in place and tailor policies that adequately consider existing conditions
2. Make Downtown the centerpiece of the Plan
3. Encourage redevelopment and reinvestment: target change areas identified in Section 5. Stability & Change
4. Recapture lost retail spending

5. Deliver housing attractive to families and compact, 1 and 2 person households
6. Strengthen the jobs base and support the 21st century workplace environment
7. Remove potential barriers to new investment and economic prosperity
8. Ensure fiscal stability
9. Maintain pro-active City leadership
10. Pursue stakeholder partnerships and collaboration

Although most of the priorities are not applicable to the proposed project, Strategic Priority 5 identifies the need for housing as an opportunity for economic development. The project would construct new residential units on existing vacant lot. Therefore, the project is consistent with this strategic priority. With those priorities in mind, Table 7, below, demonstrates the proposed project's consistency with applicable goals and policies.

Table 7
Economic Development Consistency Analysis

Goal/Policy	Analysis
7B. G12: Promote housing – especially move-up workforce housing – of various types in diverse settings that serve the needs of Pomona's core household population while also attracting compact, one- and two-person households.	**Consistent.** The proposed project would redevelop an existing vacant lot into multi-family townhomes. As described in Section 2, Project Description, of this document, the project would include four types of townhome plans. Specifically, the project would construct 40 units consisting of 2 bedrooms, 54 units with 3 bedrooms, and 38 larger units with 3 bedrooms. The variety of proposed housing types would allow for a new homeowner population to the project area. The construction of the project would result in new housing and would diversify the immediate housing stock within the project site's vicinity. As such, the project would support the City's goal and be consistent.
7B. P6: Identify ways to remove barriers to investments in projects that implement the vision of *Pomona Tomorrow*.	**Consistent.** According to the General Plan, strategies to remove barriers to economic development include transformations to city corridors, reform of minimum parking requirements, diversifying the City's labor force, reducing crime, and the establishment of developer-friendly regulatory environment. The project site is not located on an identified corridor as specified in the General Plan Update and does not include the development of commercial or industrial land uses. The project applicant is requesting a 15% reduction of required parking as allowed by the City's Municipal Code. The project site includes on-site facilities that are planned to be maintained by a homeowners' association, thereby promoting a high-quality living environment. Finally, the project applicant is seeking approval of the proposed project despite inconsistency between the zoning

Table 7
Economic Development Consistency Analysis

Goal/Policy	Analysis
	designation and the General Plan Update. As required under Government Code 65589.5 (SB 330), discussed in Section 1.2 of this document, the City cannot require a zone change when a residential project is in conformance with the General Plan. In addition to utilizing the provisions of SB 330, the City has determined project consistency with the General Plan through State CEQA Guidelines Section 15183, which exempts the project from further environmental review. Therefore, the proposed project would be consistent with the City's policy.
7B. P7: Streamline the development process by: • Providing clarified development standards that establish detailed regulatory intent and simplify development application preparation. • Simplifying the development review process for proposals that adhere to development standards and guidelines.	**Consistent.** The project applicant is seeking approval of the proposed project despite inconsistency between the project site's zoning designation and the General Plan Update land use designation. As required under Government Code 65589.5 (SB 330), discussed in Section 1.2 of this document, the City cannot require a zone change when a residential project is in compliance with the General Plan. In addition to utilizing the provisions of SB 330, the City has determined project consistency with the General Plan through State CEQA Guidelines Section 15183, which exempts the project from further environmental review. Therefore, the proposed project would be consistent with the City's policy.

3.5 Open Space Network

As described in the Open Space Network Component of the City's General Plan, parks, public recreation facilities, and other open spaces are essential components for livable and healthy communities, especially in urbanized areas (City of Pomona 2014). Parks, plazas, and attractive streetscapes also help foster social interactions and a sense of community that define the public realm and urban culture (City of Pomona 2014). According to the General Plan, the City has a goal of providing 3 acres of parkland per 1,000 residents (City of Pomona 2014). Table 8, below, demonstrates the proposed project's consistency with applicable goals and policies.

Table 8
Open Space Network Consistency Analysis

Goal/Policy	Analysis
7C. G1: Establish a more comprehensive and integrated network of parks and open space, within ¼ mile radius at all neighborhoods, while enhancing existing facilities where feasible.	**Consistent.** The proposed project would redevelop an existing vacant lot into a multi-family residential community. Although the proposed project would not introduce new public open space or parkland, the

Table 8
Open Space Network Consistency Analysis

Goal/Policy	Analysis
	project would include recreational facilities and on-site open space and landscaping for on-site residents. In addition, the project site is located approximately 0.25 miles from Kiwanis Park to the southeast. Therefore, the project is consistent with this goal.
7C. G3: Develop additional parkland in the City, particularly in areas lacking these facilities and where new growth is proposed.	**Consistent.** The proposed project would redevelop an existing vacant lot into a multi-family residential community. Although the proposed project would not introduce new public open space or parkland, the project would include recreational facilities and on-site open space and landscaping for on-site residents. The nearest park to the project site is Kiwanis Park, located approximately 0.25 miles southeast of the project site. On-site recreational facilities would support the proposed new growth as a result of the project. New residents would utilize on-site recreational amenities. As such, the project site is not located in an area that is lacking in parkland and recreational facilities and on-site recreational features would support new growth as a result of the project. Therefore, the project is consistent with this goal.
7C. G16: Minimize the physical impact of Interstate 10 and its interchanges on the visual character and form of the City.	**Consistent.** The project site is immediately to the south of the I-10 freeway. The proposed project would include the planting of trees and landscaping designed to buffer the proposed residential development from the freeway and associated existing sound wall. As such, project features are designed to minimize the physical impacts to visual character. Therefore, the project would be consistent with this goal.
7C. G17: Ensure pedestrian and bicycle friendly street environments.	**Consistent.** The proposed project would develop a multi-family residential community. On-site landscape and open space features include sidewalks for pedestrians throughout the site, including those that are separate from the internal roadway. Additionally, roadways would include shoulders with adequate width to accommodate bicycles. Therefore, the project would be consistent with this goal.
7C. P23: Require developers to install or contribute to streetscape improvements that are consistent with “Street Types” as development occurs.	**Consistent.** The project applicant proposes streetscape improvements to Murchison Avenue at the property line. These improvements would be required and ensured through the City’s plan check and permitting process. Therefore, the project would be consistent with this policy.

Table 8
Open Space Network Consistency Analysis

Goal/Policy	Analysis
7C. P24: Install street trees to provide shade along streets and sidewalks intended for greater pedestrian activity.	**Consistent.** As shown in Figure 5, Conceptual Site Plan, the project includes trees planted throughout the sidewalk network on site. Therefore, the project would be consistent with this policy.
7C. P26: Utilize traffic-calming measures such as landscaped medians, well-lit and distinctive pedestrian crosswalks with changes in pavement material, street parking, and street trees to activate shopfronts where ground-floor retail and pedestrian activity is desired.	**Consistent.** At the entrance of the project site, the proposed project would include a landscaped entrance to the site. The road would connect to Murchison Avenue and provide a median with opportunities for vehicular traffic to make U-turns. As such, the project is proposed to include off-site features which would support traffic calming and designs promoting visual quality and pedestrian safety. Therefore, the project would be consistent with this policy.
7C. P27: Support local utility providers in the under-grounding of utility wires. Work with Southern California Edison and other public agencies to underground overhead utility lines along major commercial corridors using Rule 20A monies and other funding sources.	**Consistent.** The project site is served by surrounding existing infrastructure. All utility improvements connecting the project site to local utility providers would be proposed underground and would comply with the City's Municipal Code for specific requirements. The City's plan check and permitting process would ensure compliance with this policy. Therefore, the project would be consistent with this policy.
7C. P34: Use regulations to encourage buildings and other structures that are highly visible from I-10, SR-71, SR-57, and SR-60 to be designed with a quality and character that contributes to a positive image of Pomona.	**Consistent.** It is anticipated that the proposed project would be higher than the existing sound wall between the project site and the I-10 freeway. Views of the proposed residential buildings would feature two different contemporary eclectic schemes. One scheme would include stucco and brick finishes, concrete tile roof tops, and a collection of brown and blue paints. The other scheme would include stucco and brick finishes, concrete tile roof tops, and a collection of gray and brown paints. As such, the new development would contribute to a positive image of Pomona from the freeway. Therefore, the project would be consistent with this policy.

3.6 Mobility & Access

The Mobility & Access Component of the General Plan identifies long-range transportation policies and goals for moving people and goods in and around the city (City of Pomona 2014). It addresses bicycle, motor vehicle, pedestrian, public transit, and freight movement, as well as a range of public safety, environmental, and social equality issues associated with transportation. Table 9, below, demonstrates the proposed project's consistency with applicable goals and policies.

Table 9
Mobility & Access Consistency Analysis

Goal/Policy	Analysis
Regional Transportation	
7D. G1: Distribute vehicular, transit, bicycle, and pedestrian traffic approximately throughout the City.	**Consistent.** A Traffic Impact Analysis (Appendix A) was prepared for the proposed project. Within the assessment, the proposed project was analyzed with discussion on all modes of transportation. For example, Exhibit 4-1 of Appendix A illustrates the Project Trip Distribution would result in vehicular trips utilizing north- and south-bound Dudley Street and east- and west-bound entrances to the I-10 freeway. As discussed in Appendix A, the proposed project is not anticipated to result in a significant adverse effect onto traffic throughout the city. Under CEQA Guidelines Section 15064.3, a project's effect on automobile delay shall not constitute a significant environmental impact. Therefore, the proposed project would be consistent with this goal.
7D. G3: Support regional effort to extent feasible, to reduce greenhouse gas (GHG) emissions from cars and light trucks.	**Consistent.** The proposed project would introduce multi-family residential development in a city where there is an identified under supply of housing, according to the General Plan. The creation of housing near jobs located within the City and surrounding area would reduce vehicle miles traveled and, thereby, support regional efforts to reducing GHG emissions. In addition, residents have the option to utilize existing transit service (Foothill Transit's Line 699 and 197) within the project area. Proximity to transit facilities are another way in which the project and its location support regional efforts to reduce GHG emissions. Furthermore, the proposed project's potential impacts associated with greenhouse gas emissions were determined to be less than significant (Appendix D). Therefore, the proposed project would be consistent with this goal.
7D. G5: Minimize the impacts of freeways on the quality of life of Pomona's residents.	**Consistent.** The proposed project would not result in the expansion or alteration of existing freeways. In addition, the project site is supported by alternative transportation modes with proposed sidewalk infrastructure to access the site via public transit, bicycle, or by foot. Therefore, the proposed project would be consistent with this goal.
Street Systems	
7D. G9: Expand the choices of available transportation modes to effectively increase the freedom of movement for Pomona's residents and reduce reliance on the automobile.	**Consistent.** As described in the Traffic Impact Analysis (Appendix A), the existing circulation network around the project site is supported by transit service, bicycle, and pedestrian facilities. The proposed project would not interfere with existing alternative transportation modes from the

Table 9
Mobility & Access Consistency Analysis

Goal/Policy	Analysis
	automobile. Therefore, the proposed project would be consistent with this goal.
7D. G10: Develop beautiful, livable, safe, and multi-modal streets that are flattering to the City's identity.	**Consistent.** As described in the Traffic Impact Analysis (Appendix A), the existing circulation network around the project site is supported by transit service, bicycle, and pedestrian facilities. For example, a network of sidewalks within the project would connect to the project site's entrance to the adjacent off-site pedestrian infrastructure (i.e., sidewalks and crosswalks). The proposed project would not interfere with existing alternative transportation modes from the automobile. Therefore, the proposed project would be consistent with this goal.
7D. P10: Require proposed development to implement or fund capital improvements to 1) maintain sidewalks, roadway paving, and landscaping 2) implement streetscape design improvements, and 3) accommodate growth with an emphasis on reduced reliance on the automobile.	**Consistent.** The proposed project would redevelop an existing vacant lot to a new multi-family residential community. Implementation of the project would include the modification of the intersection of Dudley Street and I-10 Eastbound (EB) Ramps/Murchison Avenue to an all-way stop control. A permit for this improvement will be required from Caltrans. Additionally, the project site is located within an identified low vehicle-miles traveled area. The construction of the street design improvement would ensure consistency with the City's policy. Therefore, the project is consistent.
7D. P15: Use the Motor Vehicle Level of Service (LOS) Guidelines (Figure 7-D.9) and the Traffic Congestion Management Policy (Figure 7-D.10) to pursue efficient, balanced, multi-modal circulation.	**Consistent.** Although Level of Service Guidelines are no longer used as a threshold of significance under the State CEQA Guidelines, as a condition of project approval, the proposed project would include the modification of the intersection of Dudley Street and I-10 EB Ramps/Murchison Avenue to an all-way stop control. A permit for this improvement will be required from Caltrans. The construction of the street design improvement would comply with the City's policy. Therefore, the project is consistent.
7D. P18: Ensure that new developments provide an integrated pattern of streets and pedestrian paths that provide connections between neighborhoods. As part of the City's Subdivision Ordinance, establish street connectivity requirements that: • Discourage gated entrances and restricted public access to subdivision/residential streets; • Provide street and pedestrian connections to adjacent areas to enable more efficient movement throughout the City. Avoid	**Consistent.** Under existing conditions, the project site is a vacant lot surrounded by chain-link fencing. Implementation of the proposed project would redevelop the site to support a new multi-family residential community. Proposed designs include new fencing and landscaping features. In addition, the proposed project would integrate a pattern of internal sidewalk and street network for connections within the site and at the project site's entrance. Construction and operation of the project would not interfere with the existing street and pedestrian paths surrounding the project site. As such, the

Table 9
Mobility & Access Consistency Analysis

Goal/Policy	Analysis
single-point-access neighborhoods and cul-de-sacs; • Align streets with existing arterials and collector streets in adjacent areas; and • Limit block lengths to no more than 500 feet and encourage four-way intersections to increase accessibility and connectivity.	proposed project would maintain existing connectivity conditions. The project would be consistent with this policy.
Traffic Calming	
7D. G14: Minimize the negative impacts of motor vehicle traffic on residential neighborhoods where appropriate.	**Consistent.** As described in the Traffic Impact Analysis (Appendix A), the project's anticipated vehicle trip distribution would consist of 75% of vehicle trips to and from the main entrance at Murchison Avenue. Approximately 10% of the anticipated trips are expected to travel into the adjacent neighborhood to the east. As such, a majority of the project trips would not go into residential neighborhoods. Furthermore, the project site's entrance is located on the west and away from the adjacent eastern residential neighborhood. Therefore, the project's design would continue to minimize negative impacts to the nearby residential neighborhoods. The project would be consistent with this goal.
7D. G15: Preserve the livability of and increase the safety in residential areas while protecting neighborhood connectivity and basic accessibility.	**Consistent.** As described in the Traffic Impact Analysis (Appendix A), the project's anticipated vehicle trip distribution would consist of 75% of vehicle trips to and from the main entrance at Murchison Avenue. Approximately 10% of the anticipated trips are expected to travel into the adjacent neighborhood to the east. As such, a majority of the project trips would not go into adjacent residential neighborhoods and not result in a potential increase of traffic-related safety risk. The project site's entrance is located on the west and away from the adjacent eastern residential neighborhood. Development of the proposed project would change the connectivity and accessibility of the neighborhood to the east of the project site with roads such as Dudley Street. The project would redevelop an existing vacant lot that is surrounded by chain-link fencing. As stated above, the project would not adversely impact the neighborhood from traffic-related circulation. The project's design, specifically the location of the main entrance, would minimize negative impacts to the nearby neighborhood. Therefore, the project would be consistent with this goal.

Table 9
Mobility & Access Consistency Analysis

Goal/Policy	Analysis
Public Transit	
7D. G17: Adopt land use policies that emphasize transit-oriented development near existing or planned transit corridors.	**Consistent.** The project area is currently served by Foothill Transit with bus services via Line 197 and 699. Access to Line 699 is available at the Fairplex Park & Ride, located north of the I-10 Freeway and west of Dudley Street, within one-half mile of the project site. In addition, the closest bus stop to access Line 197 is located at the intersection of Dudley Street and Orange Grove Avenue, approximately 0.43 miles to the south. The available lines serve destinations between Downtown Los Angeles, Pomona Transit Center, and Montclair Transit Center (Appendix A). The project would not interfere with the existing transit service and would be served by existing transit corridors. The proposed project would not interfere with this goal.
7D. P33: Require site designs that complement transit stops and pedestrian linkages nearby.	**Consistent.** The project area is currently served by Foothill Transit with bus services via Line 197 and 699. Access to Line 699 is available at the Fairplex Park & Ride, located north of the I-10 Freeway and west of Dudley Street, within one-half mile of the project site. In addition, the closest bus stop to access Line 197 is located at the intersection of Dudley Street and Orange Grove Avenue, approximately 0.43 miles to the south. The available lines serve destinations between Downtown Los Angeles, Pomona Transit Center, and Montclair Transit Center (Appendix A). The existing pedestrian facilities provide connectivity and access to existing bus stop locations. The proposed project would not interfere with existing conditions. Therefore, the proposed project would be consistent with this policy.
Pedestrian Circulation	
7D. G19: Improve pedestrian safety and comfort along City streets, particularly in residential neighborhoods and areas where significant pedestrian activity is envisioned as identified in Section 6 Pomona Tomorrow.	**Consistent.** The existing pedestrian facilities provide connectivity with mostly built-out curb-and-gutter improvements in place and sidewalks (Appendix A). The project would include sidewalks on site which would connect to off-site pedestrian infrastructure at the site's entrance. The proposed project would improve pedestrian safety compared to existing conditions by providing access and walkability from inside the project site to off-site destinations (i.e., Cortez Elementary School and the 7-Eleven convenience store). Therefore, the proposed project would be consistent with this goal.

Table 9
Mobility & Access Consistency Analysis

Goal/Policy	Analysis
7D. G20: Foster walkable and accessible street environments that connect Pomona's many unique neighborhoods and districts.	**Consistent.** The existing pedestrian facilities provide connectivity with mostly built-out curb-and-gutter improvements in place and sidewalks (Appendix A). The project would include sidewalks on site which would connect to off-site pedestrian infrastructure at the site's entrance. The proposed project would improve pedestrian safety compared to existing conditions by providing access and walkability from inside the project site to off-site destinations (i.e., Cortez Elementary School and the 7-Eleven convenience store).Therefore, the proposed project would be consistent with this goal.
7D. P37: Create pedestrian- and bicycle-only mid-block cut-throughs to enhance neighborhood interconnectivity where street connections are limited due to existing cul-de-sac or dead-end conditions, grade separations, property ownership, or topographical challenges.	**Consistent.** Surrounding the project site are existing pedestrian facilities which currently provide connectivity with mostly built-out curb-and-gutter improvements in place and sidewalks (Appendix A). On site, the proposed project would include designs supporting pedestrian connectivity through landscaped sidewalk pathways. The proposed project would not interfere with surrounding area's existing conditions. Therefore, the proposed project would be consistent with this goal.
7D. P40: Improve pedestrian crosswalks at street intersections and highlight mid-block crosswalks. • Visually highlight crosswalks through a change in paving material, lighting, signage, and/or signalization. • Provide pedestrian refuges on very wide roadways where possible. • Maintain existing small blocks and limit new block sizes with maximum block size regulations in the Zoning Ordinance. • Provide mid-block crosswalks in high pedestrian traffic districts with long faces	**Consistent.** The existing pedestrian facilities provide good connectivity with mostly built-out curb-and-gutter improvements in place and sidewalks (Appendix A). These improvements would include landscaping and alternative routes away from the internal roadway network and within a landscaped open space which would include lighting, typical paving material, and designs promoting safety and walkability. Therefore, the proposed project would be consistent with this policy.
7D. P48: Require pedestrian site access for all new development and identify missing elements during the development review process.	**Consistent.** Surrounding the project site are existing pedestrian facilities which currently provide connectivity with mostly built-out curb-and-gutter improvements in place and sidewalks (Appendix A). On site, the proposed project would include designs supporting pedestrian connectivity through landscaped sidewalk pathways. The proposed project would also include sidewalk infrastructure which would connect with existing sidewalks off site. Therefore, the proposed project would be consistent with this policy.
Bicycle Circulation	

Table 9
Mobility & Access Consistency Analysis

Goal/Policy	Analysis
7D. G24: Require new development or redevelopment to provide bicycle parking where appropriate and ensure it is located in safe, prominent locations.	**Consistent.** Consistency with this goal would be ensured through the City's plan check and permitting process. While the project would not specifically include new bicycle parking, each individual home and homeowner would have the ability to store bicycles within their individual garages.
Parking	
7D. G26: Align the amount of parking available and the amount of parking provided by new development with the real pattern of anticipated parking demand.	**Consistent.** As discussed in Section 2, Project Description, above, parking would be provided within building garages and in separate and designated guest parking locations throughout the project site. In compliance with the City's Municipal Code, the applicant proposes 339 parking spaces (299 residential and 40 for guests). The applicant requests a 15% reduction from the 398 parking spaces required by the Code. As such, the project proposes the real pattern of anticipated parking demand. Therefore, the project would be consistent with this goal.
7D. G27: Maximize shared parking opportunities.	**Consistent.** As discussed in Section 2, Project Description, above, designated guest parking locations throughout the project site. In compliance with the City's Municipal Code, the applicant proposes 339 parking spaces (299 residential and 40 for guests). The applicant requests a 15% reduction from the 398 parking spaces required by the Code. As such, the proposed design's availability of guest parking maximizes shared parking opportunities for residents and guests on site. Therefore, the project would be consistent with this goal.
7D. G28: Ensure that parking facilities do not have a negative impact on the physical experience and character of Pomona's neighborhoods, districts, and corridors.	**Consistent.** The private roadway network within the project site would consist of a 26-foot drive aisle with a sidewalk on both sides of the street. The roads within the project site consist of one private street which is proposed to loop around a portion of the proposed townhomes and feature eight private alley lots. Parking would be provided within building garages and in separate and designated guest parking locations throughout the project site. The project's proposed design would be consistent with the requirements outlined in the City's Zoning Code. Therefore, the project would be consistent with this goal.

Table 9
Mobility & Access Consistency Analysis

Goal/Policy	Analysis
7D. P69: Avoid the appearance of a "sea of asphalt" in surface parking lot design and maximize shading with large trees planted throughout parking areas.	**Consistent.** The private roadway network within the project site would consist of a 26-foot drive aisle with a sidewalk on both sides of the street. The roads within the project site consist of one private street which is proposed to loop around a portion of the proposed townhomes and feature eight private alley lots. Parking would be provided within building garages and in separate and designated guest parking locations throughout the project site. Landscaping is proposed throughout the site, along sidewalks and the internal street network. In addition, the proposed project would result in the inclusion of open space on site. Furthermore, the project's design does not include a large surface parking lot and as previously mentioned, would support design features that would result in shade. Therefore, the project would be consistent with this policy.

3.7 Conservation

The Conservation Component of the General Plan identifies policies for biological resources, air quality, water resources, slopes and drainage and agricultural lands. Table 10, below, demonstrates the proposed project's consistency with applicable goals and policies.

Table 10
Conservation Consistency Analysis

Goal/Policy	Analysis
Environmental Sustainability	
7E. G1: Achieve the City's vision for Pomona Tomorrow without adverse environmental impacts that compromise the ability of future generations to meet their needs.	**Consistent.** As described in Section 1.3, this document represents supporting evidence to determine the proposed project is exempt from further environmental review through State CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan, General Plan, or Zoning). This exemption mandates that "projects which are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. This streamlines the review

Table 10
Conservation Consistency Analysis

Goal/Policy	Analysis
	of such projects and reduces the need to prepare repetitive environmental studies." As such, the proposed project's scope is included within the environmental analysis of the General Plan Update EIR and would not result in adverse environmental impacts. Therefore, the project would be consistent with this goal.
Biological Resources and Habitat	
7E. G2: Protect special status species and their supporting habitats within Pomona, including species that are state or federally listed as endangered, threatened or rare (as shown in Figure 7-E.2)	**Consistent.** According to the Biological Technical Report (Appendix B) prepared for the proposed project, the project site consists of disturbed grassland and determined no special-status vegetation, plant, or animals were detected. As such, the project would not interfere with this goal. Therefore, the project would be consistent with this goal.
7E. G3: Preserve critical habitat areas and sensitive species (as illustrated in Fig.7-E.2)	**Consistent.** According to the Biological Technical Report (Appendix B) prepared for the proposed project, no special-status vegetation, plant, or animals were detected. In addition, the report found that the project site is not within areas mapped by the United States Fish and Wildlife Service as critical habitat. As such, the project would not interfere with this goal. Therefore, the project would be consistent with this goal.
7E. G4: Conserve wildlife ecosystems and sensitive habitat areas in the following order of protection preference: 1) avoidance, 2) on-site mitigation and 3) off-site mitigation	**Consistent.** According to the Biological Technical Report (Appendix B) prepared for the proposed project, the project would not result in a significant impact to biological resources according to the thresholds of significance determined by the State CEQA Guidelines. In addition, in compliance with existing regulations, such as the Migratory Bird Treaty Act and the City's Tree Protection and Preservation Plan Ordinance, protection for nesting birds and locally significant trees would be ensured. Compliance would align with the City's goal of conservation. Therefore, the proposed project would be consistent with this goal.
7E. G5: Preserve open space essential for the conservation of Pomona's biological resources.	**Consistent.** The project site, under existing conditions, is vacant and disturbed land. No designated open space is located on-site. The project would not interfere with the City's goal. Therefore, the proposed project would be consistent with this goal.
7E. G6: Protect the natural environment, including wildlife, from destruction during new construction or redevelopment within Pomona.	**Consistent.** According to the Biological Technical Report (Appendix B) prepared for the proposed project, the project site consists of disturbed

Table 10
Conservation Consistency Analysis

Goal/Policy	Analysis
	grassland and determined no special-status vegetation, plant, or animals were detected. As such, the project would not interfere with this goal. Therefore, the project would be consistent with this goal.
7E. P2: Contribute to regional goals of conserving wildlife ecosystems, sensitive habitat areas, and undeveloped land by promoting a more efficient pattern of development within the City as illustrated in the Pomona Tomorrow General Plan diagram	**Consistent.** The project site is not subject to any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans as discussed in Appendix B. Implementation of the project would not interfere with this policy. Therefore, the project would be consistent with this policy.
7E. P3: Preserve, as open space, those lands that are identified, through environmental review, as sensitive habitat areas. Require setbacks to development as buffer areas, as appropriate.	**Consistent.** The project site is not adjacent to large habitat blocks and is adjacent to an interstate highway, major roads, and urban development. The project will not interfere substantially with the movement of native resident or migratory fish or wildlife species and does not function as a critical habitat linkage or wildlife corridor (Appendix B). The project would not interfere with the City's goal of preservation of open space. Therefore, the project is consistent with this policy.
7E. P5: Work with county, state and federal agencies to ensure that development within the City of Pomona does not substantially affect state or federally listed rare, endangered or threatened species or their habitats. Require assessments of biological resources prior to approval of any development in or within 300 feet of ecologically sensitive areas as shown in Fig.7-E.2	**Consistent.** A Biological Technical Report (Appendix B) was prepared for the proposed project. The project site consists of disturbed grassland and determined no special-status vegetation, plant, or animals were detected. In addition, the project site is not within 300 feet of ecologically sensitive areas as shown in Figure 7-E.2 of *Pomona Tomorrow*. As such, the project would not interfere with this policy. Therefore, the project would be consistent with this policy.
7E. P10: Preserve mature trees and vegetation, including wildflowers, along the City's scenic roadways.	**Consistent.** The project is subject to the City's Tree Protection and Preservation Plan Ordinance. As such, a Protected Tree Report (Appendix C) was prepared to recommend avoidance measures as conditions of approval and compliance with City regulation. Therefore, the project would be consistent with the City's preservation policy.
7E. P11: Prior to development of areas with drainage features such as ponds, detention basins, or wetlands, a site specific investigation shall be conducted to define the extent of drainage features, determine wetland permit requirements, and propose measures to mitigate any impacts on the resources.	**Consistent.** The project site was evaluated for the presence of jurisdictional waters, including waters of the U.S. (including wetlands) subject to the jurisdiction of the U.S. Army Corps of Engineers and the Regional Water Quality Control Board, and waters of the State (including riparian vegetation) subject to the jurisdiction of California Department of Fish and Wildlife. As determined by the Biological

Table 10
Conservation Consistency Analysis

Goal/Policy	Analysis
	Technical Report (Appendix B), the project site does not contain features considered waters of the U.S. or waters the State. Therefore, as described, the project site was analyzed, consistent with the City's policy.
7E. P12: Conduct presence/absence biological surveys for sensitive plant and animal species in during the appropriate time of year and time of day in natural areas prior to any construction activities proposed adjacent to or within natural areas. If no special status species are detected during these surveys, then construction-related activities may proceed. If listed special status species are found within the construction zone, then avoid these species and their habitat or consult with U.S. Fish and Wildlife Service and/or California Department of Fish and Game prior to the commencement of construction.	**Consistent.** According to the Biological Technical Report (Appendix B) prepared for the proposed project, the project site consists of disturbed grassland and determined no special-status vegetation, plant, or animals were detected. Specific avoidance measures were recommended by the report as conditions of approval. Therefore, the project would be consistent with this policy.
7E. P13: Conduct nesting bird surveys prior to any construction activities, including projects proposed to remove/disturb native and ornamental landscaping and other nesting habitat for native birds during bird breeding season from March 1 through August 31 (as early January 1 for some raptors). If no nesting birds are detected during these surveys, then construction-related activities may proceed. Active nests within and adjacent to the construction zone should be avoided and provided a minimum buffer as determined by a biological monitor (CDFW recommends a 300 foot nest avoidance buffer or 500 feet for all active raptor nests) or consult with the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife prior to the commencement of construction.	**Consistent**. As recommended by the Biological Technical Report, the following standard avoidance measure complies with the City's policy and, thus, the project is consistent with this policy: • Conduct nesting bird surveys prior to any construction activities, including projects proposed to remove/disturb native and ornamental landscaping and other nesting habitat for native birds during bird breeding season from March 1 through August 31 (as early January 1 for some raptors). If no nesting birds are detected during these surveys, then construction-related activities may proceed. Active nests within and adjacent to the construction zone should be avoided and provided a minimum buffer as determined by a biological monitor (CDFW recommends a 300 foot nest avoidance buffer or 500 feet for all active raptor nests) or consult with the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife prior to the commencement of construction.
Air Quality	
7E. G8: Contribute to attainment of regional goals by improving ambient air quality levels within Pomona	**Consistent.** An air quality assessment (Appendix D) was conducted for the proposed project and determined the project would not conflict with or obstruct implementation of an air quality plan. As such, the project would contribute to the attainment

Table 10
Conservation Consistency Analysis

Goal/Policy	Analysis
	of regional air quality goals. Therefore, the project would be consistent with this goal.
7E. G9: SB375: Support regional efforts to reduce greenhouse gas emissions to the extent feasible.	**Consistent.** A greenhouse gas emissions assessment (Appendix D) was conducted for the proposed project and determined less than significant impacts would occur under State CEQA Guidelines thresholds of significance. In addition, the proposed project would introduce multi-family residential development in a city where there is an identified under supply of housing, according to the General Plan. The creation of housing near jobs located within the City and surrounding area would reduce vehicle miles traveled and, thereby, support regional efforts to reducing GHG emissions. Therefore, the proposed project would be consistent with this goal.
7E. P18: Require dust abatement actions for all new construction and redevelopment projects.	**Consistent.** As discussed in the air quality assessment (Appendix D) conducted for the project, South Coast Air Quality Management District Rule 403 would be required during project construction. Rule 403 addresses fugitive dust and controls the emissions during construction activities. As such, the project would be consistent with this policy.
7E. P22: Minimize emissions from residential and commercial uses through the following: • Encourage new development to incorporate sustainability design solutions such as those outlined in the LEED ratings systems; • Require high efficiency heating and other appliances, such as cooking equipment, refrigerators, furnaces and low NOx water heaters in new and renovated residential units. Require the Building Division to maintain these standards; • Require new residential and commercial buildings to comply with or exceed requirements of CCR Title 24; • Encourage passive solar building design and landscaping conducive to passive solar energy use for both residential and commercial uses, i.e., building orientation in a south to southeast direction, planting deciduous trees on west sides of structures, landscaping with drought resistant species, and use of groundcover rather than pavement to reduce heat reflection;	**Consistent.** The proposed project would be required to comply with 2019 CALGreen Code, which includes: an alignment of building code engineering requirements with the national standards that include anchorage requirements for solar panels, provides design requirements for buildings in tsunami zones, increases Minimum Efficiency Reporting Value (MERV) for air filters from 8 to 13, increased electric vehicle charging requirements in parking areas, and sets minimum requirements for use of shade trees (Appendix D). Compliance with the CALGreen Code would result in design features that would, therefore, be consistent with this policy.

Table 10
Conservation Consistency Analysis

Goal/Policy	Analysis
• Encourage the use of battery-powered, electric, or other similar equipment that dos not impact local air quality for non-residential maintenance activities; • Provide natural gas hookups to fireplaces or require residential use of EPA-certified wood stoves, pellet stoves, or fireplace inserts.	
Water Resources	
7E. G14: Enhance the quality of groundwater and surface water resources, prevent their contamination, and reduce the amount of polluted runoff that reaches the City's storm drain system	**Consistent.** A water quality bio-filtration chamber is proposed on the project site's northwest corner, which would enhance the quality of surface runoff from the project site into the groundwater. Furthermore, the project would comply with existing State and local regulations on water and groundwater quality. Compliance is mandated by the Los Angeles Regional Water Quality Control Board through the implementation of a Stormwater Pollution Prevention Plan (SWPPP). In addition, the City requires a Standard Urban Stormwater Mitigation Plan for the redevelopment of the site. These plans identify Best Management Practices (BMPs), which ensure quality in site design, source control, and treatment control. Therefore, the project would be consistent with this goal.
7E. P24: For both private and public construction in new development and renovations, encourage rainwater and wastewater Best Management Practices (BMPs) to minimize rainwater runoff, and maximize rainwater and greywater collection and reuse	**Consistent.** A water quality bio-filtration chamber is proposed on the project site's northwest corner of the project site, which would enhance the quality of surface runoff from the project site into the groundwater. Furthermore, the project would comply with existing State and local regulations related to water and groundwater quality. Compliance is mandated by the Los Angeles Regional Water Quality Control Board through the implementation of a Stormwater Pollution Prevention Plan (SWPPP). In addition, the City requires a Standard Urban Stormwater Mitigation Plan for the redevelopment of the site. These plans identify Best Management Practices (BMPs), which ensure quality in site design, source control, and treatment control. Therefore, the project would be consistent with this policy.
7E. P25: Encourage the use of water efficient appliances and fixtures in new development and upgrades in existing development.	**Consistent.** A water quality bio-filtration chamber is proposed on the project site's northwest corner, which would enhance the quality of surface runoff from the project site into the groundwater. Therefore, the project would be consistent with this policy.

Table 10
Conservation Consistency Analysis

Goal/Policy	Analysis
7E. P26: Encourage low water use irrigation such as drip irrigation and rainwater capture systems.	**Consistent.** The project will be conditioned to comply with the City's Water Efficient Landscape Ordinance, which encourages low water use irrigation as well as the installation of drought tolerant and native plant species. Therefore, the project would be consistent with this policy.
7E. P27: Encourage the use of drought tolerant plant species (especially native plants), and low water use irrigation such as drip irrigation and rainwater capture systems.	**Consistent.** Landscaping is proposed throughout the project site including trees, shrubs, vines, and various groundcovers. Located on the northwestern corner of the project site is a proposed turf area, which is drought tolerant. The project will be conditioned to comply with the City's Water Efficient Landscape Ordinance, which encourages low water use irrigation as well as the installation of drought tolerant and native plant species. Therefore, the project would be consistent with this policy.
7E. P33: Require that all new development or expansion of existing facilities bear the cost of expanding the wastewater disposal system to handle the increased loads anticipated by development.	**Consistent.** Construction of the proposed project would include utility connection to surrounding infrastructure. These improvements would include the construction of various storm drain, water, and sewer lines, notably within the proposed street alignments. In addition, a water quality bio-filtration chamber is proposed on the project site's northwest corner of the project site. Project improvements would accommodate the redevelopment of the existing vacant lot to support 152 new townhomes. As such, these improvements would bear the cost of expanding the existing wastewater disposal system anticipated by the development and would comply with the City's policy requirement. Therefore, the proposed project would be consistent with this policy.
Energy	
7E. P41: Promote energy efficient patterns of development by implementing the vision of compact, clustered, transit oriented City structure outlined in Section 6. *Pomona Tomorrow*.	**Consistent.** The project applicant would be required to obtain a building permit from the City, and the City's plan check process would ensure that project plans and specifications are in compliance with the California Building Code and local ordinances, including Title 24 of the California Code of Regulations. As such, the proposed project would promote energy efficiency through compliance with existing regulation. As discussed above, the project site is also located in a project area currently served by existing transit service. Foothill Transit provides Lines 197 and 699, which have bus stop connections within a half-mile of the project site.

Table 10
Conservation Consistency Analysis

Goal/Policy	Analysis
	Therefore, the project would be consistent with this policy.

3.8 Community Design

The City's Community Design Component identifies goals and policies to ensure high quality new development, redevelopment, renovations, and historic preservation throughout the city to add value to the surrounding context (City of Pomona 2014). Table 11, below, demonstrates the proposed project's consistency with applicable goals and policies.

Table 11
Community Design Consistency Analysis

Goal/Policy	Analysis
Building, Site, and Landscape Design	
7F. G2: Improve the livability and cultural life of the community through physical design considerations in areas where it is less than satisfactory such that the result is an environment defined by quality and cohesiveness.	**Consistent.** The proposed project would result in the redevelopment of an existing vacant lot. Redevelopment of the project site would enhance the quality of life within the surrounding area by creating new housing that is complimentary to and enhances the surrounding areas' architectural style and landscaping features. As such, implementation of the project would be consistent with this goal.
7F. G4: Ensure high quality new development and redevelopment throughout the City that is designed appropriately to add value to its surrounding context.	**Consistent.** The proposed project would result in the redevelopment of an existing vacant lot. Redevelopment of the project site would enhance the quality of life within the surrounding area by creating new housing with complimentary architectural style and landscaping. As such, implementation of the project would ensure high quality redevelopment compared to the existing vacant lot. Therefore, the proposed project would be consistent with this goal.
7F. P2: Promote diversity in parcel and home sizes, with careful transitions between development at different scales and densities. Ensure that design review and standards require projects to: • Employ a change in heights, massing and/or design character to create careful transitions where a change is proposed in scale and density. • Repeat vertical and horizontal design elements from existing surrounding development.	**Consistent.** The proposed project would introduce multi-family residential land uses onto the site, consistent with the project site's designation by the General Plan Update. Consistency with the City's General Plan promotes diversity in land uses. As discussed in Section 2, Project Description, of this document, the project is consistent with the General Plan, but not with the zoning. Per Government Code 65589.5, the City may require the proposed project to comply with the objective standards and criteria of the zoning which is consistent with the general plan.

Table 11
Community Design Consistency Analysis

Goal/Policy	Analysis
• Where parcels change dramatically in size, provide for privacy of nearby smaller parcels and maintain some visual continuity along the street. • Design building scale to gradually increase or decrease to match surrounding development. • Ensure that new development does not cast significant sun shadow over adjacent, small scale development by utilizing detailed shadow studies as needed	In this case the project would comply with the objective standards of the R-3 Medium Density Multiple-family district. As provided in Government Code Section 65589.5, the General Plan height standards are to prevail over zoning code provisions, and thus a building height variance would not be required. Furthermore, the proposed project would require the approval of a Tentative Tract Map, Conditional Use Permit, and Major Oak Tree Permit. Compliance with applicable zoning regulations (R-3 Medium Density Multiple-family district) for the project site, per Government Code 65589.5, would be ensured through the City's plan check and permitting process. Therefore, the project would be consistent with this policy.
7F. P3: In new development, locate larger scale buildings and more active uses, such as multi-family housing, commercial uses, institutional uses, or parks along wider streets with building entrances oriented towards public sidewalks	**Consistent.** The proposed project, as further described in Section 2, of this document would result in the development of multi-family housing located adjacent to a Minor arterial, Dudley Street. As such, the proposed project would locate multi-family housing along wider streets with the project site entrance oriented toward existing public sidewalks surrounding the project site's vicinity. Therefore, the project would be consistent with this policy.
7F. P5: Promote developments that fit with the scale and character of their district or neighborhood by: • Utilizing varied massing, roof types, and floor plans. • Articulating building facades with distinctive architectural features such as windows, doors, chimneys and other such elements. Use articulation of building massing to reveal internal organization of building elements such as stairs and elevators, atriums, internal gathering spaces and major interior spaces	**Consistent.** Although the project site's zoning is inconsistent with the General Plan designation , the City, per Government Code 65589.5, may require the proposed project to comply with the objective standards and criteria of the applicable zoning district which is consistent with the general plan. In this case the project would comply with the zoning regulations of the R-3 Medium Density Multiple-family district. As described in Section 2, Project Description, of this document, the project would include four types of townhome floor plans which would result in the construction of 40 units consisting of 2 bedrooms, 54 units with 3 bedrooms, and 38 larger units with 3 bedrooms. In addition, the proposed residential design would feature two different contemporary eclectic schemes. One scheme would include stucco and brick finishes, concrete tile roof tops, and a collection of brown and blue paints. The other scheme would include stucco and brick finishes, concrete tile roof tops, and a collection of gray and brown paints. Compliance of these standards would be ensured through the City's

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Community Design Consistency Analysis

Goal/Policy	Analysis
	plan check and permitting process. Therefore, the project would be consistent with this policy.
7F. P6: Provide visual interest and express the human scale in building design with: • Architectural building base treatments • Varied building colors, materials, and site landscaping treatments • Pedestrian-scale signage and ornamental lighting	**Consistent.** Implementation of the proposed project would result in the redevelopment of a vacant lot. The proposed residential design would feature two different contemporary eclectic schemes. One scheme would include stucco and brick finishes, concrete tile roof tops, and a collection of brown and blue paints. The other scheme would include stucco and brick finishes, concrete tile roof tops, and a collection of gray and brown paints. Furthermore, the project shall comply with the objective standards of the R-3 Medium Density Multiple-family district. Compliance would be ensured through the City's plan check and permitting process. Therefore, the project would be consistent with this policy.
7F. P7: Encourage creativity and high quality in the design of residential buildings. • Design neighborhoods to age gracefully: Incorporate durable building materials and high standards of construction, not only for longevity, but also to reduce the overall maintenance costs for residents	**Consistent.** Implementation of the proposed project would result in the redevelopment of a vacant lot. The project shall comply with the design standards of the R-3 Medium Density Multiple-family district. Compliance would be ensured through the City's plan check and permitting process. Therefore, the project would be consistent with this policy.
7F. P8: Ensure that garages do no dominate streetscapes. • Locate parking to the side of or behind buildings and along alleyways to maintain an active street edge, especially where pedestrian activity is desired. • Discourage blank, unarticulated parking garage facades. • Minimize the facade width of single-family homes so that no more than fifty percent (50%) of the facade is occupied by a garage. • Allow for reductions of front yard setbacks to encourage garages to be set back from the front edge of the house. • Orient garage doors 90 degrees from the street. • Incorporate design elements on the second level above garages (such as bay windows or balconies) to reduce the scale and visual dominance of the garage.	**Consistent.** The proposed project would include one private street which is proposed to loop around a portion of the proposed townhomes and include eight private alley lots. Along these alleys are the entrances to the townhomes' garages. Parking would be provided within the buildings' garages as well as in separate and designated guest parking locations throughout the project site. The proposed garages and parking locations would not dominate the proposed design on site. Therefore, the project would be consistent with this policy.
7F. P9: Maintain an open relationship between buildings and street edge, avoiding fencing and significant landscape barriers, except for street	**Consistent**. The proposed project site is adjacent to Dudley Street, which is considered a Minor arterial by the General Plan. Landscaping, walls, and fences

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trees and sidewalk plantings. Along major collectors and corridors, allow fencing, low walls, and/or landscaping that maintains visibility and visual interaction between residences and the street edge. Limit materials to wood, stone, decorative metal, or low hedges	are incorporated within the proposed project's design between the street and the proposed residences. The project's proposed building design, landscaping, walls and fences would comply with applicable zoning regulations (R-3 Medium Density Multiple-family district) for the project site, per Government Code 65589.5. Compliance with the City's regulations governing open space, setbacks, walls and fences would be ensured through the City's plan check and permitting process. As such, the proposed project would be consistent with this policy.
Sustainable Development	
7F. G7: Encourage the application of sustainable site planning and "green" building practices in Pomona to improve quality-of-life and achieve the City's Conservation goals.	**Consistent.** The proposed project would be required to comply with 2019 CALGreen Code, which includes the following: an alignment of building code engineering requirements with the national standards that include anchorage requirements for solar panels, provides design requirements for buildings in tsunami zones, increases Minimum Efficiency Reporting Value (MERV) for air filters from 8 to 13, increased electric vehicle charging requirements in parking areas, and sets minimum requirements for use of shade trees (Appendix D). With compliance of CALGreen regulations, the project would, therefore, be consistent with this goal.
7F. P16: Prepare and implement "green" building guidelines and/or standards, appropriate to the Pomona context, to ensure high levels of energy efficiency and reduction of environmental impacts associated with construction and operations of buildings. Ensure that these guidelines/standards: • Require documentation demonstrating that building designs meet minimum performance targets through submittal of performance reports to the City as part of the building permit application. • Meet or exceed California's most recent Title 24 regulation standards for building energy efficiency. • Require building projects to meet or exceed a performance target, but allow complete flexibility in the methods used. • Reduce resource or environmental impacts, using cost-effective and well-proven design and construction strategies.	**Consistent.** The proposed project would be required to comply with 2019 CALGreen Code, which includes the following: an alignment of building code engineering requirements with the national standards that include anchorage requirements for solar panels, provides design requirements for buildings in tsunami zones, increases Minimum Efficiency Reporting Value (MERV) for air filters from 8 to 13, increased electric vehicle charging requirements in parking areas, and sets minimum requirements for use of shade trees (Appendix D). With compliance of CALGreen regulations, the project would be consistent with this policy.

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7F. P18: Require Best Management Practices in all new development and substantial renovations within the City.	**Consistent.** Compliance with existing regulation, as stated previously, include the identification of Best Management Practices (BMPs), which ensure quality in site design, source control, and treatment control. Examples of such BMPs could include sandbag barriers, dust controls, perimeter controls, drain inlet protection, and proper construction site housekeeping practices. Therefore, the project would be consistent with this policy.
7F. P19: Require new development and substantial remodels to prepare and submit an Urban Runoff Mitigation Plan to the City's Engineering Division	**Consistent.** The proposed project would comply with existing local regulations related to stormwater runoff. Compliance would be ensured through the City's plan check and permitting process. The project includes a water quality bio-filtration chamber on the project site's northwest corner, which would enhance the quality of surface runoff from the project site flowing off site. Therefore, the project would be consistent with this policy.
Historic Preservation	
7F. G8: Protect historic and cultural resources from demolition, inappropriate alterations and incompatible development.	**Consistent.** Based on the Phase I Cultural Resources Report (Appendix E) for the proposed project, no historical resources were found on the project site and the report determined there is a low potential of archaeological resources occurring on the project site during implementation of the project. The project would not interfere with this goal. Therefore, the project is consistent with this goal.
7F. G10: Promote the protection and preservation of important archaeological sites.	**Consistent.** The Phase I Cultural Resources Report (Appendix E) determined a low potential of archaeological resources would occur on the project site during implementation of the project. The project would not interfere with this goal. Therefore, the project is consistent with this goal.
7F. P35: Per the Guidelines for the California Environmental Quality Act (CEQA), require that new development avoid or reduce potential impacts to archaeological, paleontological and historic resources.	**Consistent.** Based on the Phase I Cultural Resources Report (Appendix E) prepared for the proposed project, no historical resources were found on the project site and the report determined there is a low potential of archaeological resources occurring on the project site during implementation of the project. The Paleontological Assessment (Appendix F) determined the project site is within an area of high sensitivity for paleontological resources. As such, the report recommended avoidance measures to monitor grading activities starting at a depth of 10 feet below the surface. Therefore, the proposed project would comply with this policy and be consistent with this policy.

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Goal/Policy	Analysis
7F. P37: Require that, prior to the issuance of a demolition or grading permit, developers of a property that contains a historic resource structure as defined by CEQA retain a qualified consultant to record the structure in accordance with U.S. Secretary of the Interior Guidelines (which includes drawings, photographs, and written data) and submit this information to the Pomona Historic Preservation Commission and City Planning Division.	**Consistent.** Based on the findings of the Phase I Cultural Resources Report (Appendix E) prepared for the proposed project, no historical resources were found on the project site. Therefore, the proposed project complies with the City's policy requirement and is consistent.
7F. P42: Require a qualified paleontologist/archeologist to monitor all grading and/ or excavation where there is a potential to affect cultural, archeological or paleontological resources. If these resources are found, the applicant shall implement the recommendations of the paleontologist/archeologist, subject to the approval of the Planning Division.	**Consistent.** The Paleontological Assessment (Appendix F) determined that the project site is within an area of high sensitivity for paleontological resources. As such, the report recommended the following avoidance measure which complies with the City's policy: • Require a qualified paleontologist/archeologist to monitor all grading and/ or excavation where there is a potential to affect cultural, archeological or paleontological resources. If these resources are found, the applicant shall implement the recommendations of the paleontologist/archeologist, subject to the approval of the Planning Division.
7F. P43: Require new development to donate scientifically valuable paleontological or archaeological materials to a responsible public or private institution with a suitable repository, located within Pomona, or Los Angeles County, whenever possible.	**Consistent.** As described above in 7F.P42, in the event that a paleontological resource discovery occurs during the implementation of the proposed project, recommended measures and required regulations would be initiated. Similarly, although the Phase I Cultural Resources Report (Appendix E) determined there is a low potential of archaeological resources occurring on the project site, the General Plan policy requirement within 7F.P42 would apply requiring a qualified paleontologist/archeologist to monitor all grading and/ or excavation where there is a potential to occur. As such, in the event of a discovery, the required monitoring would lead to the requirement of this City policy to donate valuable cultural resources to a responsible public or private institution. Therefore, the project would comply with the City's policy requirement and be consistent.

3.9 Noise & Safety

The Noise & Safety Component of the General Plan addresses the environmental and man-made hazards affecting the city (City of Pomona 2014). These include noise generation, crime, seismic, geologic and soils hazards, wildland fire, hazardous material, and flooding. Table 12, below, demonstrates the proposed project's consistency with applicable goals and policies.

Table 12
Noise & Safety Consistency Analysis

Goal/Policy	Analysis
Noise	
7G. G1: Protect public health and welfare by eliminating or minimizing the effects of existing noise and vibration problems, and by minimizing the increase of noise and vibration levels in the future.	**Consistent.** The Noise Impact Analysis (included as Appendix G) for this project determined less than significant impacts would occur in accordance with the significance thresholds outlined in the State CEQA Guidelines. The Noise Impact Analysis recommends project design features (PDFs) that are either already depicted on the proposed project site plan and architectural plans or are required from city and State regulations. The following PDFs are listed below: 1. The project applicant shall construct the perimeter split face block wall as detailed in the proposed Wall Plan, with incorporation of the following height revisions that area also detailed in Figure 3 (of Appendix G) • An 8-foot high wall shall be constructed on the northernmost 200 feet of the west perimeter wall; and • A 6-foot high wall shall be constructed on the remainder of the west perimeter wall. 2. The project applicant shall provide upgraded windows and exterior doors for the following residential units that are also detailed in Figure 3 (of Appendix G) • For the northernmost units on Buildings 1 through 7, all second floor windows and exterior doors shall have a minimum Sound Transmission Class (STC) rating of 32 STC with ½-inch drywall, and all third floor windows shall have a minimum STC rating of 38 STC with 5/8-inch drywall on the exterior walls; • For the second and third northernmost units on Buildings 1

Table 12
Noise & Safety Consistency Analysis

Goal/Policy	Analysis
	through 7, all third floor windows shall have a minimum STC rating of 35 STC with ½-inch drywall on the exterior walls; • For the three southernmost units on Building 1, the west facing third floor windows shall have a minimum STC rating of 35 STC with ½-inch drywall on the exterior walls; and • For the four southernmost units on Building 7, the east facing third floor windows shall have a minimum STC rating of 35 STC with ½-inch drywall on the exterior walls. 3. The project applicant shall provide minimum 4-foot high screening walls around the perimeter of all ground level air conditioning compressor units. The wall shall be constructed using either concrete block or vinyl. As such, and further discussed in Appendix G, the proposed project would comply with these recommendations and, therefore, protect public health and welfare by eliminating or minimizing the effects of existing noise and vibration problems, and by minimizing the increase of noise and vibration levels in the future. As such, the project would be consistent with the City's goal.
7G. G2: Continue efforts to incorporate noise considerations into land use planning decisions, and guide the location and design of transportation facilities to minimize the effects of noise on adjacent noise-sensitive land uses.	**Consistent.** The Noise Impact Analysis (Appendix G) recommends project design features (PDFs) that are either already depicted on the proposed project site plan and architectural plans or are required from city and State regulations. Therefore, noise considerations are made into the project's design. The project does not include transportation facilities. However, the project would include an approximately 12-foot setback between the proposed residential buildings and the freeway. Therefore, the proposed project incorporates noise considerations to minimize the effects of noise. The project is consistent with this goal.
7G. P1: As part of development review, use Figure 7-G.1 (Land Use Compatibility for Community Noise Environments) to determine acceptable uses and insulation requirements in noise-impacted areas.	**Consistent.** The Noise Impact Analysis (Appendix G) determined compliance with existing noise and vibration regulations and the implementation of recommended PDFs, all project-related noise and vibration impacts would be reduced to less than

Table 12
Noise & Safety Consistency Analysis

Goal/Policy	Analysis
	significant levels and no mitigation is required. As such, the project would be consistent with the General Plan's Figure 7-G.1, Community Noise Exposure.
7G. P2: Discourage location of new noise-sensitive uses, primarily residential and educational facilities, in areas with projected noise levels greater than 65 dB CNEL, as shown in Figure 7-G.2 (Future Noise Contours). Where such uses are permitted, require incorporation of mitigation measures to ensure that interior noise levels do not exceed 45 dB CNEL, including: • Require that applicants for new noise-sensitive development, in areas subject to noise levels greater than 65 db CNEL, first obtain the services of a professional acoustical engineer to provide a technical analysis and design of mitigation measures. • In the Zoning Ordinance, require placement of fixed equipment, such as air conditioning units and condensers, inside or in the walls of new buildings or on rooftops of central units to reduce noise impacts on any nearby sensitive receptors. • Establish appropriate noise-emission standards to be used in connection with the purchase, use and maintenance of City vehicles.	**Consistent.** As shown in Figure 7-G.2 of *Pomona Tomorrow*, the project site is within the vicinity of future noise contours reaching between 65 dB CNEL and 70 dB CNEL. As such, a noise impact analysis (Appendix G) was prepared for the proposed residential project, in compliance with this policy. The Noise Impact Analysis recommends project design features (PDFs) for the proposed project, some of which are required by city and State regulations. The following PDFs are listed below and incorporated into the proposed project: 1. The project applicant shall construct the perimeter split face block wall as detailed in the proposed Wall Plan, with incorporation of the following height revisions that area also detailed in Figure 3 (of Appendix G) • An 8-foot high wall shall be constructed on the northernmost 200 feet of the west perimeter wall; and • A 6-foot high wall shall be constructed on the remainder of the west perimeter wall. 2. The project applicant shall provide upgraded windows and exterior doors for the following residential units that are also detailed in Figure 3 (of Appendix G) • For the northernmost units on Buildings 1 through 7, all second floor windows and exterior doors shall have a minimum Sound Transmission Class (STC) rating of 32 STC with ½-inch drywall, and all third floor windows shall have a minimum STC rating of 38 STC with 5/8-inch drywall on the exterior walls; • For the second and third northernmost units on Buildings 1 through 7, all third floor windows shall have a minimum STC rating of 35 STC with ½-inch drywall on the exterior walls;

Table 12
Noise & Safety Consistency Analysis

Goal/Policy	Analysis
	• For the three southernmost units on Building 1, the west facing third floor windows shall have a minimum STC rating of 35 STC with ½-inch drywall on the exterior walls; and • For the four southernmost units on Building 7, the east facing third floor windows shall have a minimum STC rating of 35 STC with ½-inch drywall on the exterior walls. 3. The project applicant shall provide minimum 4-foot high screening walls around the perimeter of all ground level air conditioning compressor units. The wall shall be constructed using either concrete block or vinyl. Therefore, the proposed project be consistent with the City's policy.
7G. P3 Continue to restrict noise and require mitigation measures for any noise-emitting construction equipment or activity	**Consistent.** The Noise Impact Analysis (included as Appendix G) for this project determined less than significant construction noise impacts would occur in accordance with significance thresholds outlined in the State CEQA Guidelines. Appendix G cites all planned construction equipment would comply with Section 18-309 of the Municipal Code, which would restrict the vibration noise that is perceptible on any nearby property. Section 18-309 of the Municipal Code defines the threshold of perception to be more than 0.05 inch per second RMS vertical velocity. Therefore, for each phase of construction, the nearest piece of equipment is recommended to be placed at the shortest distance to the nearest home to the east (20 feet away) and school to the south (22 feet away). In addition, each subsequent piece of equipment is recommended to be placed an additional 50 feet away. Compliance with existing regulations would restrict noise-emitting construction equipment and activity. Therefore, the proposed project would be consistent with this policy.
Crime and Gang Prevention	
7G. G3: Provide safe and secure environments for social interaction	**Consistent.** The proposed project would include on-site facilities such as a pool recreation area and a pool building. A total of 75,292 square feet would be utilized as common open space. Private open space varies depending on the proposed townhome plan

Table 12
Noise & Safety Consistency Analysis

Goal/Policy	Analysis
	type. All open space and recreational facilities on site would be maintained by a homeowner's association. Therefore, the proposed project would be consistent with this goal.
7G. P8: Consider public safety in the design of new development and public spaces.	**Consistent.** The proposed project is required to comply with the City's plan check process, which would ensure that project plans and specifications are in compliance with local ordinances. Plan check would include review by the Pomona Police Department for comment. Therefore, the proposed project would be consistent with this policy.
7G. P12: Institute the collection of development impact fees for all development projects to help pay for the needed police facilities.	**Consistent.** New development such as the proposed project would place an increased demand on police protection services. The payment of development fees and local taxes would incrementally support potential expansion of police protection services which may be warranted based on overall growth in the project area. Implementation and compliance with this policy would be ensured through the plan check and permitting process required of the project applicant. Therefore, the proposed project would be consistent with this policy.
7G. P19: Promote the integration of Crime Prevention Through Environmental Design (CPTED) principles into new development and public spaces. The three key principles of CPTED are: • Natural surveillance • Natural Access Control • Territorial Reinforcement	**Consistent.** The project's design would feature patios facing open space within the project site, lighting along sidewalks and recreational areas, and fencing around the perimeter of the site to limit access from the public. Therefore, the proposed project would be consistent with this policy.
Fire	
7G. G8: Minimize the risk to life and property from fire hazards in the City of Pomona	**Consistent.** Generally, adequate engineering and construction techniques have been developed to reduce the fire risk to the extent feasible. The proposed project would be required to be designed in accordance with the specified requirements contained in the California Fire Code. The project applicant would be required to obtain a building permit from the City, and the City's plan check process would ensure that project plans and specifications are in compliance with the California Building Code and local ordinances designed to reduce fire risk. Furthermore, the project site is not located in a very high fire hazard severity zone according to CAL FIRE (CAL FIRE 2011). As such, the project site would minimize risk to life and property

Table 12
Noise & Safety Consistency Analysis

Goal/Policy	Analysis
	from fire hazards. Therefore, the proposed project would be consistent with this goal.
7G. P20: Require site design features, fire retardant building materials and adequate access as conditions for approval of development or improvements to reduce the risk of fire within the City. • New construction is required to meet the requirements of the most recent International Building Code and California Title 24 Codes. Fire potential of buildings could be further reduced through the addition of defensible buffers, the use of type "A" roofing materials and residential fire protection devices (such as residential sprinkler system).	**Consistent.** The proposed project would be designed to reduce the fire risk to the extent feasible and in accordance with the specified requirements contained in the California Fire Code. The project applicant would be required to obtain a building permit from the City, and the City's plan check process would ensure that project plans and specifications are in compliance with the California Building Code and local ordinances designed to reduce fire risk. As such, compliance with City policies would ensure the proposed project would be consistent with this policy.
7G. P21: Require new wood and wood shake roofing materials to be a minimum of a class B rated material. Require fire resistant materials for re-roofing projects. Requiring tile roofs to be a minimum of class A rated tile material in high or very high fire threat areas, such as the Phillips Ranch neighborhood, as identified in Figure 7-G.3.	**Consistent.** The proposed project would be designed to reduce the fire risk to the extent feasible and in accordance with the specified requirements contained in the California Fire Code. The project applicant would be required to obtain a building permit from the City, and the City's plan check process would ensure that project plans and specifications are in compliance with the California Building Code and local ordinances designed to reduce fire risk. As such, compliance with City policies would ensure the proposed project would be consistent with this policy.
Seismic, Geologic, and Soil Hazards	
7G. G10: Avoid exposure to hazards, minimize losses to existing property and reduce the potential for damage to future development.	**Consistent.** According to the California Department of Conservation (DOC), the project site not located within an earthquake fault zone, liquefaction zone, or landside zone (DOC 2020). Generally, adequate engineering and construction techniques have been developed to reduce the risk of damage to structures from ground shaking to the extent feasible. The proposed project would be required to be designed to resist seismic forces in accordance with the criteria contained in the California Building Code. The project applicant would be required to obtain a building permit from the City, and the City's plan check process would ensure that project plans and specifications are in compliance with the California Building Code and local ordinances designed to minimize seismic risk. As such, the proposed project would avoid exposure to hazards.

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	Therefore, the proposed project would be consistent with this goal.
7G. P26: Limit development in high-risk seismic and landslide hazard areas.	**Consistent.** According to the California Department of Conservation, the project site would not be located within an earthquake fault zone or landslide zone (DOC 2020). As such, the proposed project would not be developed in a high-risk area. Therefore, the proposed project would be consistent with this policy.
7G. P36: Require new development located above or below areas of potential landslide to include risk mitigation measures, such as barriers to moving earth or strategic placement of parking lots, which will lessen the risk of injury or death from landslides.	**Consistent.** Implementation of the proposed project would include grading of the project site followed by earthwork activities resulting in cut and fill of approximately 58,0000 cubic yards. No import or export of soil would be required, and the cut and fill activities would result in a balanced site. In addition, the project would not be located within a landslide zone (DOC 2020). As such, the proposed project would not be developed in a high-risk area. Therefore, the proposed project would be consistent with this policy.
Hazardous Materials	
7G. G12: Minimize risk to life and property from production, use, storage and transportation of hazardous materials and waste.	**Consistent.** Hazardous materials which could be used once the proposed project is constructed would include chemical reagents, solvents, fuels, paints, cleansers, pesticides, fertilizers, and miscellaneous organics and inorganics that are used as part of building and landscaping maintenance. The project applicant, building manager/operator, and residents would be required to comply with all federal, state, and local laws regulating the management, use, storage, and transportation of hazardous materials. Through compliance with existing regulation, the proposed project would be consistent with this goal.
7G. P37: Comply with all applicable state and local regulations regarding production, use, storage, and transportation of hazardous materials and waste.	**Consistent.** Hazardous materials that could be used once the proposed project is constructed would include chemical reagents, solvents, fuels, paints, cleansers, pesticides, fertilizers, and miscellaneous organics and inorganics which are used as part of building and landscaping maintenance. The project applicant, building manager/operator, and residents would be required to comply with all federal, state, and local laws regulating the management, use, storage, and transportation of hazardous materials. Through compliance with existing regulation, the proposed project would be consistent with this policy.

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7G. P38: Require remediation and cleanup, and evaluate risk prior to reuse, in identified areas where hazardous materials and petroleum products have impacted soil or groundwater.	**Consistent.** The project site is not located on a site identified on the Department of Toxic Substances Control (DTSC) EnviroStor listing (DTSC 2020). The closest site on the DTSC list is located immediately to the south of the project site, identified as a former school clean-up site for Dudley-Murchison School (19010011). According to DTSC, the cleanup status indicates no further action as of April 2003. As such, it is not anticipated that the proposed project would require remediation and cleanup. Therefore, the proposed project would be consistent with this policy.
Flooding	
7G. G13: Minimize hazards associated with storm flooding	**Consistent.** The project site is within an area classified as Zone X according to the Federal Emergency Management Agency National Flood Hazard Layer FIRMette (06037C1725F) (FEMA 2020). Zone X is defined as an area of 0.2% annual chance of flood hazards and of an area with 1% annual chance of flood with average depth of less than one foot or with drainage areas of less than one square mile. In addition, the proposed project includes the construction of various storm drain lines, notably within the proposed street alignments of the project site. As such, the proposed project would have minimal risk of hazards associated with storm flooding on the project site. Therefore, the project is consistent with this goal.
7G. P49: Require that new development incorporate features into site drainage plans that would reduce impermeable surface area, increase surface water infiltration and minimize surface water runoff during storm events. Such features may include: • Additional landscape areas, or rain gardens. • Streets or parking lots with bio-infiltration systems. • Permeable paving designs; and • Stormwater detention basins.	**Consistent.** The proposed project would redevelop an existing vacant lot which would result in changes to the project site's drainage pattern. Although the project would result in an increase in impermeable surfaces, sheet flow drainage would be facilitated by new storm water infrastructure. On-site project features would include an additional 101,063 square feet of landscaping and a water quality bio-filtration chamber on the project site's northwest corner. Infrastructure improvements on the project site would include the construction of various storm drain, water, and sewer lines, notably within the proposed street alignments as well as maintenance of an existing 36-inch storm drain public utility easements for the California Department of Transportation (Caltrans). As described, the proposed project would be consistent with this policy.
Emergency Preparedness	

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Noise & Safety Consistency Analysis

Goal/Policy	Analysis
7G. P55: Ensure that land uses, densities, and building heights within Airport Land Use Compatibility Zones are compatible with safe operation of Brackett Field.	**Consistent.** The project site is approximately 1.2 miles south of Brackett Field and within Zone E according to Map 2A of the Brackett Field Airport Land Use Compatibility Plan (ALUC 2015). As shown in Table 2A, Basic Compatibility Criteria, the proposed project would be within the acceptable habitable floor range and within the 35-foot height limit for structures. The proposed project would not include design features which would increase the attraction of birds onto the site and compliance with City regulations on lighting and glare would reduce hazards. Furthermore, the project's proposed land use is allowed within this zone. As such, the project would be compatible with the Brackett Field Airport Land Use Compatibility Plan and be consistent with this policy.

3.10 Conclusion

The General Plan Conformance Review analysis, provided in Sections 3.1 through 3.9 of this document, demonstrates the proposed project's consistency with the applicable goals and policies in the City's General Plan Update. Although the project site's zoning of C-4 Highway Commercial is not consistent with the City's General Plan designation (Urban Neighborhood, T4-A and T5), a Change of Zone is not required because the project is consistent with the General Plan designation. Furthermore, the project's proposed height is consistent with the General Plan's transect zoning maximum height limits and the applicable R-3 zoning regulations. Therefore, the proposed project is in compliance with the criteria outlined in Government Code Section 65589.5(j)(4).

Similarly, the proposed project's consistency with the General Plan's goals and policies results in compliance with State CEQA Guidelines Section 15183. As such, the proposed project is within the scope and environmental analysis discussed in the City of Pomona General Plan Update, Corridors Specific Plan, Active Transportation Plan and Green Plan EIR (State Clearinghouse No. 2012051025). Therefore, the proposed project is exempt from further CEQA review required of the discretionary approvals needed.

3.11 References

Brian F. Smith and Associates. 2020a. Paleontological Assessment for the Dudley Pomona Project. Prepared by Brian F. Smith and Associates, Inc. November 8, 2019 (Appendix F)

Brian F. Smith and Associates, Inc. 2020b. A Phase I Cultural Resources Report for the Dudley Pomona Project. Pomona, California. Prepared by Brian F. Smith and Associates, Inc. November 8, 2019 (Appendix E)

CAL FIRE (California Department of Forestry and Fire Protection). 2011. Very High Fire Hazard Severity Zones in LRA (Local Responsibility Area). Web. September 2011. Accessed August 2020. https://osfm.fire.ca.gov/media/5838/pomona.pdf.

DOC (Department of Conservation). 2020. Earthquake Zones of Required Investigation. Accessed August 2020. https://maps.conservation.ca.gov/cgs/EQZApp/

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1440 Murchison Avenue

TRAFFIC ANALYSIS

CITY OF POMONA

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CMP	Congestion Management Program
E+P	Existing Plus Project
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
MTA	Metropolitan Transportation Authority
MUTCD	Manual on Uniform Traffic Control Devices
NP	No Project (or Without Project)
PHF	Peak Hour Factor
Project	1440 Murchison Avenue
RTP	Regional Transportation Plan
SCAG	Southern California Association of Governments
SHS	State Highway System
sf	Square Feet
TA	Traffic Analysis
Vphpl	Vehicles Per Hour Per Lane
v/c	Volume to Capacity
WP	With Project

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1 INTRODUCTION

This report presents the results of the traffic analysis (TA) for the proposed 1440 Murchison Avenue ("Project"), which is located at 1440 Murchison Avenue, in the City of Pomona as shown on Exhibit 1-1.

The purpose of this traffic analysis is to evaluate the potential circulation system deficiencies that may result from the development of the proposed Project, and to recommend improvements to achieve acceptable circulation system operational conditions. As directed by City of Pomona staff, this traffic study has been prepared in accordance with the City of Pomona Public Works Department Traffic Impact Study Guidelines (February 2012), the California Department of Transportation (Caltrans) *Guide for the Preparation of Traffic Impact Studies* (December 2002), and consultation with City staff during the scoping process. (1) (2) The approved Project Traffic Study Scoping agreement is provided in Appendix 1.1 of this TIA.

1.1 SUMMARY OF FINDINGS

The Project is anticipated to generate a net total of 828 trip-ends per day, with 54 net AM peak hour trips and 67 net PM peak hour trips. For Existing (2019), Opening Year Cumulative (2022), and Horizon Year (2040) traffic conditions, the addition of Project traffic to study area intersections contributed to an existing deficiency at the intersection of Dudley Street & I-10 EB Ramps/Murchison Avenue. With the addition of an all-way stop control, the intersection is anticipated to operate at acceptable level of service during the peak hours.

It is recommended that the Project construct Murchison Avenue is at its ultimate full-section width as a local street. Improvements along the Project's frontage will be based on the City's Final Conditions of Approval for the Project.

1.2 PROJECT OVERVIEW

The Project is proposed to consist of 152 multifamily residential dwelling units. For the purposes of this traffic study, the Project is anticipated to be developed in a single phase with an anticipated opening year of 2022.

The Project is proposed to have access on Murchison Avenue via Project Driveway. Secondary access is provided on Murchison Avenue, east of the Project site. Project Driveway is assumed to allow for full-access. Regional access to the Project site will be provided by the I-10 Freeway via Gillette Road and Dudley Street.

Trips generated by the Project's proposed land uses have been estimated based on trip generation rates collected by the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition, 2017. (3) The Project is estimated to generate a net total of 828 trip-ends per day, with 54 net AM peak hour trips and 67 net PM peak hour trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

EXHIBIT 1-1: PRELIMINARY SITE PLAN



URBAN CROSSROADS

1.3 ANALYSIS SCENARIOS

For the purposes of this traffic study, potential deficiencies to traffic and circulation have been assessed for each of the following conditions:

- Existing (2019)
- Existing plus Project (E+P)
- Opening Year Cumulative (2022) Without Project
- Opening Year Cumulative (2022) With Project
- Horizon Year (2040) Without Project
- Horizon Year (2040) With Project

1.3.1 EXISTING CONDITIONS

Information for Existing conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared.

1.3.2 EXISTING PLUS PROJECT CONDITIONS

The Existing Plus Project (E+P) analysis determines traffic deficiencies that would occur on the existing roadway system with the addition of Project traffic. The E+P analysis has been utilized to identify the project-specific deficiencies associated solely with the development of the proposed Project based on a comparison of the E+P traffic conditions to Existing conditions.

1.3.4 OPENING YEAR CUMULATIVE (2022) CONDITIONS

The Opening Year Cumulative (2022) conditions analysis determines the potential near-term cumulative circulation system deficiencies. To account for background traffic growth, traffic associated with other known cumulative development projects in conjunction with an ambient growth factor from Existing conditions of 6.18% (2 percent per year over 3 years) has been included for 2022 conditions.

In addition to this background growth rate, traffic growth attributable to other known cumulative development projects has also been included. The list of cumulative development projects was compiled from information provided by the City of Pomona Planning Department and in consultation with Planning Departments of near-by Cities of San Dimas and La Verne to identify pending development projects in close proximity to the Project study area. As discussed below, the use of an annual growth rate of 6.12 percent would appear to conservatively approximate the anticipated regional growth in traffic volumes in the City of Pomona, especially when considered along with the addition of project-related traffic and traffic generated by other known development projects.

1.3.4 HORIZON YEAR (2040) CONDITIONS

Traffic projections for Horizon Year Without and With Project conditions were derived using the Southern California Association of Governments (SCAG) traffic model using accepted procedures for model forecast refinement and smoothing. The Horizon Year peak hour forecasts were

developed using the modeled long-range forecasts and refined using Opening Year With Project peak hour turning movement volumes. Local knowledge of development patterns, City and regional plans, and roadway projects were used to confirm or refine future travel patterns.

The initial estimate of the Horizon Year with Project peak hour turning movements was then reviewed by Urban Crossroads for reasonableness. The initial estimates were adjusted to achieve flow conservation, reasonable growth, and reasonable diversion between parallel routes. Horizon Year turning volumes were compared to Existing and Opening Year with Project volumes in order to ensure adequate growth as a part of the refinement process.

According to information published in the LA County Congestion Management Program (CMP), the Horizon Year background traffic growth within the City of Pomona is projected to increase by 24.8% in the period between 2010 and 2035, a compounded rate of approximately 0.89% annually. (4) These growth factors are based on regional modeling efforts and estimate the general effect of cumulative development and other socioeconomic changes on traffic growth throughout the region.

Based on a comparison of Existing traffic volumes to the Horizon Year (2040) forecasts, the average growth rate is estimated at approximately 11.013 percent compounded annually between Existing and Horizon Year (2040) traffic conditions. The annual growth rate at each individual intersection is not lower than 1.009 percent or higher than 1.026 percent compounded annually over the same time period. Therefore, the annual growth rate utilized for the purposes of this analysis would appear to conservatively approximate the anticipated regional growth in traffic volumes in the City of Pomona for near term and long range traffic conditions, especially when considered along with the addition of cumulative development project traffic and project-related traffic. As such, the growth in traffic volumes assumed in this traffic analysis would tend to overstate, as opposed to understate, the potential deficiencies to traffic and circulation.

1.4 STUDY AREA

To ensure that this TIA satisfies the City of Pomona's traffic study requirements, Urban Crossroads, Inc. prepared a project traffic study scoping package for review by City staff prior to the preparation of this report. The Agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology. The Agreement approved by the City is included in Appendix 1.1.

1.4.1 INTERSECTIONS

The following 4 study area intersections listed in Table 1-1 and shown on Exhibit 1-2 were selected for this TIA based on the City's TIA guidelines and consultation with City of Pomona staff. The study area includes intersections where the Project is anticipated to contribute 50 or more peak hour trips.

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction	CMP?
1	Dudley St. & Gillette Rd.	Pomona	No
2	Dudley St. & I-10 EB Ramps/Murchison Av.	Caltrans, Pomona	No
3	Dudley St. & Murchison Av.	Pomona	No
4	Project Driveway & Murchison Av.	Pomona	No

The "50 peak hour trip" criterion utilized by the City of Pomona is consistent with the methodology employed by the County of Los Angeles and generally represents a minimum number of trips at which a typical intersection would have the potential to be substantively affected by a given development proposal.

1.5 ANALYSIS FINDINGS

This section provides a summary of the analysis results for Existing (2019), E+P, Opening Year Cumulative (2022), and Horizon Year (2040) traffic conditions.

1.5.1 EXISTING CONDITIONS

Intersection Operations

A summary of LOS results for Existing traffic conditions are presented in Exhibit 1-3. For Existing traffic conditions, the study area intersections are currently operating at an acceptable LOS during the peak hours, with the exception of the following location:

- Dudley St. & I-10 EB Ramps/Murchison Av. (#2) – LOS F AM and PM peak hours

Traffic Signal Warrant Analysis

No study area intersections are anticipated to meet either peak hour or planning level (daily volume based) traffic signal warrants for Existing (2019) traffic conditions.

1.5.2 E+P CONDITIONS

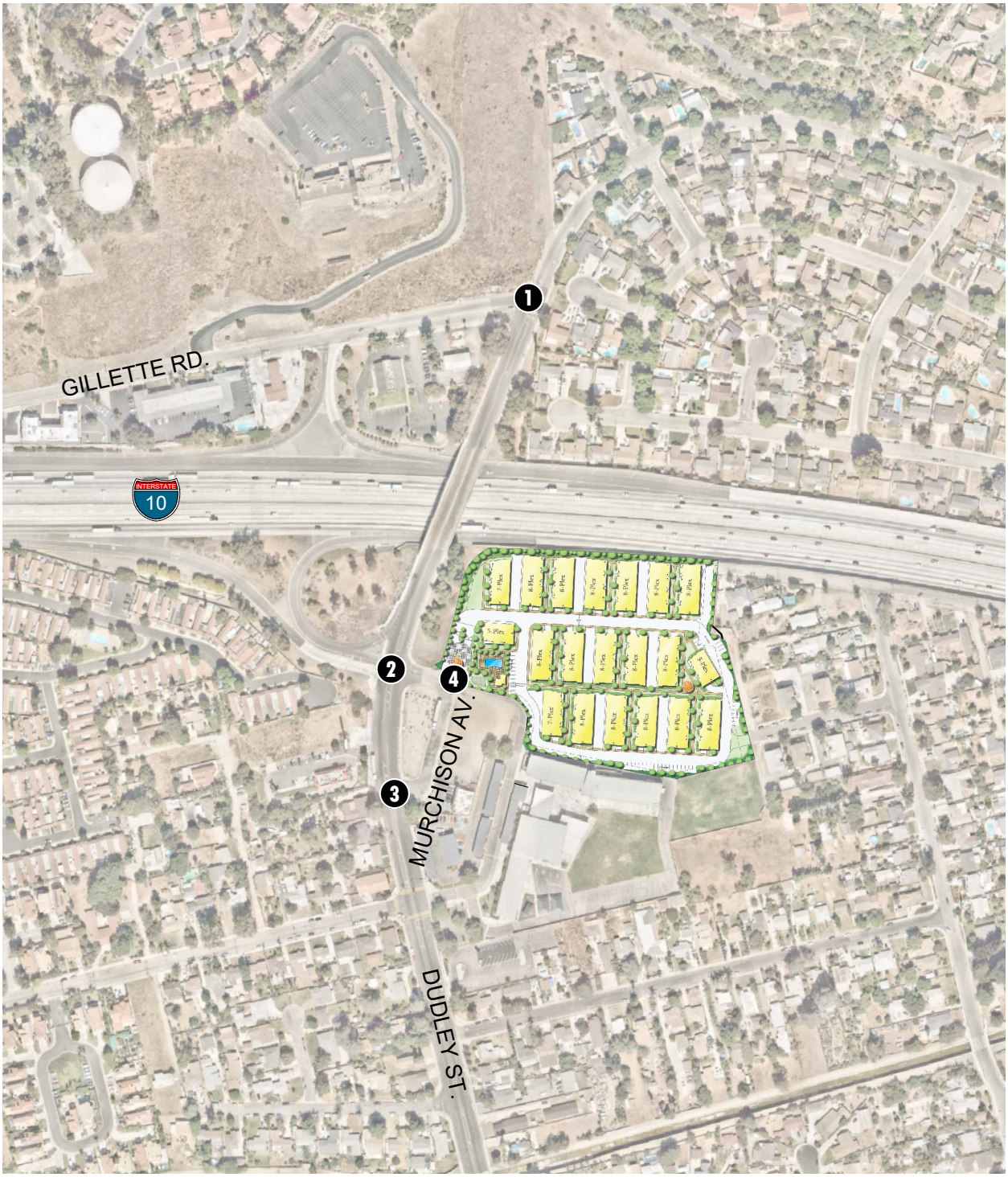
Intersection Operations

As shown on Exhibit 1-3, there are no additional study area intersections anticipated to operate at an unacceptable LOS with the addition of Project traffic.

Traffic Signal Warrant Analysis

No study area intersections are anticipated to meet either peak hour or planning level (daily volume based) traffic signal warrants for E+P traffic conditions.

EXHIBIT 1-2: LOCATION MAP



LEGEND:

0 = INTERSECTION ANALYSIS LOCATION

N

13014 - locmap.dwg

URBAN CROSSROADS

EXHIBIT 1-3: SUMMARY OF DEFICIENT INTERSECTIONS BY ANALYSIS SCENARIO

#	Intersection	Existing (2019)	E+P	Opening Year Cumulative (2022) Without Project	Opening Year Cumulative (2022) With Project	Horizon Year (2040) Without Project	Horizon Year (2040) With Project
1	Dudley St. & Gillette Rd.						
2	Dudley St. & I-10 EB Ramps / Murchison Av.						
3	Dudley St. & Murchison Av.						
4	Project Dwy. & Murchison Av.						

LEGEND:

- = AM PEAK HOUR
- = PM PEAK HOUR
- = MID-DAY PEAK HOUR
- = LOS A-D
- = LOS E
- = LOS F

Deficiencies and Improvements

Improvements recommended to improve each deficient intersection's LOS back to pre-project conditions, or better are shown in Table 1-3. The Project was found to contribute to the deficiency at the intersection of Dudley Street & I-10 EB Ramps/Murchison Avenue.

Improvement Measure 1.1 – Dudley St. & I-10 EB Ramps/Murchison Av. (#2)

- Contribute fair share to construct an all-way stop control

1.5.3 OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT CONDITIONS

Intersection Operations

As shown on Exhibit 1-3, there are no additional study area intersections that are anticipated to operate at an unacceptable LOS under Opening Year Cumulative (2022) Without Project traffic conditions during one or both peak hours, consistent with Existing (2019) and E+P traffic conditions.

Traffic Signal Warrant Analysis

No study area intersections are anticipated to meet either peak hour or planning level (daily volume based) traffic signal warrants for Opening Year Cumulative (2022) Without Project traffic conditions.

1.5.4 OPENING YEAR CUMULATIVE (2022) WITH PROJECT CONDITIONS

Intersection Operations

As shown on Exhibit 1-3, there are no additional study area intersections that are anticipated to operate at an unacceptable LOS under Opening Year Cumulative (2022) With Project traffic conditions during one or both peak hours, consistent with Existing (2019), E+P, and Opening Year Cumulative (2022) Without Project traffic conditions.

Traffic Signal Warrant Analysis

No study area intersections are anticipated to meet either peak hour or planning level (daily volume based) traffic signal warrants for Opening Year Cumulative (2022) With Project traffic conditions.

Deficiencies and Improvements

Improvements recommended to improve each deficient intersection's LOS back to pre-project conditions, or better are shown in Table 1-3. The Project was found to contribute to the deficiency at the intersection of Dudley Street & I-10 EB Ramps/Murchison Avenue.

Improvement Measure 1.1 – Dudley St. & I-10 EB Ramps/Murchison Av. (#2)

- *Contribute fair share to construct an all-way stop control (consistent with E+P traffic conditions)*

1.5.5 HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS

Intersection Operations

As shown on Exhibit 1-3, there are no additional study area intersections that are anticipated to operate at an unacceptable LOS under Horizon Year (2040) Without Project traffic conditions during one or both peak hours, consistent with Existing (2019), E+P, and Opening Year Cumulative (2022) traffic conditions.

Traffic Signal Warrant Analysis

No study area intersections are anticipated to meet either peak hour or planning level (daily volume based) traffic signal warrants for Horizon Year (2040) Without Project traffic conditions.

1.5.6 HORIZON YEAR (2040) WITH PROJECT CONDITIONS

Intersection Operations

As shown on Exhibit 1-3, there are no additional study area intersections that are anticipated to operate at an unacceptable LOS under Horizon Year (2040) With Project traffic conditions during one or both peak hours, consistent with Existing (2019), E+P, Opening Year Cumulative (2022) , and Horizon Year (2040) Without Project traffic conditions.

Traffic Signal Warrant Analysis

No study area intersections are anticipated to meet either peak hour or planning level (daily volume based) traffic signal warrants for Horizon Year (2040) With Project traffic conditions.

Deficiencies and Improvements

Improvements recommended to improve each deficient intersection's LOS back to pre-project conditions, or better are shown in Table 1-3. The Project was found to contribute to the deficiency at the intersection of Dudley Street & I-10 EB Ramps/Murchison Avenue.

Improvement Measure 1.1 – Dudley St. & I-10 EB Ramps/Murchison Av. (#2)

- *Contribute fair share to construct an all-way stop control (consistent with E+P and Opening Year Cumulative (2022) traffic conditions)*

1.6 SUMMARY OF IMPROVEMENTS

Cumulative deficiencies in the transportation network's LOS are deficiencies that would not be directly caused by the Project. The Project would, however, contribute traffic to these deficient conditions. Recommended improvements that would achieve pre-Project LOS conditions under Existing, E+P, Opening Year and Horizon Year traffic conditions are summarized on Table 1-2. The Project's proportional contributions to traffic volumes at the affected locations are also indicated. The detailed fair share calculations are shown on Table 1-3.

Table 1-2

Summary of Intersection Improvements

#	Intersection Location	Jurisdiction	E+P (Project Buildout)	Opening Year Cumulative (2022) With Project	Horizon Year (2040) With Project	Fair Share %[1]
2	Dudley St. & I-10 EB Ramps/Murchison Av.	Caltrans, Pomona	-Install an all-way stop control	-Same	-Same	17.2%

[1] Program improvements constructed by project may be eligible for fee credit, at discretion of the City. See Table 1-3 for Fair Share Calculations.

Table 1-3

Project Fair Share Calculations for Intersections

#	Intersection	Existing	Project	2040 With Project Volume	Total New Traffic	Project % of New Traffic
2	Dudley St. & I-10 EB Ramps/Murchison Av.					
	AM:	1,030	41	1,268	238	**17.2%**
	Mid-day PM:	582	24	738	156	15.4%
	PM:	674	24	855	181	13.3%

BOLD = Denotes highest fair share percentage.

1.7 ON-SITE ROADWAY AND SITE ACCESS IMPROVEMENTS

The recommended site-adjacent roadway improvements for the Project are described below. Exhibit 1-4 illustrates the site-adjacent roadway improvement recommendations.

Murchison Avenue – Murchison Avenue is an east-west oriented roadway located along the Project's northern and southern boundary. Construct Murchison Avenue is at its ultimate full-section width as a local street along the Project's northern and southern boundary consistent with the City of Pomona General Plan Circulation Element. The Project Applicant would improve Murchison Avenue as required by the final Conditions of Approval for the Project and applicable City of Pomona standards.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard Caltrans and City of Pomona sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

Project Driveway at Murchison Avenue – Install a stop control on the northbound, southbound, and westbound approach and construct the intersection with the following geometrics:

- Northbound Approach: shared left-through lane
- Southbound Approach: shared through-right turn lane
- Eastbound Approach: one left turn and one right turn lane
- Westbound Approach: one left turn and one shared through-right turn lane

1.8 QUEUING ANALYSIS AT THE PROJECT DRIVEWAYS

A queuing analysis was conducted along the site adjacent roadways for Horizon Year (2040) traffic conditions to determine the turn pocket lengths necessary to accommodate near term 95th percentile queues. The analysis was conducted for both the weekday AM, weekday mid-day PM peak hours, and weekday PM peak hours.

The traffic modeling and signal timing optimization software package Synchro (Version 10) has been utilized to assess queues at the Project access points. Synchro is a macroscopic traffic software program that is based on the signalized and unsignalized intersection capacity analyses as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length in Synchro. The LOS and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

EXHIBIT 1-4: SITE ADJACENT ROADWAY AND SITE ACCESS RECOMMENDATIONS



SimTraffic is designed to model networks of signalized and unsignalized intersections, with the primary purpose of checking and fine-tuning signal operations. SimTraffic uses the input parameters from Synchro to generate random simulations. The 95th percentile queue is not necessarily ever observed; it is simply based on statistical calculations (or Average Queue plus 1.65 standard deviations). However, the average queue is the average of all the two-minute maximum queues observed by SimTraffic. The maximum back of queue observed for every two-minute period is recorded by SimTraffic.

SimTraffic has been utilized to assess peak hour queuing at the site access driveways for Horizon Year (2040) With Project traffic conditions. The random simulations generated by SimTraffic have been utilized to determine the 50th and 95th percentile queue lengths observed for each turn lane. A SimTraffic simulation has been recorded five (5) times, during the weekday AM and weekday PM peak hours, and has been seeded for 60-minute periods with 60-minute recording intervals.

A vehicle is considered queued whenever it is traveling at less than 10 feet/second. A vehicle will only become queued when it is either at the stop bar or behind another queued vehicle. Although only the 95th percentile queue has been utilized for purposes of determining the necessary turn pocket storage lengths, the 50th percentile queues are also reported. The 50th percentile queue is the maximum back of queue on a typical cycle during the peak hour, while the 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes during the peak hour. In other words, if traffic were observed for 100 cycles, the 95th percentile queue would be the queue experienced with the 95th busiest cycle (or 5% of the time).

The Horizon Year (2040) queuing results are provided in Table 1-4 and Appendix 1.2 of this report.

1.9 CORTEZ ELEMENTARY SCHOOL DROP OFF/PICK UP

There is an existing dirt lot adjacent to the 7-Eleven located across from Cortez Elementary School. As the dirt lot is adjacent to the school, students and parents may use the lot as a secondary area for pick-ups and drop-offs. The dirt lot was evaluated for potential queuing and traffic issues during the school drop off/pick up times. The existing counts and field review indicate nominal pedestrian crossings at the dirt lot during the AM and PM peak hours. In the AM drop off time, the total pedestrian activity was 11 pedestrians in a hour with a minimum of 1 pedestrian in a 15 minute period and a maximum of 5 pedestrians in a 15 minute period. In the PM pick up time, the total pedestrian activity was 9 pedestrians in a hour with a minimum of 1 pedestrian in a 15 minute period and a maximum of 3 pedestrians in a 15 minute period.

The primary use of the dirt lot was to store large dirt piles and the parking of 4+-axle trucks. Staggering of the school's bell schedule dispersed the inbound and outbound vehicles across the hour. Field review conducted in November 2019 for the Project study area had shown that there was no excess queuing during school arrival and dismissal times. The total vehicles exiting the school in the AM peak hour was 302 vehicles which is the equivalent of approximately 5 vehicles per minute and the total vehicles exiting the school in the PM peak hour was 135 vehicles which is the equivalent of 3 vehicles per hour. The field review had indicated there was a steady movement of 2-4 vehicles at any given time. There was no observations that would indicate a

buildup of vehicles exiting the school to Murchison Avenue. Queuing in the study area was nominal and the addition of the Project would not heavily influence the adjacent uses.

Table 1-4

Queuing Analysis for Horizon Year (2040) Conditions

#	Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)			Acceptable?[1]		
				AM Peak Hour	MD Peak Hour	PM Peak Hour	AM	MD	PM
Horizon Year (2040) Conditions Without Project, Without Improvements									
4	Project Driveway & Murchison Av.								
		NBL	480	20	0	9	Yes	Yes	Yes
		EBR	100	0	0	0	Yes	Yes	Yes
		WBL	190	46	0	19	Yes	Yes	Yes
		WBT	190	100	47	57	Yes	Yes	Yes
Horizon Year (2040) Conditions With Project, Without Improvements									
2	Dudley St. & I-10 EB Ramps/Murchison Av.								
		NBL	130	52	62	58	Yes	Yes	Yes
		SBL	110	15	0	23	Yes	Yes	Yes
		EBL/T	1,100	48	79	91	Yes	Yes	Yes
		EBR	1,100	68	80	70	Yes	Yes	Yes
		WBL/T	100	82	61	73	Yes	Yes	Yes
		WBR	100	42	38	34	Yes	Yes	Yes
4	Project Driveway & Murchison Av.								
		NBL/T	480	24	23	22	Yes	Yes	Yes
		SBT/R	250	45	38	33	Yes	Yes	Yes
		EBL	100	0	0	0	Yes	Yes	Yes
		EBR	100	0	0	0	Yes	Yes	Yes
		WBL	190	47	0	30	Yes	Yes	Yes
		WBT/R	190	153	52	72	Yes	Yes	Yes
Horizon Year (2040) Conditions With Project, With Improvements									
2	Dudley St. & I-10 EB Ramps/Murchison Av.								
		NBL	130	100	71	96	Yes	Yes	Yes
		NBT	230	133	70	103	Yes	Yes	Yes
		NBR	230	14	15	24	Yes	Yes	Yes
		SBL	110	27	28	34	Yes	Yes	Yes
		SBT/R	920	70	81	86	Yes	Yes	Yes
		EBL/T	1,100	50	40	56	Yes	Yes	Yes
		EBR	1,100	54	45	65	Yes	Yes	Yes
		WBL/T	100	73	44	62	Yes	Yes	Yes
		WBR	100	46	40	46	Yes	Yes	Yes
4	Project Driveway & Murchison Av.								
		NBL/T	480	23	23	28	Yes	Yes	Yes
		SBT/R	250	52	44	40	Yes	Yes	Yes
		EBL	100	0	0	0	Yes	Yes	Yes
		EBR	100	0	0	0	Yes	Yes	Yes
		WBL	190	48	10	40	Yes	Yes	Yes
		WBT/R	190	79	51	59	Yes	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown in this table, where applicable.

2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are generally consistent with City of Pomona traffic study guidelines and the Los Angeles County CMP. (1) (4)

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from an LOS A, representing completely free-flow conditions, to an LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The *Highway Capacity Manual* (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (5) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

CITY OF POMONA

The City of Pomona requires signalized intersection operations analysis based on the methodology described in the HCM. Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections, LOS is directly related to the average control delay per vehicle and is correlated to an LOS designation as described in Table 2-1. Study area intersections have been evaluated using the Synchro (Version 10) analysis software package.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A	F
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B	F

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C	F
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D	F
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E	F
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F	F

Source: HCM

Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network. Signal timing for the freeway arterial-to-ramp intersections have been obtained from City of Pomona were utilized for the purposes of this analysis.

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15 minute volumes. Common practice for an LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g. PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios, with the exception of Long Range traffic conditions. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows, while lower PHF values are indicative of greater variability of flow during the peak hour. (5)

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Pomona requires the operations of unsignalized intersections be evaluated using the methodology described in the HCM. (5) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay Per Vehicle (Seconds)	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Little or no delays.	0 to 10.00	A	F
Short traffic delays.	10.01 to 15.00	B	F
Average traffic delays.	15.01 to 25.00	C	F
Long traffic delays.	25.01 to 35.00	D	F
Very long traffic delays.	35.01 to 50.00	E	F
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F	F

Source: HCM

At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. For all-way stop controlled intersections, LOS is computed for the intersection as a whole.

The following assumptions are to be used in the analysis:

- Optimized signal timing
- Two (2) second lost time/phase
- 1800 vphgpl for exclusive through and right turn lanes
- 1700 vphgpl for exclusive left turn lanes
- 1600 vphgpl for exclusive dual left turn lanes

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TIA uses the signal warrant criteria presented in the latest edition of the Caltrans *Manual on Uniform Traffic Control Devices (MUTCD)*, as amended by *the MUTCD 2014 California Supplement*, for all study area intersections. (6)

The signal warrant criteria for Existing study area intersections are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. Both the Caltrans's *MUTCD* and the *MUTCD 2014 California Supplement* indicate that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (6) Specifically, this TIA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions. Warrant 3 criteria are basically identical for both the Caltrans's *MUTCD* and the *MUTCD 2014 California Supplement*. Warrant 3 is appropriate to use for this TIA because it provides specialized warrant criteria for intersections with rural characteristics (e.g. located in communities with populations of less than 10,000 persons or with adjacent major streets operating above 40 miles per hour).

For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection.

As shown on Table 2-3, traffic signal warrant analyses were performed for the following unsignalized study area intersections during the peak weekday conditions wherein the Project is anticipated to contribute the highest trips:

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction
1	Dudley St. & Gillette Rd.	Pomona
2	Dudley St. & I-10 EB Ramps/Murchison Av.	Caltrans, Pomona
3	Dudley St. & Murchison Av.	Pomona
4	Project Driveway & Murchison Av.	Pomona

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. The traffic signal warrant analysis for future conditions is presented in Section 5 *Existing Plus Project Traffic Analysis,* Section 6 *Opening Year Cumulative (2022) Traffic Analysis,* and Section 7 *Horizon Year (2040) Traffic Analysis* of this report.

It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 MINIMUM LEVEL OF SERVICE (LOS)

The definition of an intersection deficiency has been obtained from each of the applicable surrounding jurisdictions.

2.4.1 CITY OF POMONA

The definition of an intersection deficiency in the City of Pomona is based on the City of Pomona General Plan Circulation Element. The City of Pomona General Plan states that target LOS D be maintained at City intersections wherever possible.

The definition of an intersection deficiency in the City of Pomona is based on the City of Pomona General Plan Circulation Element. The City of Pomona General Plan Update (adopted March 2014) (7) establishes LOS guidelines depending on Place Type as shown in *Fig. 7-D.9: Motor Vehicle Level of Service Guidelines* shown below.

Fig.7-D.9: Motor Vehicle Level Of Service Guidelines[1]		Place Type			
		High Volume Vehicular Corridor	Pedestrian-Oriented District	Residential Area	All Other Areas
Functional Roadway Classification[2]	CMP[3] Roadway	E	E	E	E
	Major Arterial	E	E	D	D
	Minor Arterial	E	E	C	D
	Collector	D	D	C	D
	Local	C	D	C	C

Notes:

1. At stop-controlled intersections, the LOS standard would not apply unless signalization is warranted based on warrant standards.

2. Where two streets intersect, the larger facility's LOS guideline shall apply.

3. Congestion management plan (CMP) roadways within Pomona are Foothill Boulevard, Arrow Highway , I-10, SR-57, SR-60, and SR-71. This standard would apply to signalized intersections that include freeway on- or off-ramps.

2.4.2 CMP

In an effort to more directly link land use, transportation, and air quality, and promote reasonable growth, the County of Los Angeles adopted a CMP. The Los Angeles County Metropolitan Transportation Authority (MTA) monitors the CMP roadway network system to minimize LOS deficiencies. Within the project study area, the I-10 Freeway is recognized as key transportation facilities within the CMP system. MTA has adopted LOS E as the minimum acceptable operational standard for intersections and segments along the CMP System of Highways and Roadways. Notwithstanding, this analysis employs the more stringent LOS D conditions as an acceptable limit of operations for State Highways.

2.4.3 CALTRANS

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway Facilities (SHS) facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than this target LOS, the existing LOS should be maintained. In general, the region-wide goal for an acceptable LOS on all freeways, roadway segments, and intersections is LOS D. Consistent with the City of Pomona LOS threshold, LOS D will be used as the target LOS for freeway ramps.

2.5 DEFICIENCIES

This section outlines the methodology used in this analysis related to identifying circulation system deficiencies.

2.5.1 CITY OF POMONA INTERSECTIONS

To determine whether the addition of Project traffic at a study intersection results in a deficiency, the following criteria consistent with City of Pomona TIA Guidelines will be utilized:

Signalized Intersections

- Any study intersection that is operating at a LOS A, B, C, or D for any study scenario without Project traffic in which the addition of Project traffic causes the intersection to degrade to a LOS E or F shall improve the deficiency so as to bring the intersection back to at least LOS D.
- Any study intersection that is operating at LOS E or LOS F for any study scenario without Project traffic shall improve any deficiencies so as to bring the intersection back to the overall level of delay established prior to Project traffic being added.

Unsignalized Intersections

- A deficiency exists if the study determines that either section a) or both sections b) and c) occur.
  a) The addition of Project related traffic causes the intersection to move from a LOS D or better to a LOS E or worse.
  b) The Project contributes additional traffic to an intersection that is already projected to operate at an LOS E or F with background traffic.
  c) One or both of the following conditions are met:
     1) The Project adds 10 or more trips to any approach
     2) The intersection meets the peak hour traffic signal warrant after the addition of Project traffic.

The LOS deficiency criteria for study area intersections outside City of Pomona will be based on applicable jurisdiction's guidelines, where available, or Los Angeles County CMP guidelines.

2.5.2 CALTRANS FACILITIES

To determine whether the addition of project traffic to the SHS freeway segments would result in a deficiency, the following will be utilized:

- The traffic study finds that the LOS of a segment will degrade from D or better to E or F.
- The traffic study finds that the project will exacerbate an already deficient condition by contributing 50 or more peak hour trips.
- An intersection that is operating at or near capacity is deemed to be deficient.

2.6 PROJECT FAIR SHARE CALCULATION METHODOLOGY

In cases where this report identifies that the proposed Project would have a cumulative deficiency to a roadway facility, and the recommended improvement is a fair share monetary contribution, the following methodology was applied to determine the fair share contribution. A project's fair share contribution at an off-site study area intersection is determined based on the following equation, which is the ratio of Project traffic to new traffic, and new traffic is total future traffic less existing baseline traffic:

Project Fair Share % = Project Traffic / (Horizon Year With Project Total Traffic – Existing Traffic)

2.7 SB 743 REQUIREMENTS

In the fall of 2013, Senate Bill 743 (SB 743) was passed by the legislature and signed into law by the governor. This legislation will eventually change the way that transportation studies are conducted for environmental documents. In the areas where SB 743 is implemented, delay-based metrics such as roadway capacity and level of service will no longer be the performance measures used for the determination of the transportation impacts of projects in studies conducted under California Environmental Quality Act (CEQA). Instead, new performance measures such as vehicle miles travelled (VMT) will be used.

In December 2018 CEQA Guidelines were updated to include a threshold for evaluating traffic impacts using the VMT methodology. This methodology is required to be used statewide after July 2020. During the preparation of this traffic study, VMT thresholds were not yet adopted by the lead agency. Therefore, this traffic study follows current practice regarding lead agency guidance as of the date of preparation. The City of Pomona as the lead agency had adopted VMT thresholds in June and the VMT analysis for this project will be provided under a separate cover.

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3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Pomona General Plan Circulation Network, and a review of existing peak hour intersection operations and traffic signal warrant analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with City of Pomona staff (Appendix 1.1), the study area includes a total of 4 existing and future intersections as shown previously on Exhibit 1-2. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 CITY OF POMONA GENERAL PLAN CIRCULATION ELEMENT

As previously noted, the Project site is located within the City of Pomona. Exhibit 3-2 shows the City of Pomona General Plan Circulation Element. (7) The roadway classifications and planned (ultimate) roadway cross-sections of the major roadways within the City of Pomona in the vicinity of the proposed Project, as identified on the City's General Plan Circulation Element, are described subsequently.

Minor Arterials are medium speed/medium capacity roads that provide access to regional transportation facilities. The following study area roadways are classified as Minor Arterial on the City's General Plan Circulation Element:

- Dudley Street (currently built out to its General Plan ultimate roadway cross-section width)

Locals are low speed and low volume roadways that provide direct access to abutting land uses. Driveways to individual units, on-street parking, and pedestrian access are allowed. The following study area roadways are classified as Locals on the City's General Plan Circulation Element:

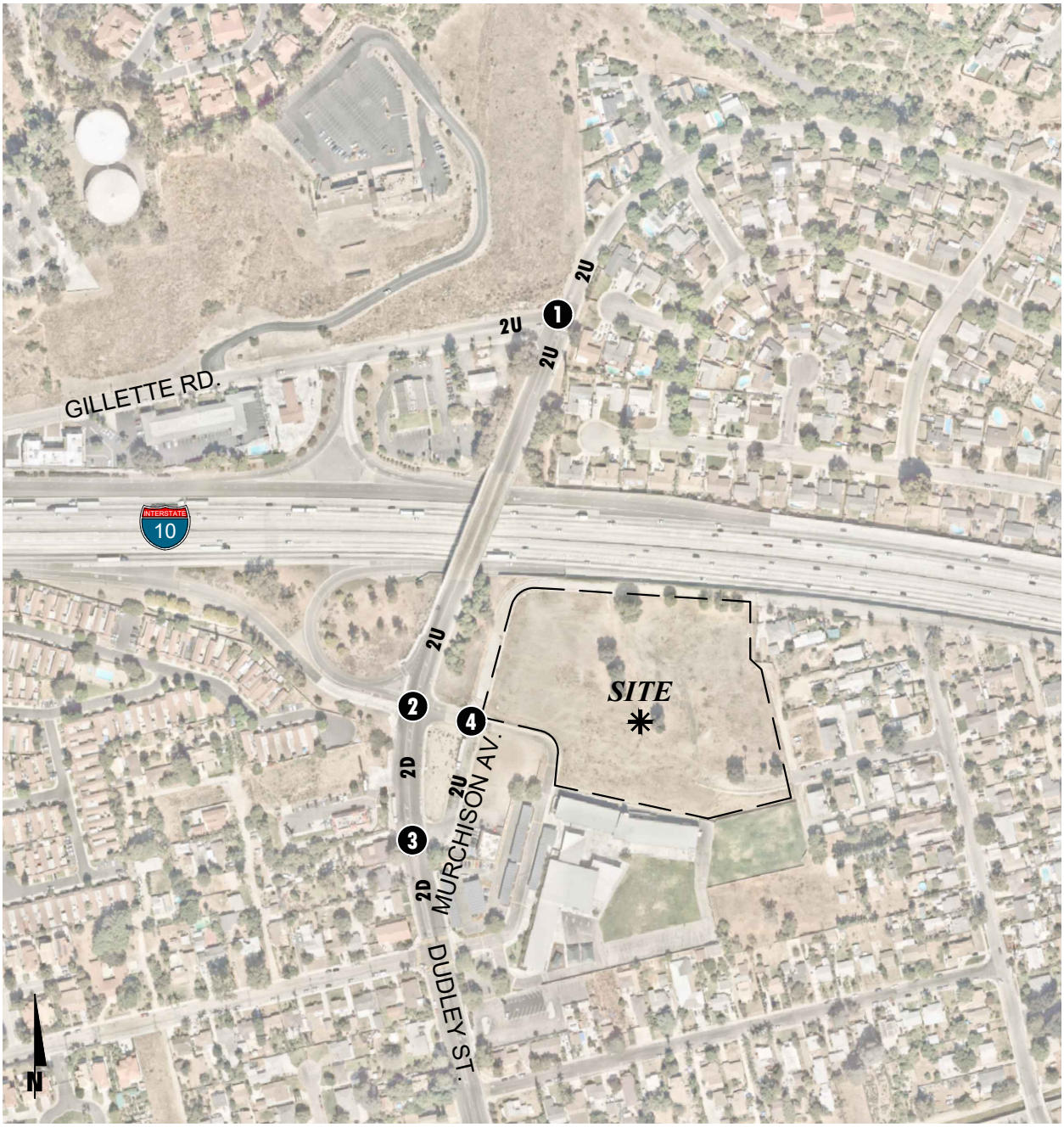
- Gillette Road (currently built out to its General Plan ultimate roadway cross-section width)
- Murchison Avenue (currently built out to its General Plan ultimate roadway cross-section width)

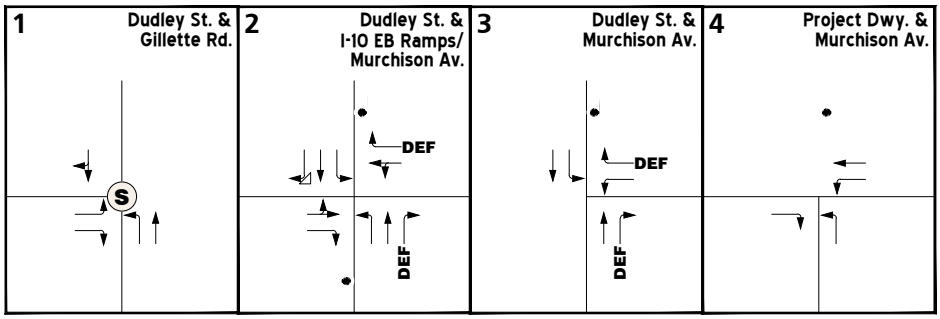
3.3 TRANSIT SERVICE

The study area is currently served by Foothill Transit with bus services along Dudley Street and Dudley Street via Line 197 and 699. The existing transit services are illustrated on Exhibit 3-3. There are no existing bus stops within the study area.

The Fairplex Park & Ride is located north of the I-10 Freeway and west of Dudley Street, within a ½ mile of the Project. The available lines serve destinations between Downtown Los Angeles, Pomona Transit Center, and Montclair Transit Center.

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS





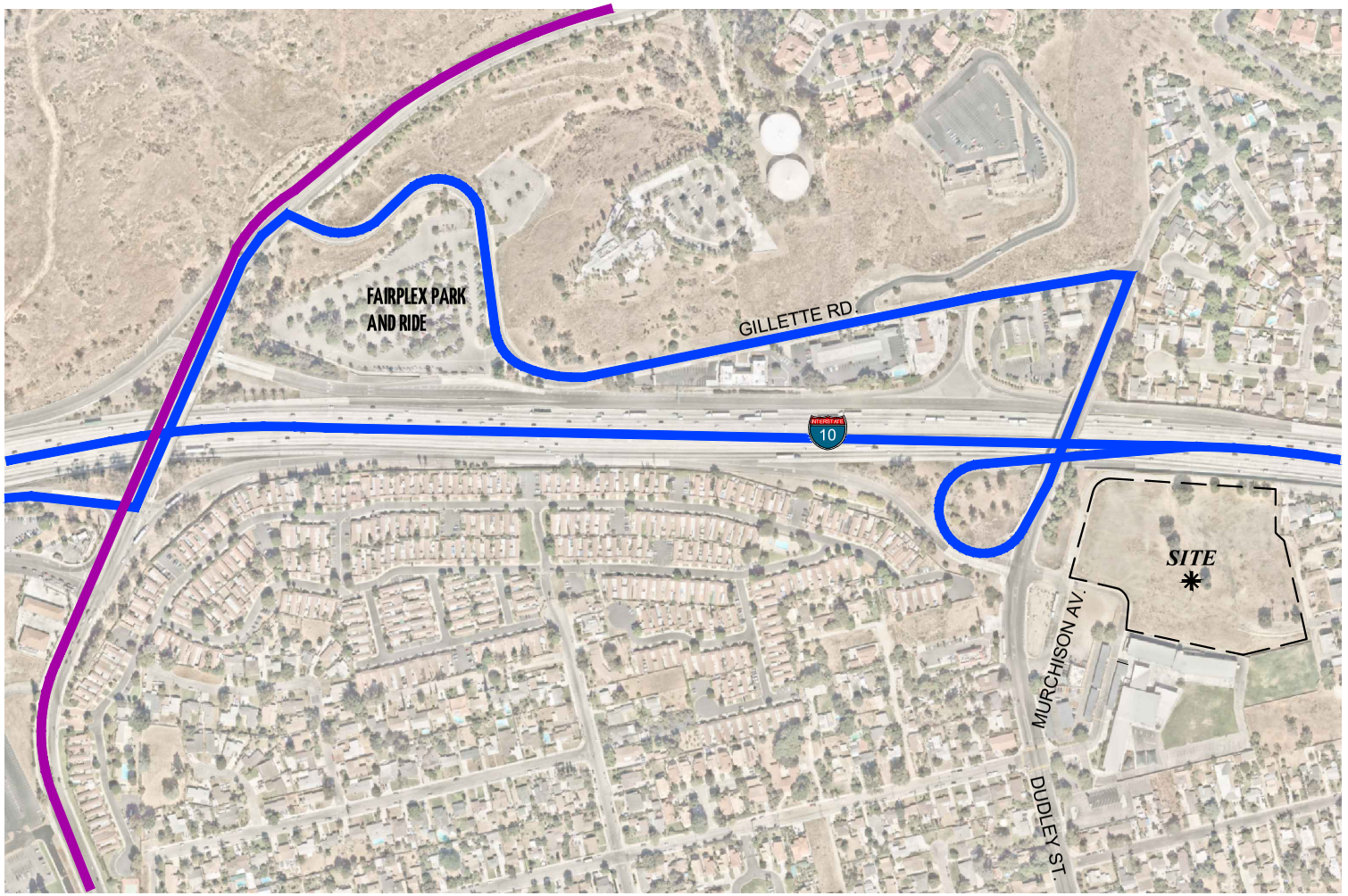
LEGEND:

- S = ALL WAY STOP
- = STOP SIGN
- = CHANNELIZED YIELD
- DEF = DEFACTO RIGHT TURN
- 4 = NUMBER OF LANES
- D = DIVIDED
- U = UNDIVIDED

EXHIBIT 3-2: CITY OF POMONA GENERAL PLAN CIRCULATION ELEMENT


Key
Freeway
Major Arterial
Minor Arterial
Collector
Local Street
Railroad
SITE
Fairplex
Cal Poly Pomona
E FOOTHILL BLVD
E ARROW HWY
W MISSION BLVD
W HOLT AV
W 2ND ST
E 1ST ST
W GRAND AV
E KINGSLEY AV
SAN BERNARDINO AV
E PHILLIPS BLVD
E PHILADELPHIA ST
E OLIVE ST
W VALLEY BLVD
TEMPLE AV
HUNTINGTON BLVD
HARBOR BLVD
GAREY AV
GAREY AV
GAINEY AV
GAINEY TRAIL
GAINEY TRAIL
GAINEY TRAIL

EXHIBIT 3-3: EXISTING TRANSIT ROUTES



LEGEND:

= FOOTHILL TRANSIT ROUTE 197

= FOOTHILL TRANSIT ROUTE 699

N

3.4 BICYCLE & PEDESTRIAN FACILITIES

Field observations conducted in November 2019 indicate nominal pedestrian and bicycle activity within the study area. It should be noted that pedestrians and bicyclists used Murchison Avenue to access the 7-Eleven adjacent to Cortez Elementary School. However, it was observed that the traffic operations were not significantly affected by the pedestrian activity. In the AM drop off time, the total pedestrian activity was 11 pedestrians in a hour with a minimum of 1 pedestrian in a 15 minute period and a maximum of 5 pedestrians in a 15 minute period. In the PM pick up time, the total pedestrian activity was 9 pedestrians in a hour with a minimum of 1 pedestrian in a 15 minute period and a maximum of 3 pedestrians in a 15 minute period.

The dirt lot was typically used by construction and truck parking. It was also observed that the 7-Eleven parking lot was typically used as a pass-by stop (i.e., pick-up/drop-off at the school, visit 7-Eleven, continue on the trip, etc.).

The study area is mostly built-out with curb-and-gutter improvements in place and includes sidewalk facilities for pedestrians. The existing and proposed bicycle facilities in the City of Pomona are shown on Exhibit 3-5.

The existing pedestrian facilities provide good connectivity and access to existing bus stop locations. Existing sidewalks, crosswalks, and bus-stops within the study area are shown on Exhibit 3-6.

3.5 EXISTING TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in November 2019, while schools were in session. The following peak hours were selected for analysis:

- Weekday AM Peak Hour (peak hour between 6:30 AM and 9:30 AM)
- Weekday mid-day PM Peak Hour (peak hour between 12:00 PM and 3:00 PM)
- Weekday PM Peak Hour (peak hour between 3:00 PM and 6:00 PM)

The weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules.

The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1. These raw turning volumes have been flow conserved between intersections with limited access, no access, and where there are currently no uses generating traffic.

Existing weekday ADT volumes on arterial highways throughout the study area are shown on Exhibit 3-7. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 7.9799 = Leg Volume

EXHIBIT 3-4: CITY OF POMONA ENVISIONED FUTURE TRANSIT NETWORK

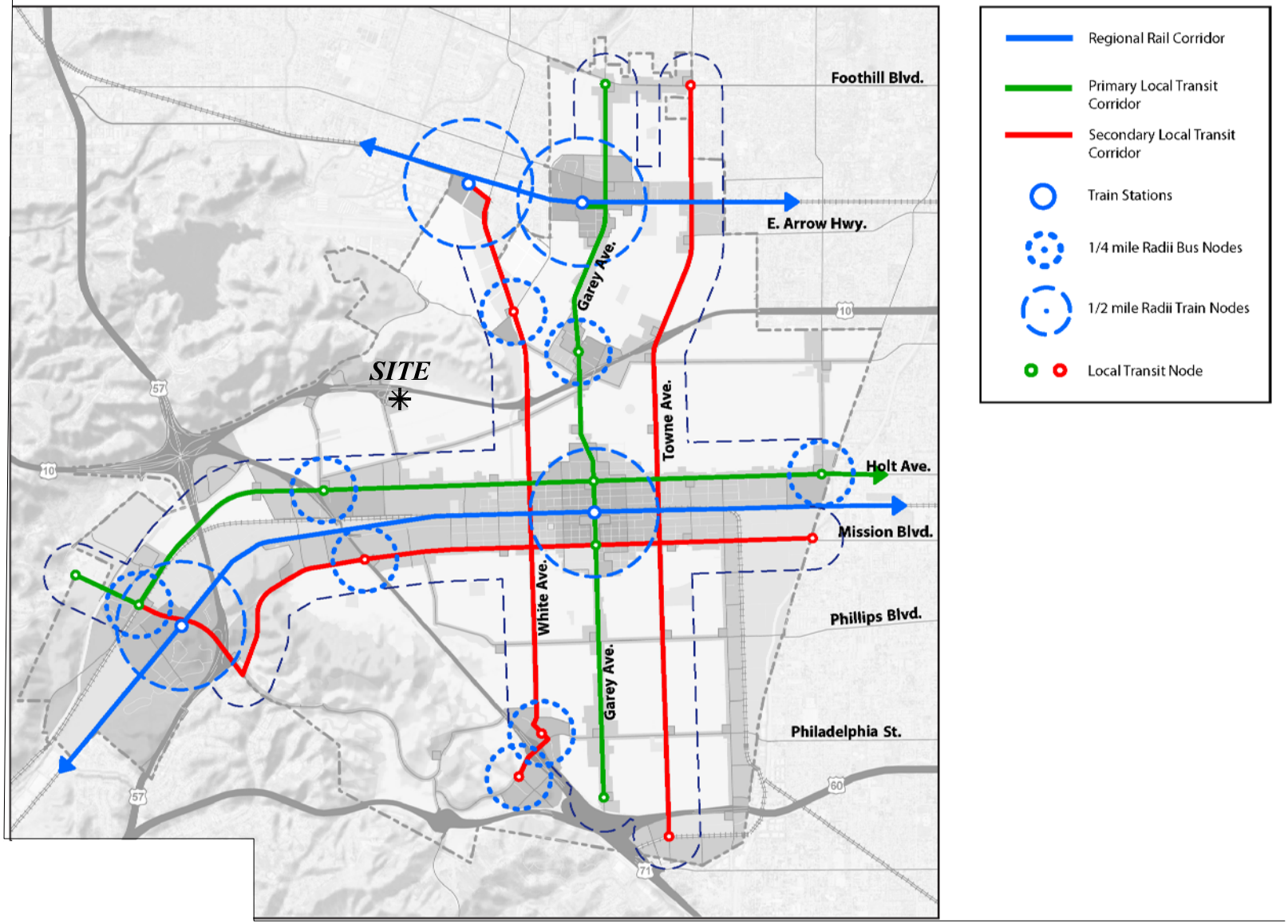


EXHIBIT 3-5: EXISTING AND PROPOSED BICYCLE FACILITIES

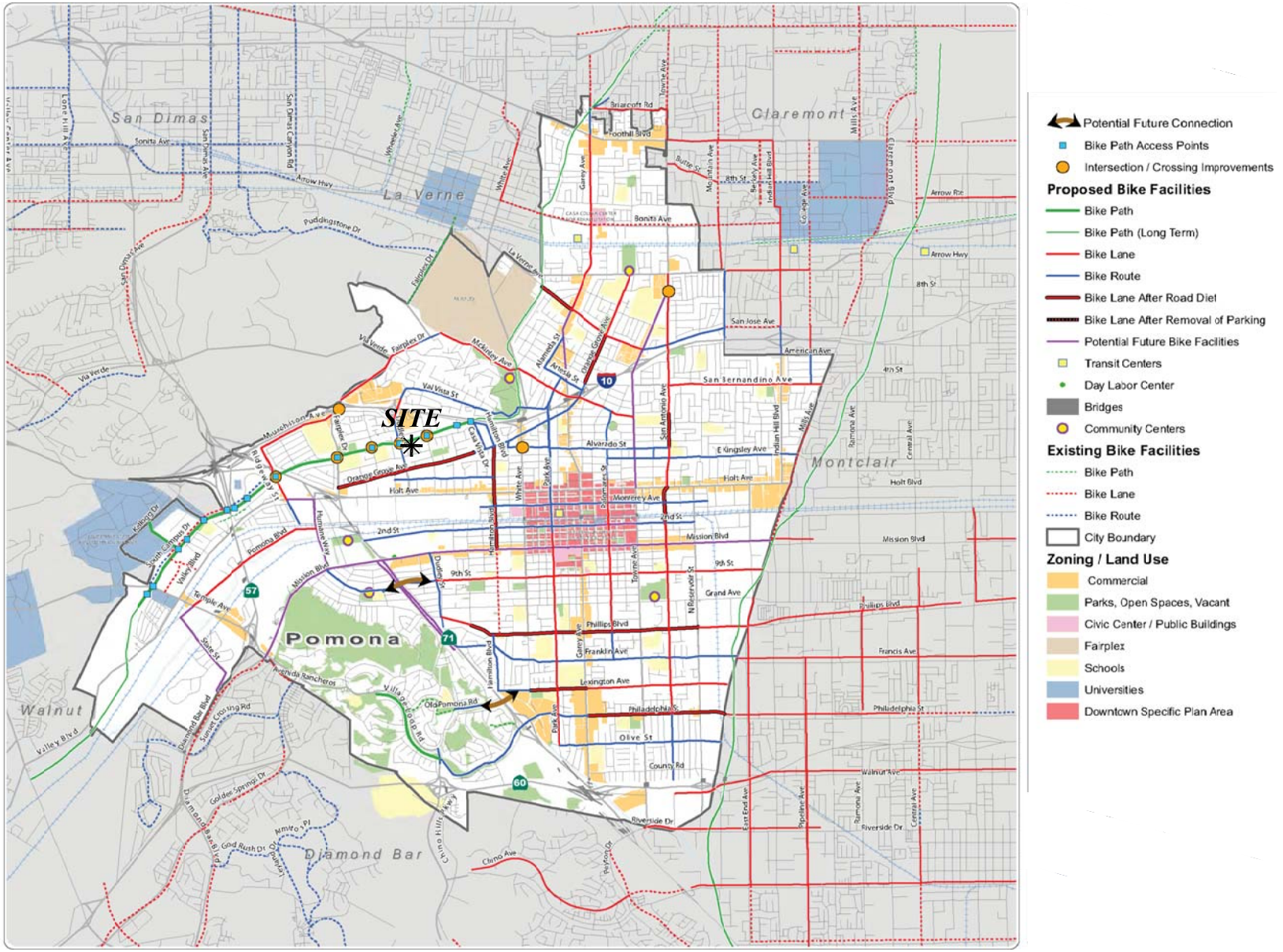
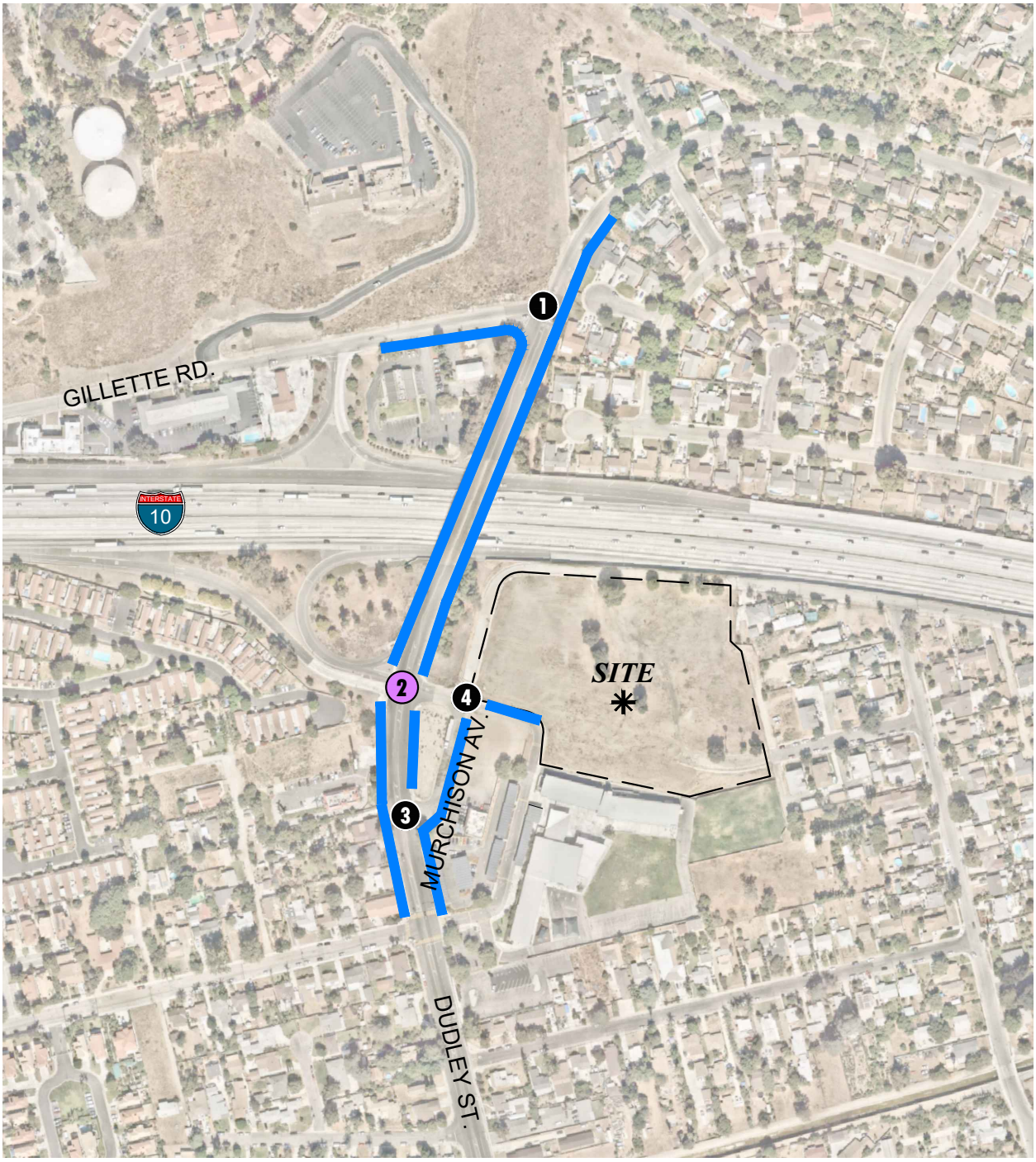


EXHIBIT 3-6: EXISTING PEDESTRIAN FACILITIES



LEGEND:

= SIDEWALK
0 = NO CROSSWALK
0 = CROSSWALK ON ONE APPROACH

N

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicated that the peak-to-daily relationship is approximately 12.53 percent. As such, the above equation utilizing a factor of 7.9799 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 12.53 percent (i.e., 1/0.1253 = 7.9799) and was assumed to sufficiently estimate average daily traffic (ADT) volumes for planning-level analyses. Existing weekday AM and PM peak hour intersection volumes are shown on Exhibit 3-7. Existing weekday mid-day PM peak hour intersection volumes are shown on Exhibit 3-8.

3.6 EXISTING (2019) CONDITIONS INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-1 which indicates that the following existing study area intersection is currently operating at an unacceptable LOS during one of the peak hours:

- Dudley St. & I-10 EB Ramps/Murchison Av. (#2) – LOS F AM and PM peak hour

Consistent with Table 3-1, a summary of the peak hour intersection LOS for Existing conditions is shown on Exhibit 3-9. The intersection operations analysis worksheets are included in Appendix 3.2 of this TIA.

3.7 EXISTING (2019) CONDITIONS TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. No study area intersections currently warrant a traffic signal for Existing traffic conditions. Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3.

EXHIBIT 3-7: EXISTING (2019) TRAFFIC VOLUMES



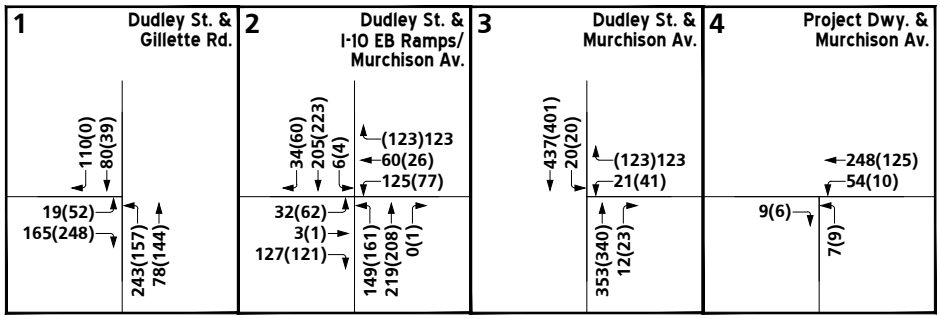


EXHIBIT 3-8: EXISTING (2019) MID-DAY TRAFFIC VOLUMES



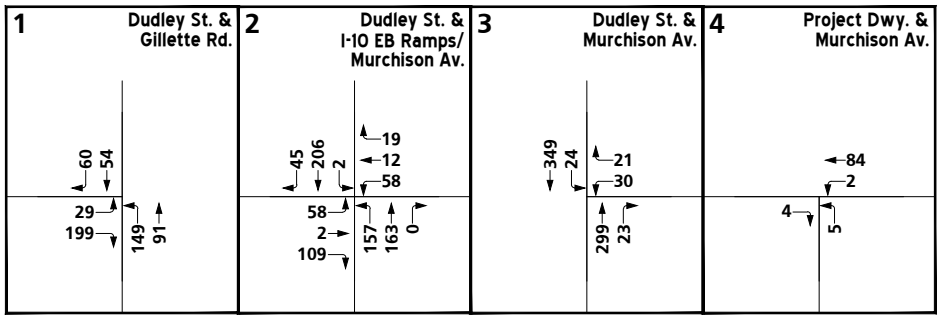
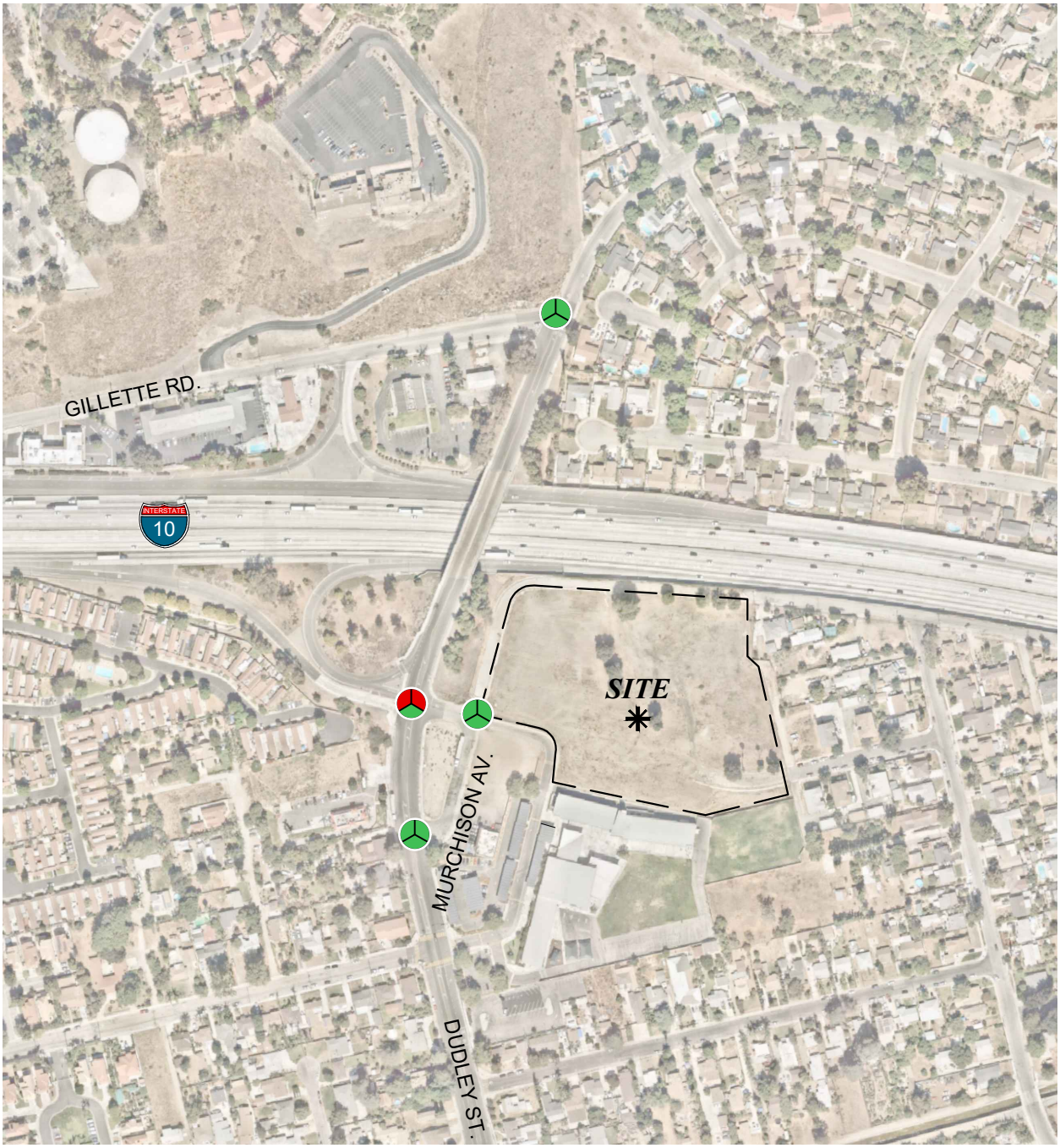


EXHIBIT 3-9: EXISTING (2019) SUMMARY OF LOS



LEGEND:

- = AM PEAK HOUR
- = PM PEAK HOUR
- = MID-DAY PEAK HOUR
- = LOS A-D
- = LOS E
- = LOS F

N

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Table 3-1

Intersection Analysis for Existing (2019) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)			Level of Service			Acceptable LOS
			Northbound			Southbound			Eastbound			Westbound									
			L	T	R	L	T	R	L	T	R	L	T	R	AM	MD	PM	AM	MD	PM	
1	Dudley St. & Gillette Rd.	AWS	1	1	0	0	1	0	1	0	1	0	0	0	12.2	9.5	10.0	B	A	A	D
2	Dudley St. & I-10 EB Ramps/Murchison Av.	CSS	1	1	d	1	1	1	0	1	1	0	1	d	**>100.0**	29.0	**64.8**	**F**	D	**F**	D
3	Dudley St. & Murchison Av.	CSS	0	1	d	1	1	0	0	0	0	0	1	0	20.4	18.0	17.5	C	C	C	D
4	Project Driveway & Murchison Av.	CSS[4]	1	1	d	1	1	1	0	1	1	0	1	d	9.2	5.3	5.2	B	A	A	D

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto Right Turn Lane

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] AWS = All-way Stop; CSS = Cross-street Stop

[4] Intersection is analyzed by SimTraffic as HCM does not provide delay.

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4 PROJECTED FUTURE TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the Project's trip assignment onto the study area roadway network. It is our understanding that the Project is to consist of 152 multifamily residential dwelling units. For the purposes of this traffic study, the Project is anticipated to be developed in a single phase with an anticipated opening year of 2022.

The Project is proposed to have access on Murchison Avenue via Project Driveway. Secondary access is provided on Murchison Avenue, east of the Project site. Project Driveway is assumed to allow for full-access. Project Driveway is assumed to allow for full-access. Regional access to the Project site will be provided by the I-10 Freeway via Gillette Road and Dudley Street.

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic that is attracted and produced by a development, and is based upon the specific land uses planned for a given project. Trip generation rates (actual vehicles) for the Project are shown in Table 4-1 illustrating daily and peak hour trip generation estimates based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, 2017, for ITE land use code 221 (Multifamily Housing – Mid-Rise) has been used to derive site specific trip generation estimates. (3)

As shown on Table 4-1, the proposed Project is anticipated to generate a net total of 828 trip-ends per day, with 54 net AM peak hour trips and 67 net PM peak hour trips. The mid-day peak hour trip generation conservatively uses the PM peak hour trip generation.

4.2 PROJECT TRIP DISTRIBUTION

Trip distribution is the process of identifying the probable destinations, directions, or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered to identify the route where the Project traffic would distribute.

The Project trip distribution patterns were developed based on an understanding of existing travel patterns in the area, the geographical location of the site, and the site's proximity to the regional arterial and state highway system.

The Project trip distribution pattern is graphically depicted on Exhibit 4-1. The trip distribution patterns were reviewed by the City of Pomona as part of the traffic study scoping process (see Appendix 1.1).

4.3 MODAL SPLIT

The potential for Project trips (non-truck) to be reduced by the use of public transit, walking, or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes would reduce the forecasted traffic volumes.

Table 4-1

Proposed Project Trip Generation Summary

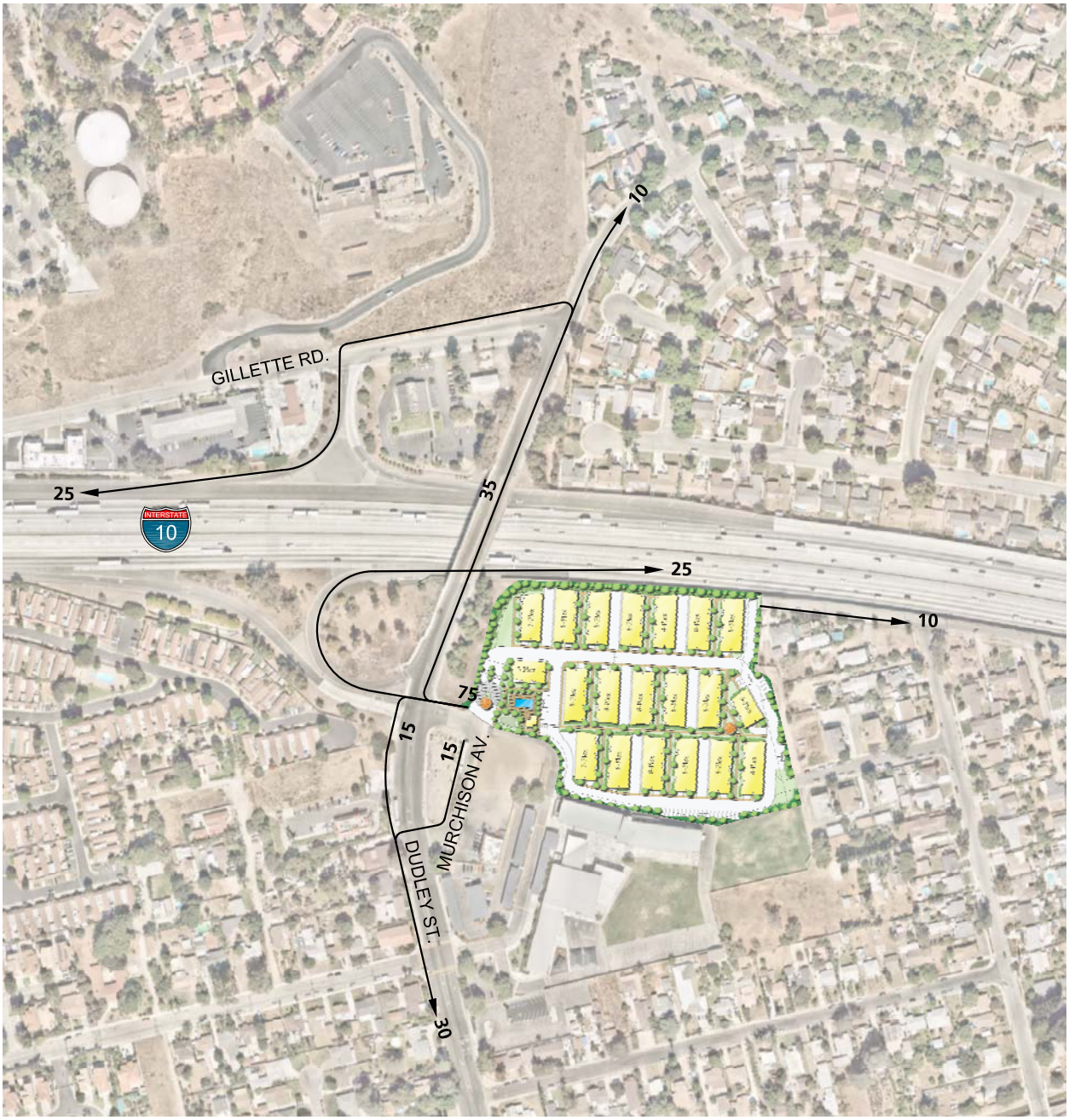
Land Use	Units[1]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Trip Generation Rates[2]									
Multifamily Housing (Mid-Rise)	DU	221	0.09	0.27	0.36	0.27	0.17	0.44	5.44

Project	Quantity	Units	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Proposed Project Trip Generation Summary									
Multifamily Housing (Mid-Rise)	152	DU	14	40	54	41	26	67	828

[1] DU = Dwelling Units

[2] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

EXHIBIT 4-1: PROJECT TRIP DISTRIBUTION



LEGEND:

10 = PERCENT TO/FROM PROJECT

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4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, Project ADT and weekday peak hour intersection turning movement volumes are shown on Exhibit 4-2. Project weekday mid-day peak hour intersection turning movement volumes are shown on Exhibit 4-3.

4.5 BACKGROUND TRAFFIC

4.5.1 OPENING YEAR CUMULATIVE CONDITIONS

Future year traffic forecasts have been based upon a background (ambient) growth factor of 2% per year. The ambient growth factor is intended to approximate traffic growth. The total ambient growth is 6.12% for 2022 traffic conditions (compounded growth of 2 percent per year over 3 years). This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the development of future projects that have been approved but not yet built, and/or for which development applications have been filed and are under consideration by governing agencies.

4.5.2 HORIZON YEAR CONDITIONS

According to information published in the LA County Congestion Management Program (CMP), the Horizon Year background traffic growth within the City of Pomona is projected to increase by 24.8% in the period between 2010 and 2035, a compounded rate of approximately 0.89% annually. (5) These growth factors are based on regional modeling efforts and estimate the general effect of cumulative development and other socioeconomic changes on traffic growth throughout the region.

Based on a comparison of Existing traffic volumes to the Horizon Year (2040) forecasts, the average growth rate is estimated at approximately 1.013 percent compounded annually between Existing and Horizon Year (2040) traffic conditions. The annual growth rate at each individual intersection is not lower than 1.009 percent or higher than 1.026 percent compounded annually over the same time period. Therefore, the annual growth rate utilized for the purposes of this analysis would appear to conservatively approximate the anticipated regional growth in traffic volumes in the City of Pomona for near term and long range traffic conditions, especially when considered along with the addition of cumulative development project traffic and project-related traffic. As such, the growth in traffic volumes assumed in this traffic analysis would tend to overstate, as opposed to understate, the potential deficiencies to traffic and circulation.

EXHIBIT 4-2: PROJECT ONLY TRAFFIC VOLUMES



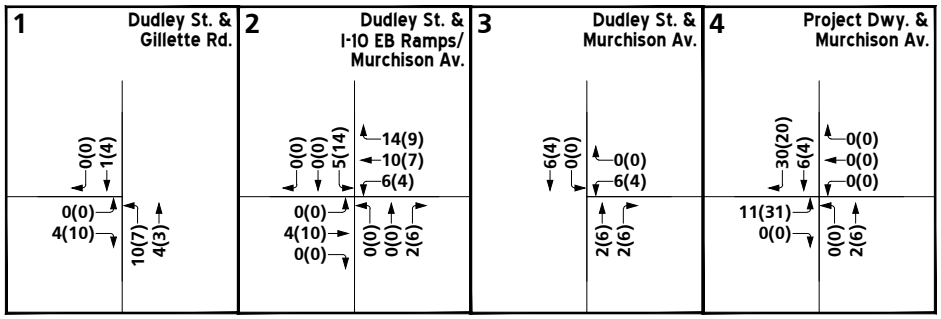
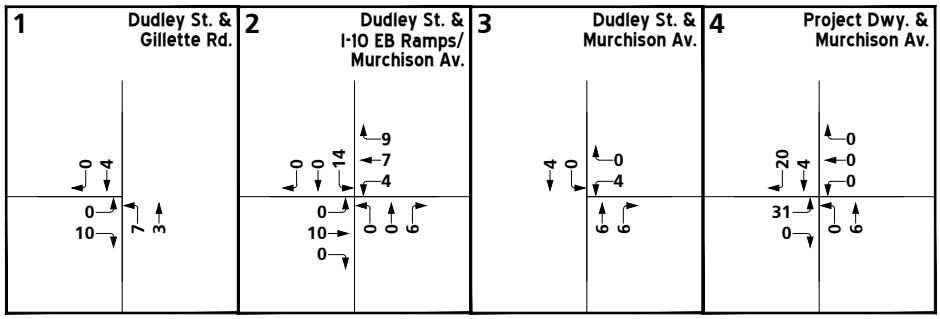


EXHIBIT 4-3: PROJECT ONLY MID-DAY TRAFFIC VOLUMES





4.6 CUMULATIVE DEVELOPMENT TRAFFIC

California Environmental Quality Act (CEQA) guidelines require that other reasonably foreseeable development projects which are either approved or being processed concurrently in the study area also be included as part of a cumulative analysis scenario. A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of Pomona. The cumulative project list includes known and foreseeable projects that are anticipated to contribute traffic to the study area intersections. Adjacent jurisdiction of the County of Riverside has also been contacted to obtain the most current list of cumulative projects from their respective jurisdictions.

Where applicable, cumulative projects anticipated to contribute measurable traffic (i.e. 50 or more peak hour trips) to study area intersections have been manually added to the study area network to generate Opening Year Cumulative forecasts. In other words, this list of cumulative development projects has been reviewed to determine which projects would likely contribute measurable traffic through the study area intersections (e.g., those cumulative projects in close proximity to the proposed Project). For the purposes of this analysis, the cumulative projects that were determined to affect one or more of the study area intersections are shown on Exhibit 4-4, listed on Table 4-2, and have been considered for inclusion.

Cumulative projects that are not expected to contribute measurable traffic to study area intersections have not been included since the traffic would dissipate due to the distance from the Project site and study area intersections. Any additional traffic generated by other projects not on the cumulative projects list is accounted for through background ambient growth factors that have been applied to the peak hour volumes at study area intersections as discussed in Section 4.5 *Background Traffic*.

4.7 TRAFFIC FORECASTS

An Existing plus Project (E+P) analysis scenario has been included to determine potential deficiencies of the Project, absent of peripheral effects of projected ambient growth or development of related projects. To provide a comprehensive assessment of the potential cumulative traffic deficiencies, two types of analyses, “buildup” and “buildout”, were performed in support of this work effort.

The buildup method was used to approximate the Opening Year conditions for the study year of 2022 and is intended to identify traffic deficiencies on both the existing and planned near-term circulation system. An ambient growth factor of 6.12% accounts for background (area-wide) traffic increases that occur over time up to the year 2022 from the year 2019 (compounded 2 percent per year growth over a 3 year period). The Opening Year Cumulative traffic conditions include background traffic, traffic generated by other cumulative development projects within the study area, and the traffic generated by the proposed Project. The 2022 roadway networks are similar to the existing conditions roadway network with the exception of future roadways and intersections proposed to be developed by the Project.

EXHIBIT 4-4: CUMULATIVE DEVELOPMENT LOCATION MAP

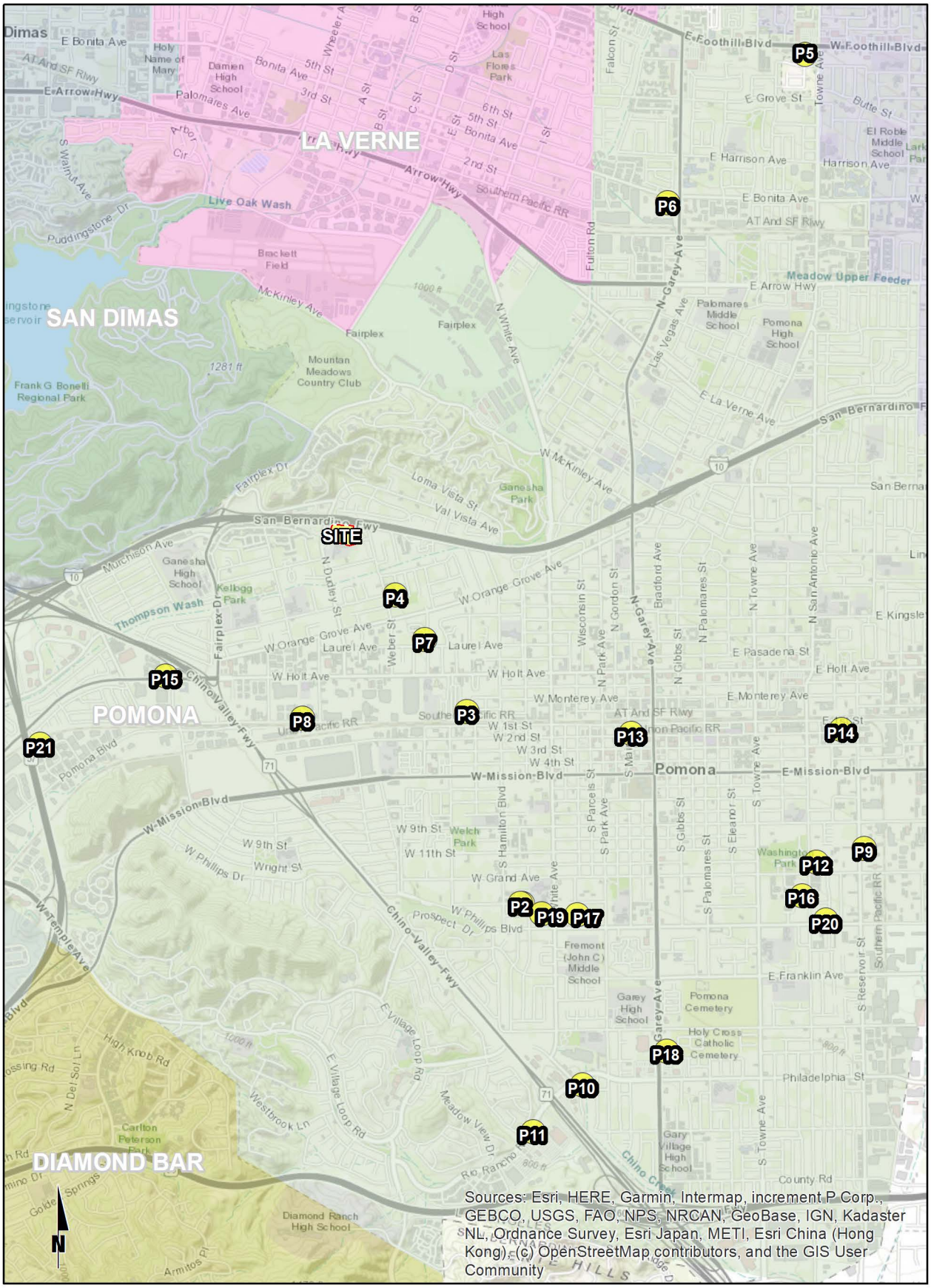


Table 4-2

Cumulative Development Land Use Summary

TAZ	Project	Land Use	Quantity	Units[1]
City of Pomona				
P1	1028 & 1026 W. Fernleaf Ave (CUP 3967-2016)	Residential	2	DU
P2	1036 & 1038 W. Fernleaf Ave (CUP 4280-2016)	Residential	2	DU
P3	203 N. Myrtle Ave. (DPR 6535-2016)	Residential	35	DU
P4	990 Weber St. (PREAPP 5217-2016)	Residential	11	DU
P5	700 E. Foothill Blvd. (DPR 6897-2017)	Hotel	132	DU
P6	2771 N. Garey Ave. (DPR 5953-2016)	Mixed Use	650	DU
P7	737 Lewis St. (CUP 5668-2016)	Residential	12	DU
P8	1831 Mount Vernon Ave. (CUP 6656-2017)	Industrial	1	AC
P9	1110 S. Reservoir St. (CUP 6752-2017)	Industrial	72.000	TSF
P10	22 Rio Rancho Rd. (CUP 5500-2016)	Commercial	5.540	TSF
P11	46 Rio Rancho Rd. (CUP 7029-2017)	Commercial	6.114	TSF
P12	1198 & 1236 S. San Antonio Ave. (CUP 4607-2016)	Residential	14	DU
P13	295 W. 2nd St. (MAJSDP 3777-2016)	Mixed Use	366	DU
P14	1131 E. 2nd St. (CUP 4635-2016)	Industrial	29.000	TSF
P15	2207 Valley Blvd. (CUP 5708-2016)	Commercial	2.590	TSF
P16	1385 S. San Antonio Ave. (CUP 4574-2016)	Residential	5	DU
P17	1452 S. White Ave. (CUP 6726-2017)	Residential	12	DU
P18	1982 S. Garey Ave. (DPR 5181-2016)	Residential	20	DU
P19	1427 S. White Ave. (CUP 4843-2016)	Residential	15	DU
P20	1061 E. Phillips Blvd. (CUP 4831-2016)	Residential	6	DU
P21	105 Mercury Circle (CUP 6213-2016)	Commercial	12.000	TSF

[1] AC = Acres; DU = Dwelling Units; TSF = Thousand Square Feet

The near-term traffic analysis includes the following traffic conditions, with the various traffic components:

- Opening Year Cumulative (2022) Without Project
    - Existing 2019 volumes
    - Ambient growth traffic (6.12%)
    - Cumulative Development Traffic
- Opening Year Cumulative (2022) With Project
    - Existing 2019 volumes
    - Ambient growth traffic (6.12%)
    - Cumulative Development traffic
    - Project Traffic

The buildout approach is used to forecast long-range Horizon Year traffic conditions and reflects City General Plan Buildout, as well as traffic resulting from growth of the area represented in regional plans.

The long-range traffic analysis includes the following traffic conditions, with the various traffic components:

- Horizon Year (2040) Without Project
    - Refined SCAG traffic forecasts
- Horizon Year (2040) With Project
    - Refined SCAG traffic forecasts
    - Project Traffic

4.8 HORIZON YEAR (2040) VOLUME DEVELOPMENT

Assessment of Horizon Year Without and With Project traffic conditions indicates whether circulation system improvements reflected in the City of Pomona Circulation Element are adequate to accommodate future traffic at the target LOS, or if additional improvements beyond those planned improvements is necessary. The Horizon Year traffic volumes have been derived from SCAG using accepted procedures for model forecast refinement and smoothing. The Horizon Year peak hour forecasts were developed using the modeled long-range forecasts and refined using Opening Year With Project peak hour turning movement volumes. Local knowledge of development patterns, City and regional plans, and roadway projects were used to confirm or refine future travel patterns. Horizon Year turning volumes were compared to Existing and Opening Year with Project volumes in order to ensure adequate growth as a part of the refinement process.

The adopted Southern California Association of Governments (SCAG) 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (May 2020, to be adopted September 2020) growth forecasts for the City of Pomona identifies projected growth in population of 154,700 in 2016 to 187,600 in 2045, or a 21.27% increase over the 29-year period. (8) The change in population equates to roughly a 0.67% growth rate, compounded annually. Similarly, growth over the same 29-year period in households is projected to increase by 34.35%,

or a 1.02% annual growth rate. Finally, growth in employment over the same 29-year period is projected to increase by 13.82%, or a 0.45% annual growth rate.

Based on a comparison of Existing (2019) traffic volumes to the Horizon Year (2040) forecasts, the average growth rate is estimated at approximately 1.26%, compounded annually between Existing (2019) and 2040 traffic conditions. The annual growth rate at each individual intersection is not lower than 0.97% compounded annually to as high as 2.61% compounded annually over the same time period. Therefore, the annual growth rate utilized for the purposes of this analysis would appear to conservatively approximate the anticipated regional growth in traffic volumes in the City of Pomona for Opening Year Cumulative and Horizon Year (2040) traffic conditions, especially when considered along with the addition of project-related traffic, which would tend to overstate as opposed to understate the potential effects to traffic and circulation.

Conservation of flow review and forecast adjustments were performed as necessary to ensure that all future Opening Year Cumulative and Horizon Year traffic volume forecasts are reasonable. Flow conservation checks have been performed in an effort to ensure the flow of traffic volumes between closely spaced intersections is maintained. In other words, traffic flow between two closely spaced intersections, such as two freeway ramp locations, is verified in order to make certain that vehicles leaving one intersection are entering the adjacent intersection and that there are no unexplained loss of vehicles. The result of this traffic forecasting procedure is a series of traffic volumes which are suitable for traffic operations analysis.

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5 EXISTING PLUS PROJECT TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Existing Plus Project (E+P) conditions and the resulting intersection operations and traffic signal warrant analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for E+P conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for E+P conditions only (e.g., intersection and roadway improvements at the Project's frontage and driveways).

5.2 EXISTING PLUS PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus Project traffic. Exhibit 5-1 shows the weekday ADT and peak hour volumes which can be expected for E+P traffic conditions. Exhibit 5-2 shows the weekday mid-day peak hour volumes which can be expected for E+P traffic conditions.

5.3 INTERSECTION OPERATIONS ANALYSIS

E+P peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TIA. The intersection analysis results are summarized in Table 5-1 and shown on Exhibit 5-2, which indicates that there are no additional study area intersections anticipated to operate at unacceptable LOS for E+P conditions in addition to those listed under Existing traffic conditions.

The intersection operations analysis worksheets for E+P traffic conditions are included in Appendix 5.1 of this TIA.

5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

There are no traffic signals anticipated to meet planning level (ADT) or peak hour volume-based traffic signal warrants under E+P traffic conditions (see Appendix 5.2).

5.5 RECOMMENDED IMPROVEMENTS

This section provides a summary of Project deficiencies and recommended improvements. Based on the deficiency criteria discussed in Section 2.5 *Deficiencies*, the Project contributes to deficiencies at the following intersection for E+P traffic conditions:

- Dudley St. & I-10 EB Ramps/Murchison Av. (#2)

The effectiveness of the proposed recommended improvements is presented in Table 5-2 for E+P traffic conditions. The intersection operations analysis worksheets for E+P, with improvements, are included in Appendix 5.3.

EXHIBIT 5-1: E+P TRAFFIC VOLUMES



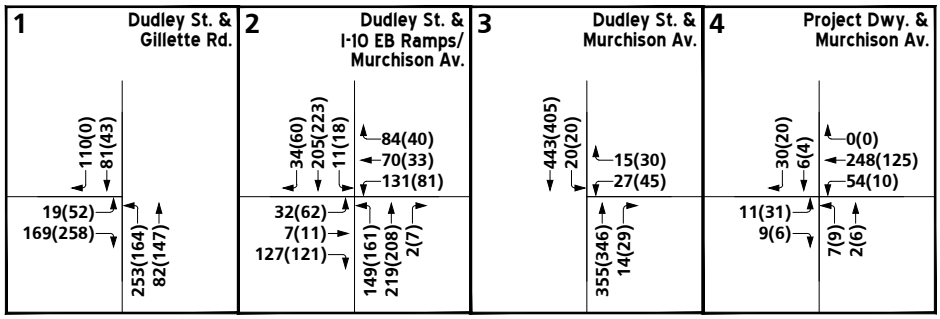


EXHIBIT 5-2: E+P MID-DAY TRAFFIC VOLUMES



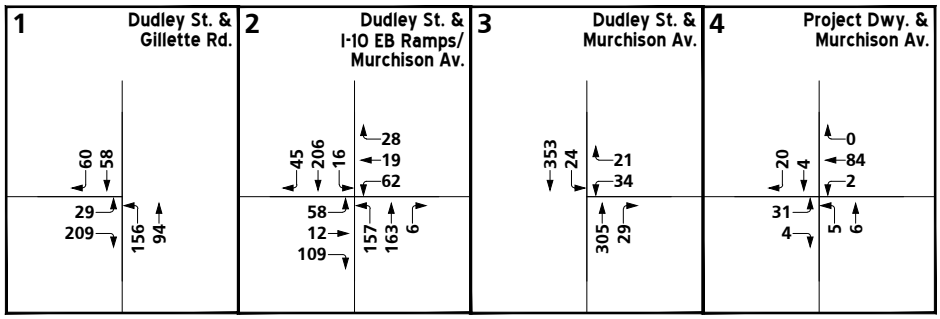
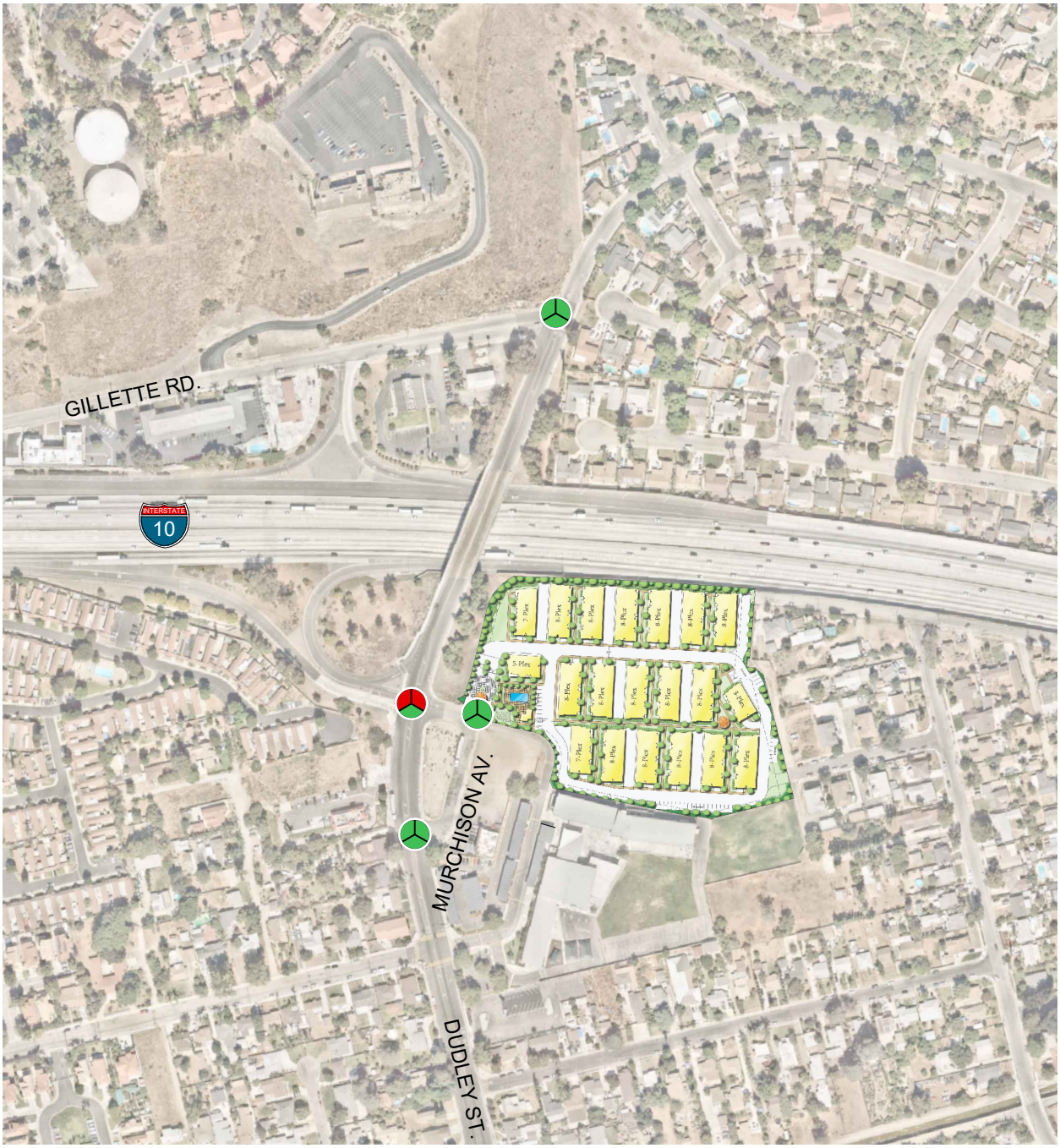


EXHIBIT 5-3: E+P SUMMARY OF LOS



LEGEND:

- = AM PEAK HOUR
- = PM PEAK HOUR
- = MID-DAY PEAK HOUR
- = LOS A-D
- = LOS E
- = LOS F

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Table 5-1

Intersection Analysis for E+P Conditions

#	Intersection	Traffic Control[2]	Existing (2019)						E+P						Acceptable LOS
			Delay[1] (secs.)			Level of Service			Delay (secs.)			Level of Service			
			AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	
1	Dudley St. & Gillette Rd.	AWS	12.2	9.5	10.0	B	A	A	12.6	9.6	10.2	B	A	B	D
2	Dudley St. & I-10 EB Ramps/Murchison Av.	CSS	**>100.0**	29.0	**64.8**	**F**	D	**F**	**>100.0**	34.4	**95.1**	**F**	D	**F**	D
3	Dudley St. & Murchison Av.	CSS	20.4	18.0	17.5	C	C	C	21.1	18.5	17.9	C	C	C	D
4	Project Driveway & Murchison Av.	CSS[3]	9.2	5.3	5.2	B	A	A	9.6	5.5	5.8	B	A	A	D

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[2] AWS = All-way Stop; CSS = Cross-street Stop

[3] Intersection is analyzed by SimTraffic as HCM does not provide delay.

Table 5-2

Intersection Analysis for E+P Conditions With Improvements

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)			Level of Service		
			Northbound			Southbound			Eastbound			Westbound								
			L	T	R	L	T	R	L	T	R	L	T	R	AM	MD	PM	AM	MD	PM
2	Dudley St. & I-10 EB Ramps/Murchison Av.																			
	- Without Improvements	CSS	1	1	d	1	1	1	0	1	1	0	1	d	**>100.0**	34.4	**95.1**	**F**	D	**F**
	- With Improvements	**AWS**	1	1	d	1	1	1	0	1	1	0	1	d	15.2	12.1	13.9	C	B	B

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d= Defacto Right Turn Lane;**1** = Improvement

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] AWS = All-way Stop; CSS = Cross-street Stop; **AWS** = Improvement

6 OPENING YEAR CUMULATIVE (2022) TRAFFIC CONDITIONS

This section discusses the methods used to develop Opening Year Cumulative (2022) Without and With Project traffic forecasts and the resulting intersection operations and traffic signal warrants.

Based on discussions with City staff, cumulative traffic deficiencies and intersection/roadway improvement requirements would be identified through the analysis of Opening Year Cumulative traffic conditions.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2022) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be in place prior to or constructed by the Project to provide site access are also assumed to be in place for Opening Year Cumulative With Project conditions.

6.2 OPENING YEAR CUMULATIVE WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 6.12% in conjunction with the addition of cumulative development traffic. The weekday ADT, AM, and PM peak hour volumes which can be expected for Opening Year Cumulative (2022) Without Project traffic conditions are shown on Exhibit 6-1. The weekday mid-day peak hour volumes are shown on Exhibit 6-2.

6.3 OPENING YEAR CUMULATIVE WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 6.12% in conjunction with the addition of cumulative project development and the addition of Project traffic. The weekday ADT, weekday AM, and PM peak hour volumes which can be expected for Opening Year Cumulative (2022) With Project traffic conditions are shown on Exhibit 6-3. The weekday mid-day peak hour volumes are shown on Exhibit 6-4.

6.4 INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under Opening Year Cumulative (2022) Without Project conditions with roadway and intersection geometrics consistent with Existing conditions. As shown on Table 6-1, no additional study area intersections are anticipated to operate at unacceptable levels of service under Opening Year Cumulative (2022) Without Project conditions, consistent with Existing (2019) and E+P traffic conditions.

As shown on Table 6-1, the addition of Project traffic is not anticipated to result in any intersections to operate at an unacceptable LOS.

EXHIBIT 6-1: OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT TRAFFIC VOLUMES



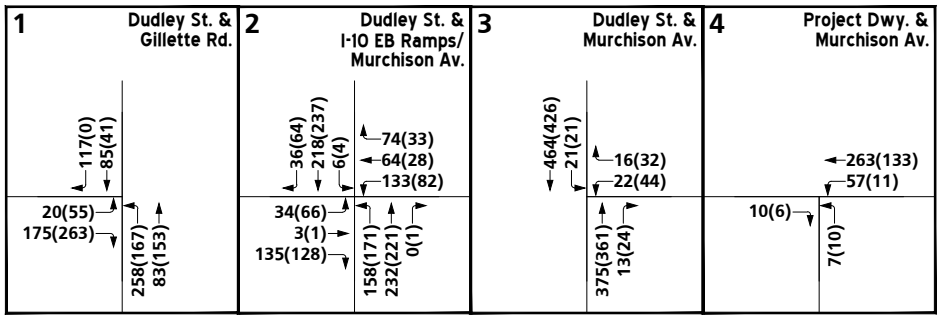


EXHIBIT 6-2: OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT MID-DAY TRAFFIC VOLUMES



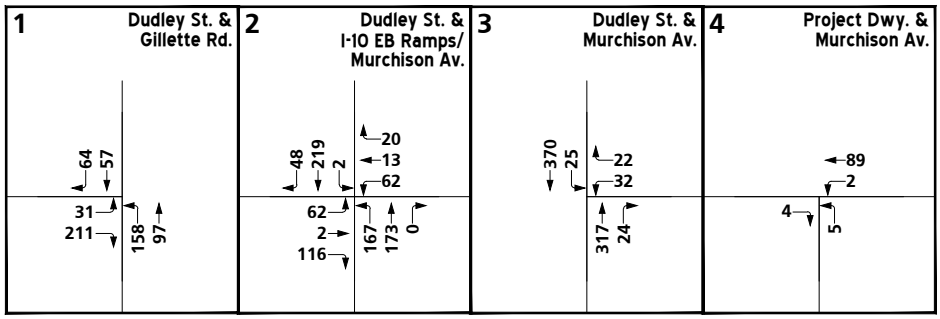


EXHIBIT 6-3: OPENING YEAR CUMULATIVE (2022) WITH PROJECT TRAFFIC VOLUMES



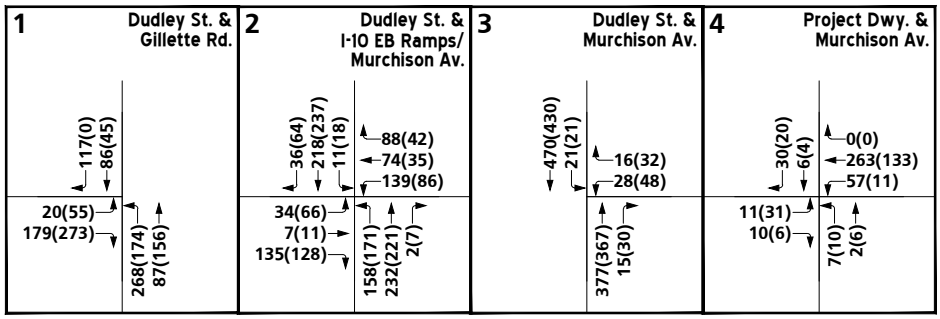
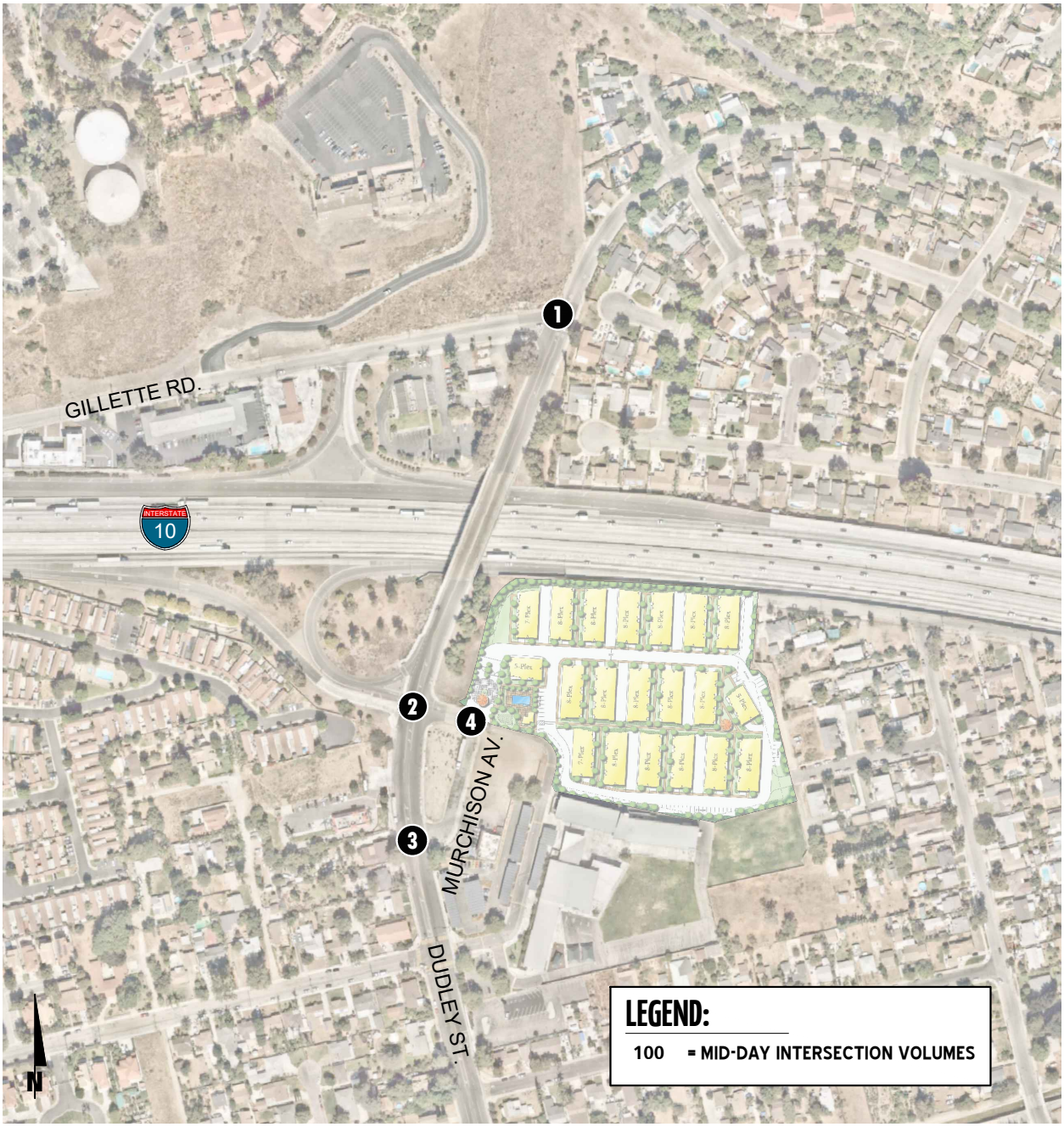


EXHIBIT 6-4: OPENING YEAR CUMULATIVE (2022) WITH PROJECT MID-DAY TRAFFIC VOLUMES



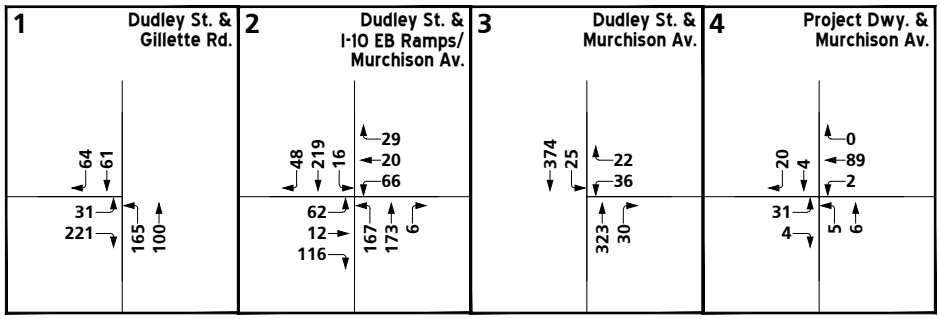


Table 6-1

Intersection Analysis for Opening Year Cumulative (2022) Conditions

#	Intersection	Traffic Control[2]	2022 Without Project						2022 With Project						Acceptable LOS
			Delay[1] (secs.)			Level of Service			Delay (secs.)			Level of Service			
			AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	
1	Dudley St. & Gillette Rd.	AWS	12.9	9.7	10.3	B	A	B	13.3	9.9	10.5	B	A	B	D
2	Dudley St. & I-10 EB Ramps/Murchison Av.	CSS	**>100.0**	34.3	**95.1**	**F**	D	**F**	**>100.0**	**42.1**	**>100.0**	**F**	**E**	**F**	D
3	Dudley St. & Murchison Av.	CSS	22.1	19.3	18.7	C	C	C	23.0	19.9	19.2	C	C	C	D
4	Project Driveway & Murchison Av.	CSS[3]	7.4	5.5	5.2	A	A	A	10.5	5.0	5.5	B	A	A	D

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[2] AWS = All-way Stop; CSS = Cross-street Stop

[3] Intersection is analyzed by SimTraffic as HCM does not provide delay.

Consistent with Table 6-1, a summary of the peak hour intersection LOS for Opening Year Cumulative (2022) Without Project traffic conditions are shown on Exhibit 6-5. Consistent with Table 6-1, a summary of the peak hour intersection LOS for Opening Year Cumulative (2022) With Project conditions are shown on Exhibit 6-6.

The intersection operations analysis worksheets for Opening Year Cumulative (2022) Without Project conditions are included in Appendix 6.1 of this TIA. The intersection operations analysis worksheets for Opening Year Cumulative (2022) With Project conditions are included in Appendix 6.2 of this TIA.

6.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Opening Year Cumulative (2022) traffic conditions are based on Opening Year Cumulative (2022) Without and With Project volumes. For Opening Year Cumulative (2022) Without Project traffic conditions, there are no traffic signals anticipated to meet planning level (ADT) or peak hour volume-based traffic signal warrants under Opening Year Cumulative (2022) Without Project traffic conditions (see Appendix 6.3).

With the addition of Project traffic, no study area intersections appear to warrant a traffic signal (see Appendix 6.4).

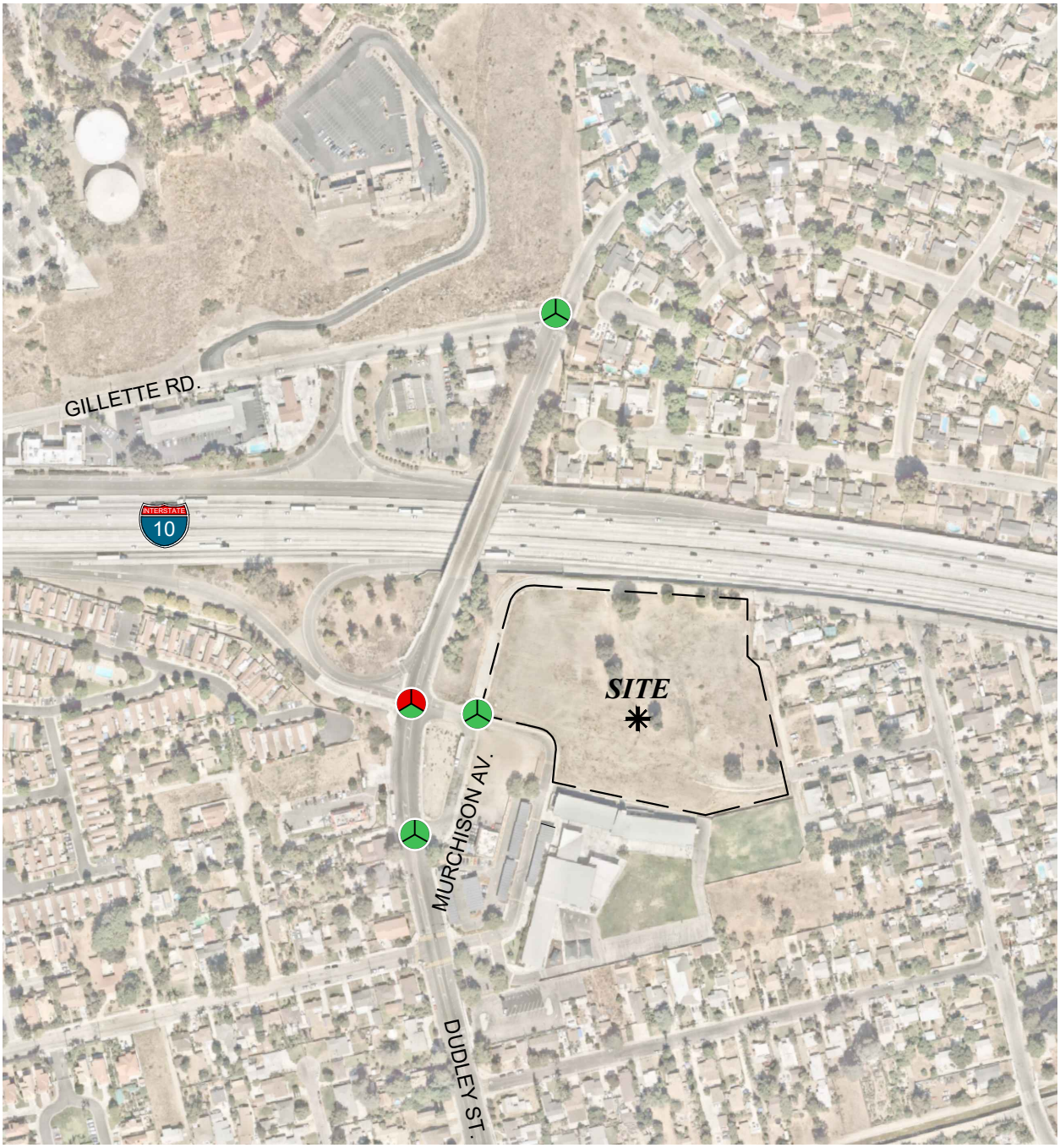
6.6 RECOMMENDED IMPROVEMENTS

This section provides a summary of Project deficiencies and recommended improvements. Based on the deficiency criteria discussed in Section 2.5 *Deficiencies*, the Project contributes to deficiencies at the following intersection for Opening Year Cumulative (2022) With Project traffic conditions:

- Dudley St. & I-10 EB Ramps/Murchison Av. (#2)

The effectiveness of the proposed recommended improvements is presented in Table 6-2 for Opening Year Cumulative (2022) With Project traffic conditions. The intersection operations analysis worksheets for Opening Year Cumulative (2022) With Project, with improvements, are included in Appendix 6.5.

EXHIBIT 6-5: OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT SUMMARY OF LOS



LEGEND:

- = AM PEAK HOUR
- = PM PEAK HOUR
- = MID-DAY PEAK HOUR
- = LOS A-D
- = LOS E
- = LOS F

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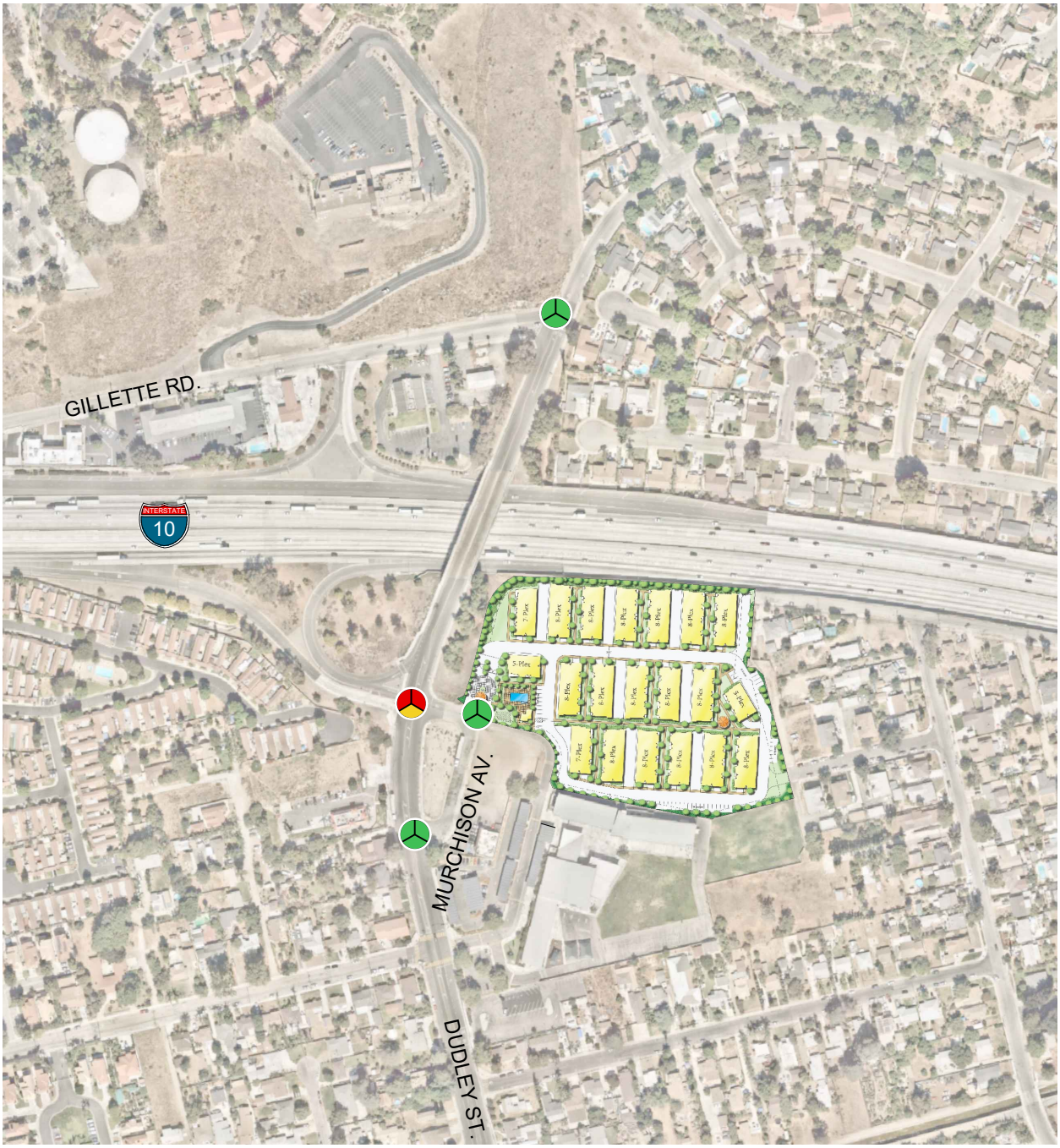
EXHIBIT 6-6: OPENING YEAR CUMULATIVE (2022) WITH PROJECT SUMMARY OF LOS



LEGEND:

- = AM PEAK HOUR
- = PM PEAK HOUR
- = MID-DAY PEAK HOUR
- = LOS A-D
- = LOS E
- = LOS F

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Table 6-2

Intersection Analysis for Opening Year Cumulative (2022) Conditions With Improvements

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)			Level of Service		
			Northbound			Southbound			Eastbound			Westbound								
			L	T	R	L	T	R	L	T	R	L	T	R	AM	MD	PM	AM	MD	PM
2	Dudley St. & I-10 EB Ramps/Murchison Av.																			
	- Without Improvements	CSS	1	1	d	1	1	1	0	1	1	0	1	d	**>100.0**	**42.1**	**>100.0**	**F**	**E**	**F**
	- With Improvements	**AWS**	1	1	d	1	1	1	0	1	1	0	1	d	16.5	12.7	15.0	C	B	B

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d= Defacto Right Turn Lane;**1** = Improvement

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] AWS = All-way Stop; CSS = Cross-street Stop; **AWS** = Improvement

7 HORIZON YEAR (2040) TRAFFIC CONDITIONS

This section discusses the methods used to develop Horizon Year (2040) Without and With Project traffic forecasts and the resulting intersection operations and traffic signal warrants.

Based on discussions with City staff, cumulative traffic deficiencies and intersection/roadway improvement requirements would be identified through the analysis of Horizon Year traffic conditions.

7.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Horizon Year (2040) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be in place prior to or constructed by the Project to provide site access are also assumed to be in place for Horizon Year With Project conditions.

7.2 HORIZON YEAR (2040) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-processed volumes obtained from the RTP traffic model, a long-range transportation plan that is developed and updated by SCAG. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Horizon Year (2040) Without Project traffic conditions are shown on Exhibit 7-1. The mid-day peak hour volumes which can be expected for Horizon Year (2040) Without Project traffic conditions are shown on Exhibit 7-2.

7.3 HORIZON YEAR (2040) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-processed volumes obtained from the SCAG RTP, plus Project traffic. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Horizon Year (2040) With Project traffic conditions are shown on Exhibit 7-3. The mid-day peak hour volumes which can be expected for Horizon Year (2040) With Project traffic conditions are shown on Exhibit 7-4.

7.4 INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under Horizon Year (2040) Without Project conditions with roadway and intersection geometrics consistent with Existing conditions. As shown on Table 7-1, no additional study area intersections are anticipated to operate at unacceptable levels of service under Horizon Year (2040) Without Project conditions, consistent with Existing (2019), E+P, and Opening Year Cumulative (2022) With Project traffic conditions.

As shown on Table 7-1, the addition of Project traffic is not anticipated to result in any intersections to operate at an unacceptable LOS.

EXHIBIT 7-1: HORIZON YEAR (2040) WITHOUT PROJECT TRAFFIC VOLUMES



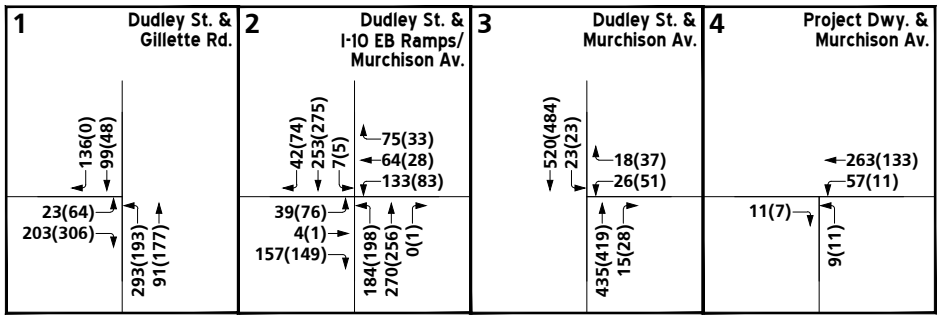


EXHIBIT 7-2: HORIZON YEAR (2040) WITHOUT PROJECT MID-DAY TRAFFIC VOLUMES



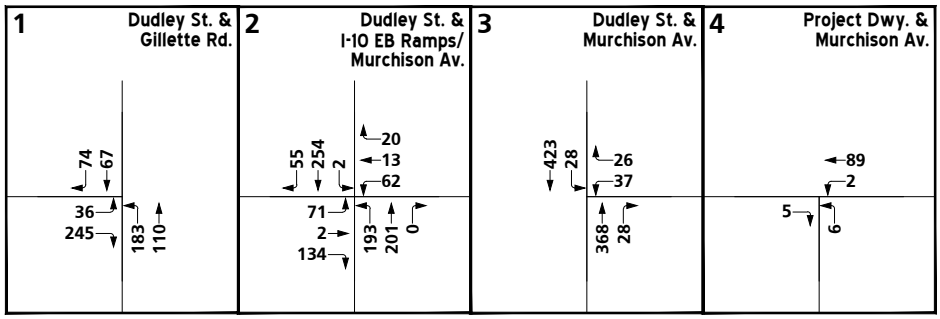


EXHIBIT 7-3: HORIZON YEAR (2040) WITH PROJECT TRAFFIC VOLUMES



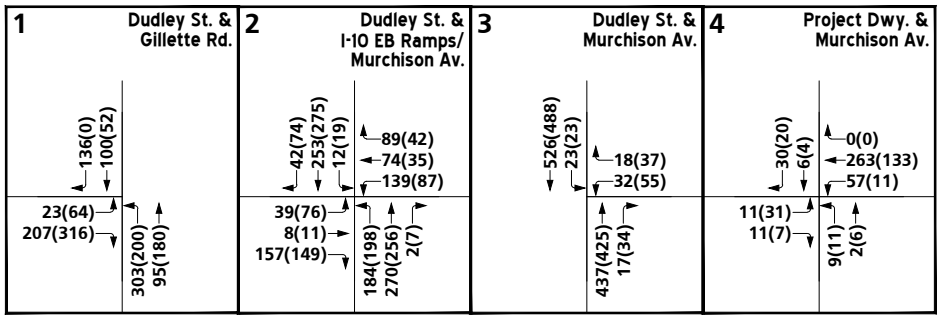
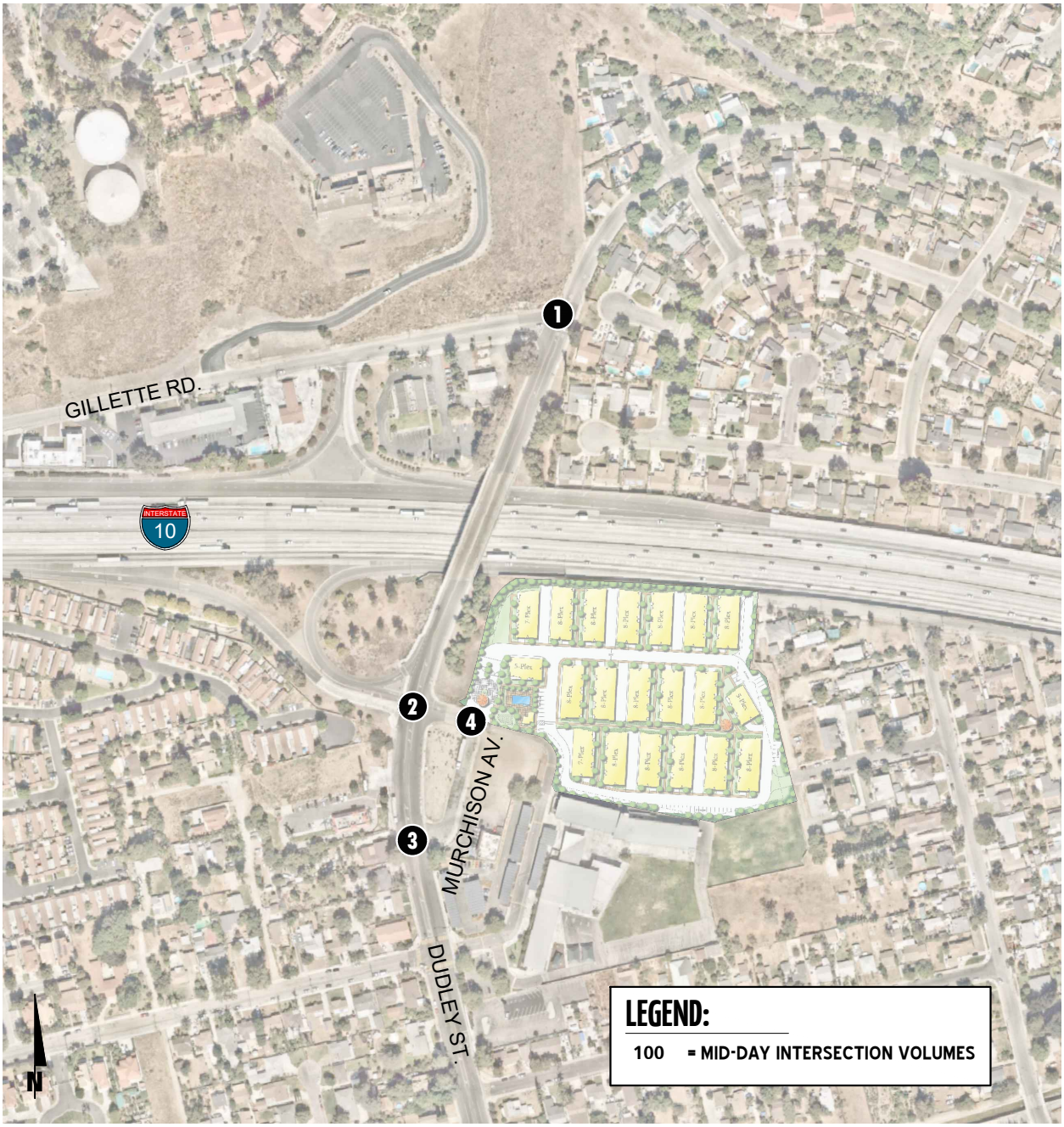


EXHIBIT 7-4: HORIZON YEAR (2040) WITH PROJECT MID-DAY TRAFFIC VOLUMES



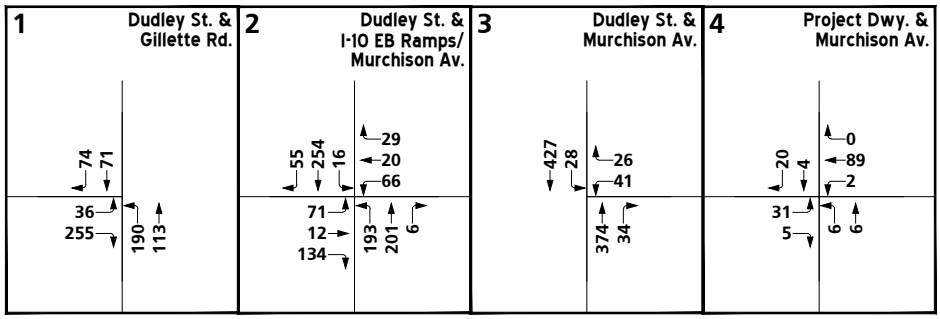


Table 7-1

Intersection Analysis for Horizon Year (2040) Conditions

#	Intersection	Traffic Control[2]	2040 Without Project						2040 With Project						Acceptable LOS
			Delay[1] (secs.)			Level of Service			Delay (secs.)			Level of Service			
			AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	
1	Dudley St. & Gillette Rd.	AWS	15.4	10.4	11.3	C	B	B	16.1	10.6	11.6	C	B	B	D
2	Dudley St. & I-10 EB Ramps/Murchison Av.	CSS	**>100.0**	**52.3**	**>100.0**	**F**	**E**	**F**	**>100.0**	**70.1**	**>100.0**	**F**	**F**	**F**	D
3	Dudley St. & Murchison Av.	CSS	27.1	23.5	22.6	D	C	C	28.6	24.4	23.4	D	C	C	D
4	Project Driveway & Murchison Av.	CSS[3]	10.4	4.7	6.2	B	A	A	14.6	5.4	6.1	B	A	A	D

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[2] AWS = All-way Stop; CSS = Cross-street Stop

[3] Intersection is analyzed by SimTraffic as HCM does not provide delay.

Consistent with Table 7-1, a summary of the peak hour intersection LOS for Horizon Year (2040) Without Project traffic conditions are shown on Exhibit 7-5. Consistent with Table 7-1, a summary of the peak hour intersection LOS for Horizon Year (2040) With Project conditions are shown on Exhibit 7-6.

The intersection operations analysis worksheets for Horizon Year (2040) Without Project conditions are included in Appendix 7.1 of this TIA. The intersection operations analysis worksheets for Horizon Year (2040) With Project conditions are included in Appendix 7.2 of this TIA.

7.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Horizon Year (2040) traffic conditions are based on Horizon Year (2040) Without and With Project volumes. For Horizon Year (2040) Without Project traffic conditions, there are no traffic signals anticipated to meet planning level (ADT) or peak hour volume-based traffic signal warrants under Horizon Year (2040) Without Project traffic conditions (see Appendix 7.3).

With the addition of Project traffic, no study area intersections appear to warrant a traffic signal (see Appendix 7.4).

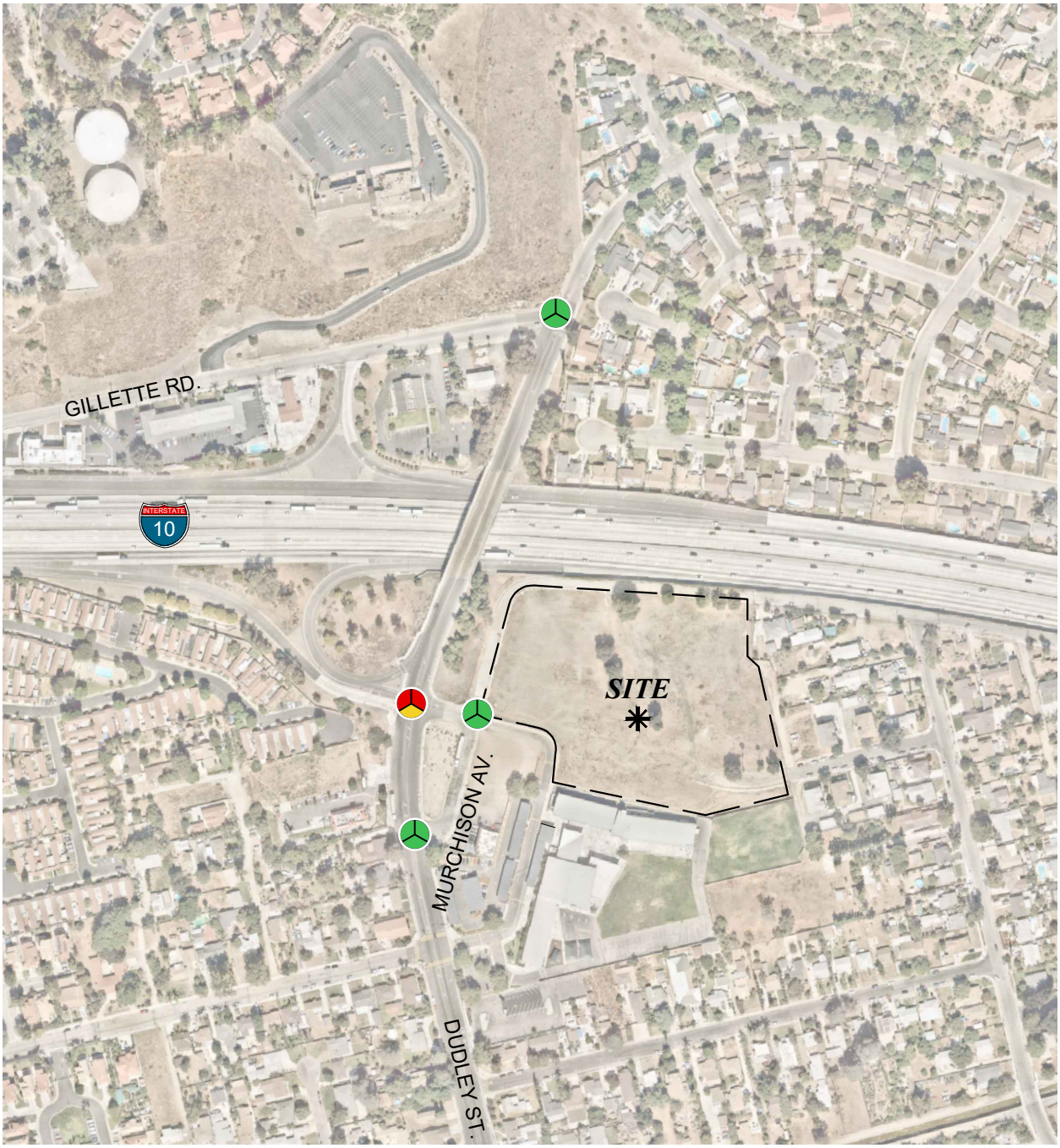
7.6 RECOMMENDED IMPROVEMENTS

This section provides a summary of Project deficiencies and recommended improvements. Based on the deficiency criteria discussed in Section 2.5 *Deficiencies*, the Project contributes to deficiencies at the following intersection for Horizon Year (2040) With Project traffic conditions:

- Dudley St. & I-10 EB Ramps/Murchison Av. (#2)

The effectiveness of the proposed recommended improvements is presented in Table 7-2 for Horizon Year (2040) With Project traffic conditions. The intersection operations analysis worksheets for Horizon Year (2040) With Project, with improvements, are included in Appendix 7.5.

EXHIBIT 7-5: HORIZON YEAR (2040) WITHOUT PROJECT SUMMARY OF LOS



LEGEND:

- = AM PEAK HOUR
- = PM PEAK HOUR
- = MID-DAY PEAK HOUR
- = LOS A-D
- = LOS E
- = LOS F

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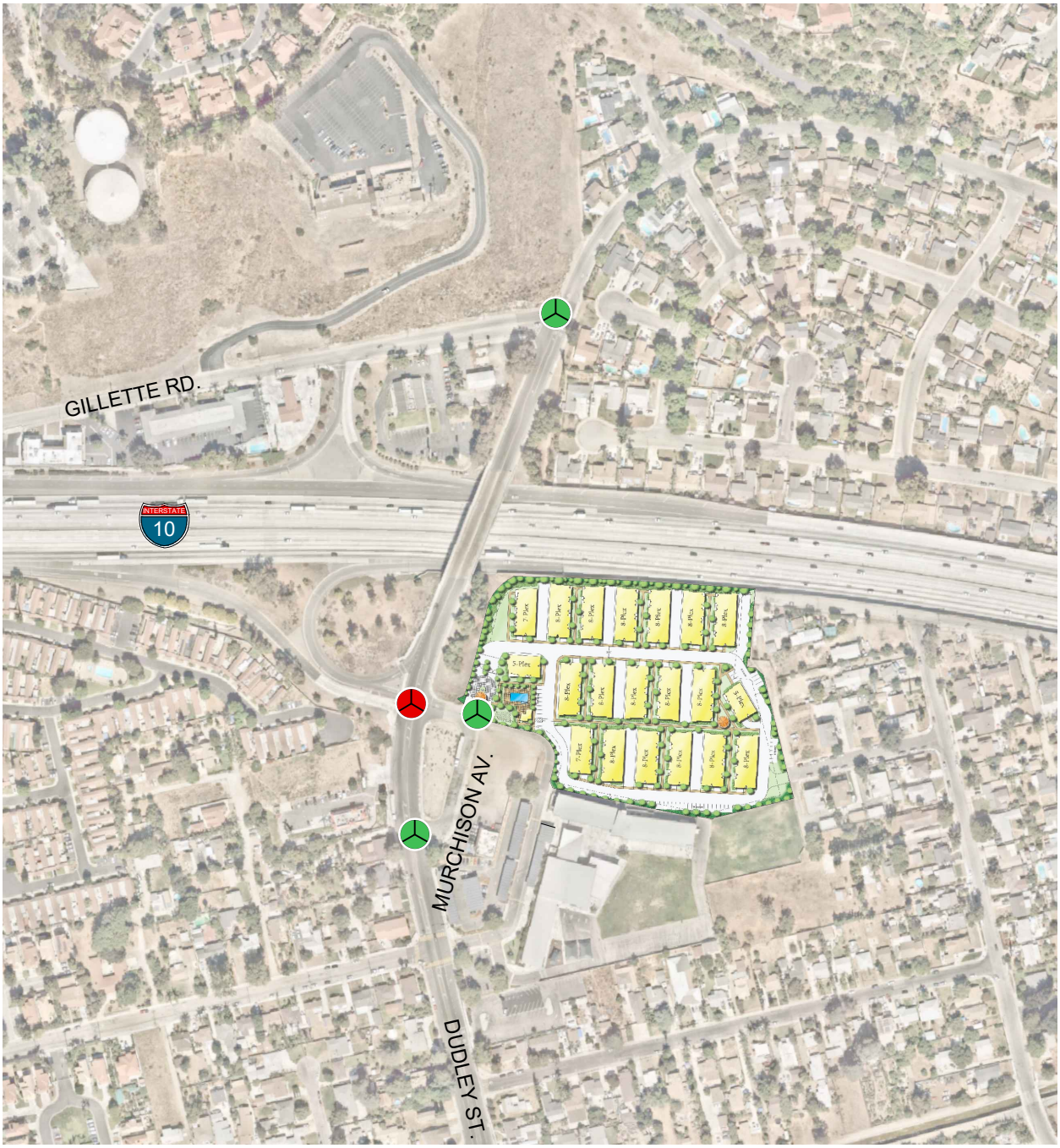
EXHIBIT 7-6: HORIZON YEAR (2040) WITH PROJECT SUMMARY OF LOS



LEGEND:

- = AM PEAK HOUR
- = PM PEAK HOUR
- = MID-DAY PEAK HOUR
- = LOS A-D
- = LOS E
- = LOS F

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Table 7-2

Intersection Analysis for Horizon Year (2040) Conditions With Improvements

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)			Level of Service		
			Northbound			Southbound			Eastbound			Westbound								
			L	T	R	L	T	R	L	T	R	L	T	R	AM	MD	PM	AM	MD	PM
2	Dudley St. & I-10 EB Ramps/Murchison Av.																			
	- Without Improvements	CSS	1	1	d	1	1	1	0	1	1	0	1	d	**>100.0**	**70.1**	**>100.0**	**F**	**F**	**F**
	- With Improvements	**AWS**	1	1	d	1	1	1	0	1	1	0	1	d	20.7	14.7	18.2	C	B	C

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d= Defacto Right Turn Lane;**1** = Improvement

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] AWS = All-way Stop; CSS = Cross-street Stop; **AWS** = Improvement

8 REFERENCES

1. **City of Pomona.** *Traffic Impact Study Guidelines.* City of Pomona : s.n., February 2012.

2. **California Department of Transportation.** *Guide for the Preparation of Traffic Impact Studies.* December 2002.

3. **Institute of Transportation Engineers.** *Trip Generation.* 10th Edition. 2017.

4. **Los Angeles County Metropolitan Transportation Authority.** *Congestion Management Program .* County of Los Angeles : s.n., 2010.

5. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 6th Edition. s.l. : National Academy of Sciences, 2016.

6. **California Department of Transportation.** Manual on Uniform Traffic Control Devices (MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CAMUTCD).* 2014.

7. **City of Pomona.** *General Plan Update.* City of Pomona : s.n., Adopted March 2014.

8. **Southern California Association of Governments.** *2020 Regional Transportation Plan/Sustainable Communities Strategy.* May 2020 (to be adopted September 2020).

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APPENDIX 1.1:

APPROVED TRAFFIC STUDY SCOPING AGREEMENT

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Exhibit B

TRAFFIC IMPACT STUDY SCOPE

CITY OF POMONA

Project Name:	1440 Murchison Avenue
Project Address:	1440 Murchison Avenue
Project Description:	The Project is to consist of 152 multifamily residential dwelling units

	Consultant	Developer
Name:	Pranesh Tarikere Urban Crossroads, Inc.	Matt Maehara MLC Holdings, Inc.
Address:	260 E. Baker Street, Suite 200 Costa Mesa, CA 92626	5 Peters Canyon Road Suite 310 Irvine, CA 92606
Telephone: E-mail:	(949) 336-5992 ptarikere@urbanxroads.com	(949) 372-3310 matt.maehara@meritagehomes.com

A. Trip Generation

Existing Land Use	General Commercial	Proposed Land Use	Medium Density Residential
Existing Zoning	C-4 Highway Commercial	Proposed Zoning	R-3 Medium Density Zone

	In	Out	Total
AM Peak Hour	14	41	54
PM Peak Hour	40	26	67

B. Trip Distribution

Attach graphical representation

C. Background Traffic

Project Opening year:	2022	Growth Rate:	2% per year

D. Study Intersections

1) Dudley St. & Gillette Rd.	
2) Dudley St. & I-10 EB Ramps/Murchison Av.	
3) Dudley St. & Murchison Av.	
4) Project Driveway & Murchison Av.	

E. Specific issues to be addressed in the Study

Traffic signal warrant analysis for all intersections	School pedestrian improvements
Site access evaluation	

Approved By:

City of Pomona Traffic Engineering:	
Date:	

City of Pomona
Public Works – Engineering

☒ Accepted ☐ Fees Due $_____

☐ ~~Accepted as Noted~~

☐ ~~Revise and Resubmit~~

Ron Chan Digitally signed by Ron Chan Date: 2019.11.13 08:09:09 -08'00'

By:_____

260 E. Baker St. | Suite 200 | Costa Mesa, CA 92626 | (949) 660-1994
urbanxroads.com

November 1, 2019 (Revised November 12, 2019)

Mr. Ron Chan
City of Pomona
505 South Garey Avenue
Pomona CA 91769

SUBJECT: 1440 MURCHISON AVENUE TRAFFIC IMPACT ANALYSIS – SCOPING AGREEMENT

Dear Mr. Ron Chan:

Urban Crossroads, Inc. is pleased to submit this scoping agreement to City of Pomona for the 1440 Murchison Avenue ("Project"), which is located at 1440 Murchison Avenue, in the City of Pomona. It is our understanding that the Project is to consist of 152 multifamily residential dwelling units.

This agreement describes the proposed analysis methodology, trip generation, trip distribution, and traffic assignment/project trips on the surrounding roadway network, which have been used to establish the proposed project study area and analysis locations. This traffic study scope of work has been prepared based on the City of Pomona Public Works Department Traffic Impact Study Guidelines (February 2012). The City of Pomona Public Works Department comments on the previously submitted scoping agreement have been provided in Attachment A.

ANALYSIS SCENARIOS

The analysis of peak hour operations at study area intersections will be provided for the following six (6) analysis scenarios:

1. Existing (2019)
2. Existing plus Project
3. Opening Year Cumulative (2022) Without Project
4. Opening Year Cumulative (2022) With Project
5. Horizon Year (2040) Without Project
6. Horizon Year (2040) With Project

STUDY AREA

The preliminary site plan is shown on Exhibit 1. As indicated on Exhibit 2, the location map, the proposed development is located at 1440 Murchison Avenue. Exhibit 2 also illustrates the proposed intersection analysis locations.

The study area intersections will be counted during the hours of 6:30-9:30 AM, 12:00-3:00 PM, and 3:00-6:00 PM during a typical weekday. Counts will be taken while the Pomona Unified School District, Cal Poly Pomona, and Western University are in session.

ANALYSIS METHDOLOGY

The City of Pomona requires the Highway Capacity Manual (HCM) 6th Edition methodology be utilized for assessing both signalized and unsignalized/stop controlled intersections.

Signalized Intersections – Signalized intersection operations analysis will be based on the methodology described in the *Highway Capacity Manual* (6th Edition). Intersection LOS operations are based on an intersection's average control delay.

Caltrans requires signalized intersection operations analysis based on the methodology described in the HCM 6th Edition. LOS is directly related to the average control delay per vehicle and is correlated to a LOS designation. As such, signalized intersections under the jurisdiction of Caltrans will be analyzed using the HCM 6th Edition methodology.

Unsignalized Intersections – The operations of unsignalized intersections will be evaluated using the methodology described in the HCM 6th Edition. The LOS rating is based on the weighted average control delay expressed in seconds per vehicle. At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. For all-way stop controlled intersections, LOS is computed for the intersection as a whole. Urban segments (i.e., segments on roadways that are generally signalized) do not typically require segment analysis. Segment requirements can normally be determined by the analysis of lane requirements at intersections.

The following assumptions are to be used in the analysis:

- Optimized signal timing
- Two (2) second lost time/phase
- 1800 vphgpl for exclusive through and right turn lanes
- 1700 vphgpl for exclusive left turn lanes
- 1600 vphgpl for exclusive dual left turn lanes

TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting

the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development.

The trip generation rates used are based upon information collected by the Institute of Transportation Engineers (ITE) as provided in their Trip Generation manual, 10th Edition, 2017. ITE land use code 221 (Multifamily Housing – Mid-Rise) has been used to derive site specific trip generation estimates.

A summary of the Project's trip generation is shown on Table 1. The Project is anticipated to generate a net total of approximately 828 trip-ends per day with 54 AM peak hour trips and 67 PM peak hour trips.

TRIP DISTRIBUTION

Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned lane use and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The Project trip distribution was developed based on anticipated travel patterns to and from the Project site. The Project's trip distribution pattern is shown on Exhibit 3.

INTERSECTION ANALYSIS LOCATIONS

The traffic impact study area was defined in conformance with the requirements of the City of Pomona's TIA guidelines. Based on these guidelines, the minimum area to be studied shall include all arterial monitoring intersections, including monitored freeway on- or off-ramp intersections, where the proposed project will add 50 or more trips during either the AM or PM weekday peak hours (of adjacent street traffic).

Two study area intersection locations shown on Exhibit 2 were selected for analysis based on the City of Pomona's traffic study requirements that require analysis of intersection locations in which a proposed Project is anticipated to contribute 50 or more peak-hour trips.

THRESHOLDS OF SIGNIFICANCE

To determine whether the addition of Project traffic at a study intersection results in a significant impact, the following thresholds of significance consistent with City of Pomona TIA Guidelines will be utilized:

Signalized Intersections

- Any study intersection that is operating at a LOS A, B, C, or D for any study scenario without Project traffic in which the addition of Project traffic causes the intersection to degrade to a LOS E or F shall mitigate that impact so as to bring the intersection back to at least LOS D.
- Any study intersection that is operating at LOS E or LOS F for any study scenario without Project traffic shall mitigate any impacts so as to bring the intersection back to the overall level of delay established prior to Project traffic being added.

Unsignalized Intersections

- An impact is considered significant if the study determines that either section a) or both sections b) and c) occur.
  a) The addition of Project related traffic causes the intersection to move from a LOS D or better to a LOS E or worse.
  b) The Project contributes additional traffic to an intersection that is already projected to operate at an LOS E or F with background traffic.
  c) One or both of the following conditions are met:
     1) The Project adds 10 or more trips to any approach
     2) The intersection meets the peak hour traffic signal warrant after the addition of Project traffic.

The LOS criteria and thresholds of significance for study area intersections outside City of Pomona will be based on applicable jurisdiction's guidelines, where available, or Los Angeles County CMP guidelines.

EXISTING COUNT DATA

Intersection turning movement counts will be conducted at the study area intersection locations for weekday AM (6:30-9:30 AM), weekday mid-day PM (12:00-3:00 PM), and weekday PM (3:00-6:00 PM) peak hours. Counts will be taken while the Pomona Unified School District, Cal Poly Pomona, and Western University are in session.

SPECIAL ISSUES

The following special issues will also be addressed as part of the TIA:

- *Site Access Evaluation:* The turn pocket lengths will be determined through peak hour traffic simulations developed in an effort to identify the required storage capacity for turn lanes at each Project driveway. Recommendations regarding site access and internal circulation features to accommodate both peak hour traffic volumes and truck traffic will be included in the traffic study.
- *School Pedestrian Improvements:* The existing pedestrian conditions near the Project study area will be evaluated. Recommendations regarding safety and pedestrian improvements to accommodate the nearby school will be included in the traffic study.

OPEN ITEMS – CUMULATIVE DEVELOPMENTS PROJECTS

Exhibit 4 illustrates a cumulative development location map. A land use summary of the cumulative development projects are shown on Table 2. We request the City staff review the list and/or provide any additional cumulative development projects for inclusion in the traffic study, and associated mitigation

measures where appropriate for recently approved, but not yet constructed development. The City of Sam Dimas and the City of La Verne will also be contacted to obtain cumulative development projects in their respective jurisdictions.

CONCLUSION

Urban Crossroads, Inc. is pleased to submit this letter documenting the Project trip generation, trip distribution, and the recommended intersection analysis locations for the 1440 Murchison Avenue Traffic Impact Study. We will continue to move forward towards completing the traffic study after receiving jurisdiction approval or comments finalizing the study area.

If you have any questions, please contact me directly at (949) 339-5992.

Respectfully submitted,

URBAN CROSSROADS, INC.



Pranesh Tarikere, PE
Senior Engineer

Table 1

Proposed Project Trip Generation Summary

Land Use	Units[1]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Trip Generation Rates[2]									
Multifamily Housing (Mid-Rise)	DU	221	0.09	0.27	0.36	0.27	0.17	0.44	5.44

Project	Quantity	Units	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Proposed Project Trip Generation Summary									
Multifamily Housing (Mid-Rise)	152	DU	14	40	54	41	26	67	828

[1] DU = Dwelling Units

[2] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

Table 2

Cumulative Development Land Use Summary

TAZ	Project	Land Use	Quantity	Units[1]
City of Pomona				
P1	1028 & 1026 W. Fernleaf Ave (CUP 3967-2016)	Residential	2	DU
P2	1036 & 1038 W. Fernleaf Ave (CUP 4280-2016)	Residential	2	DU
P3	203 N. Myrtle Ave. (DPR 6535-2016)	Residential	35	DU
P4	990 Weber St. (PREAPP 5217-2016)	Residential	11	DU
P5	700 E. Foothill Blvd. (DPR 6897-2017)	Hotel	132	DU
P6	2771 N. Garey Ave. (DPR 5953-2016)	Mixed Use	650	DU
P7	737 Lewis St. (CUP 5668-2016)	Residential	12	DU
P8	1831 Mount Vernon Ave. (CUP 6656-2017)	Industrial	1	AC
P9	1110 S. Reservoir St. (CUP 6752-2017)	Industrial	72.000	TSF
P10	22 Rio Rancho Rd. (CUP 5500-2016)	Commercial	5.540	TSF
P11	46 Rio Rancho Rd. (CUP 7029-2017)	Commercial	6.114	TSF
P12	1198 & 1236 S. San Antonio Ave. (CUP 4607-2016)	Residential	14	DU
P13	295 W. 2nd St. (MAJSDP 3777-2016)	Mixed Use	366	DU
P14	1131 E. 2nd St. (CUP 4635-2016)	Industrial	29.000	TSF
P15	2207 Valley Blvd. (CUP 5708-2016)	Commercial	2.590	TSF
P16	1385 S. San Antonio Ave. (CUP 4574-2016)	Residential	5	DU
P17	1452 S. White Ave. (CUP 6726-2017)	Residential	12	DU
P18	1982 S. Garey Ave. (DPR 5181-2016)	Residential	20	DU
P19	1427 S. White Ave. (CUP 4843-2016)	Residential	15	DU
P20	1061 E. Phillips Blvd. (CUP 4831-2016)	Residential	6	DU
P21	105 Mercury Circle (CUP 6213-2016)	Commercial	12.000	TSF

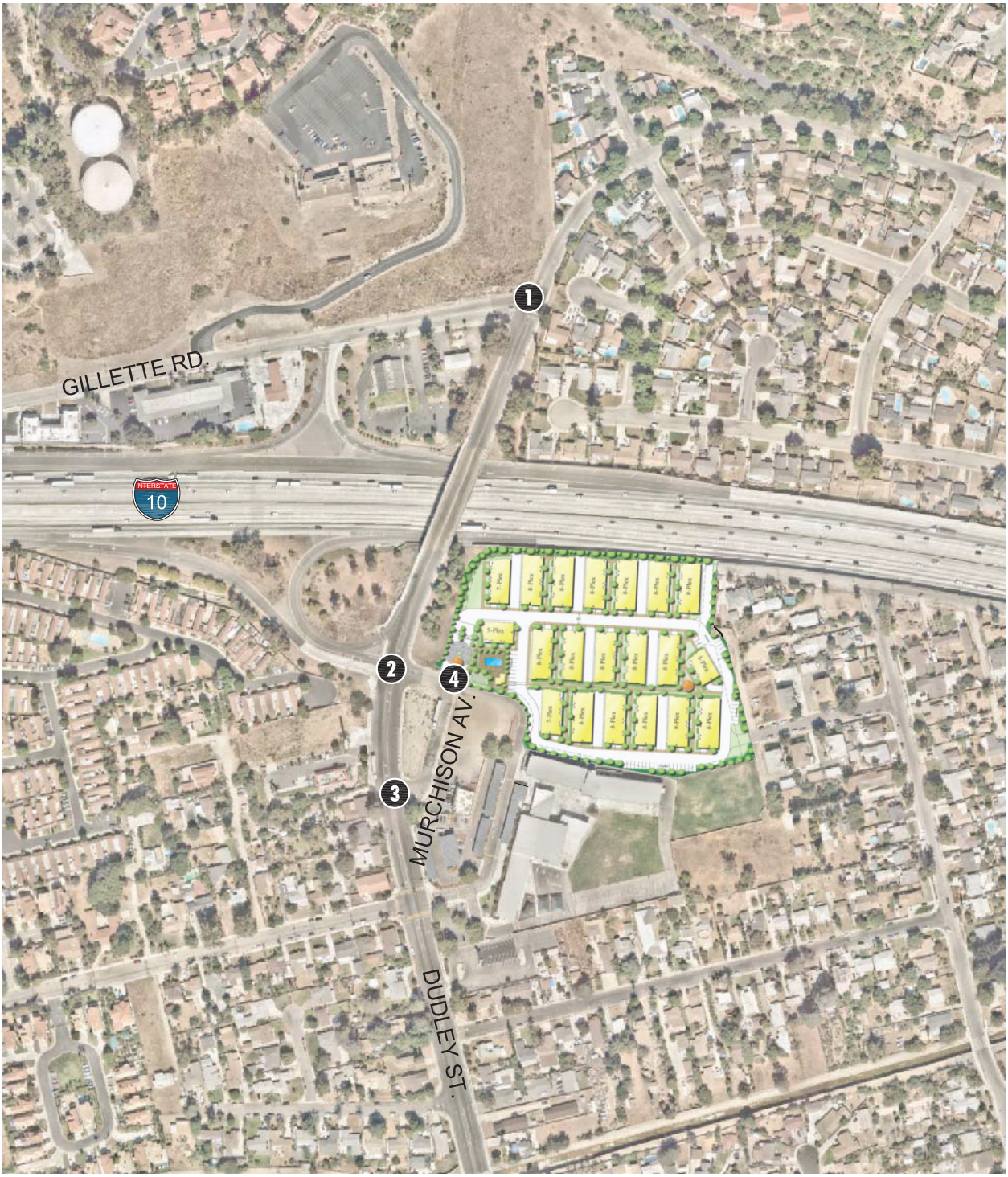
[1] AC = Acres; DU = Dwelling Units; TSF = Thousand Square Feet

EXHIBIT 1: PRELIMINARY SITE PLAN



URBAN CROSSROADS

EXHIBIT 2: LOCATION MAP



LEGEND:

0 = INTERSECTION ANALYSIS LOCATION

N

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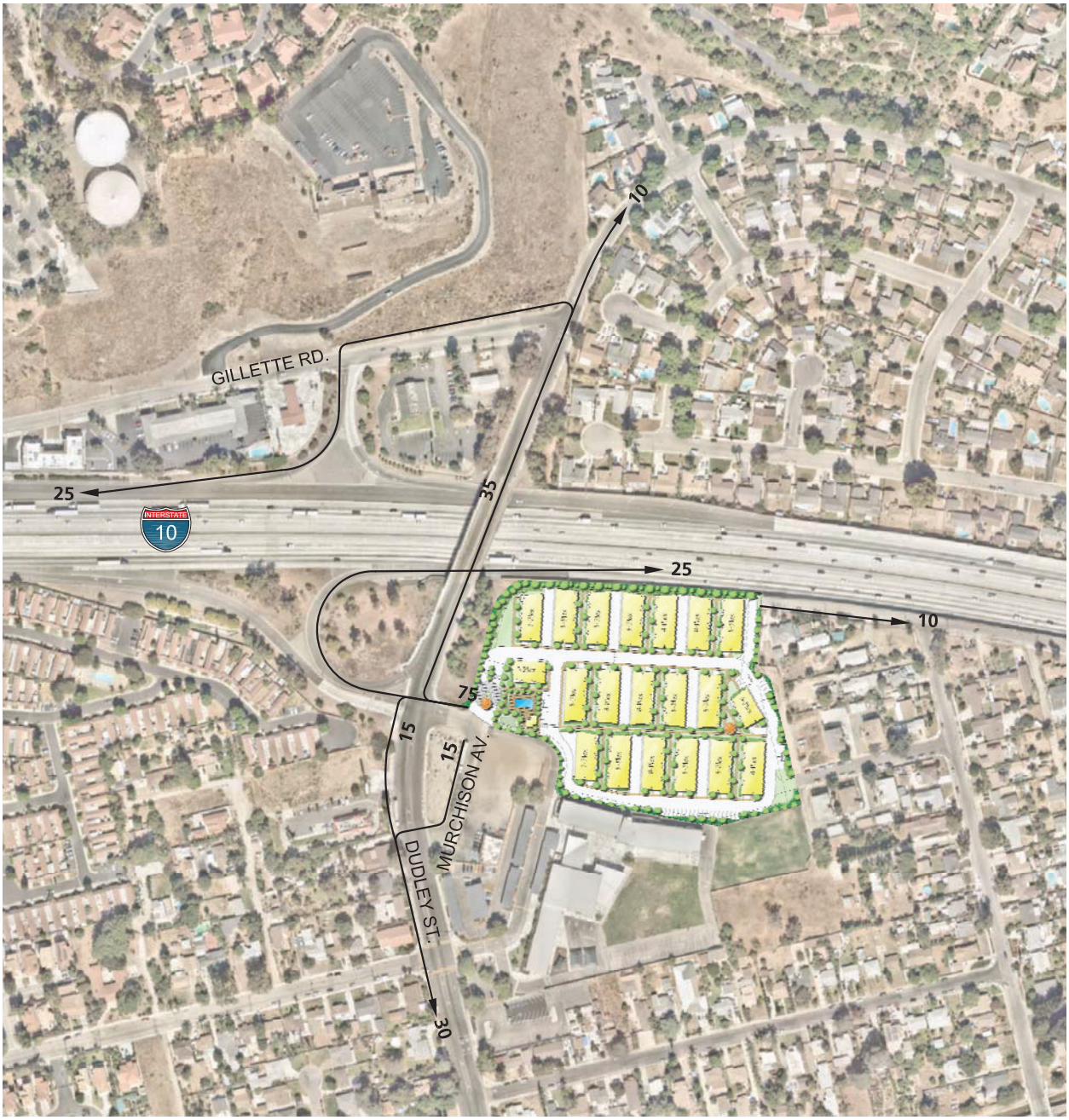
URBAN CROSSROADS

EXHIBIT 3: PROJECT TRIP DISTRIBUTION

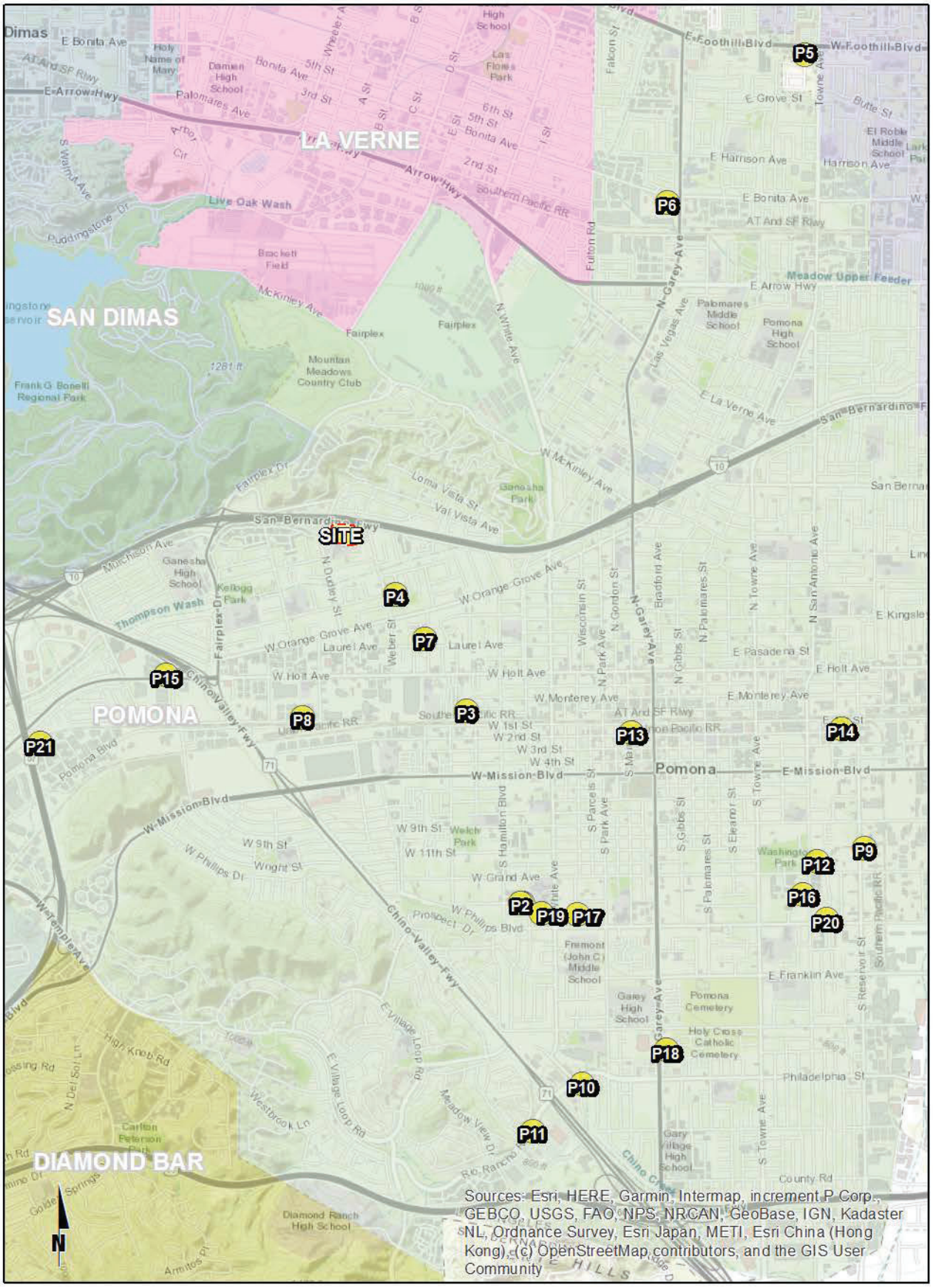


LEGEND:

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 4: CUMULATIVE DEVELOPMENT LOCATION MAP



ATTACHMENT A:

CITY OF POMONA PUBLIC WORKS DEPARTMENT SCOPING AGREEMENT COMMENTS
NOVEMBER 12, 2019

Exhibit B

TRAFFIC IMPACT STUDY SCOPE
CITY OF POMONA

Project Name:	1440 Murchison Avenue
Project Address:	1440 Murchison Avenue
Project Description:	The Project is to consist of 152 multifamily residential dwelling units

	Consultant	Developer
Name:	Pranesh Tarikere Urban Crossroads, Inc.	Matt Maehara MLC Holdings, Inc.
Address:	260 E. Baker Street, Suite 200 Costa Mesa, CA 92626	5 Peters Canyon Road Suite 310 Irvine, CA 92606
Telephone: E-mail:	(949) 336-5992 ptarikere@urbanxroads.com	(949) 372-3310 matt.maehara@meritagehomes.com

A. Trip Generation

Existing Land Use	General Commercial
Existing Zoning	C-4 Highway Commercial

	In
AM Peak Hour	14
PM Peak Hour	40

City of Pomona
Public Works – Engineering

☐ ~~Accepted~~ ☐ Fees Due $_____

☐ ~~Accepted as Noted~~

☒ Revise and Resubmit

By: _____

MUST RETURN ORIGINAL RED MARKS WITH NEXT SUBMITTAL

B. Trip Distribution
Attach graphical representation

C. Background Traffic

Project Opening year:	2022	Growth Rate:	2% per year

D. Study Intersections

1) Dudley St. & Gillette Rd.
2) Dudley St. & I-10 EB Ramps/Murchison Av.
3) Project Driveway/Murchison Av.
4) Dudley & Murchison (south of Study Intersection #2)

E. Specific issues to be addressed in the Study

Traffic signal warrant analysis — For all 4 study intersections
Site access evaluation — School pedestrians improvements at/near Study int #3. Many students walk from school to 7-11 or dirt lot to get picked up.

Approved By:

City of Pomona Traffic Engineering:	
Date:	

260 E. Baker St. | Suite 200 | Costa Mesa, CA 92626 | (949) 660-1994
urbanxroads.com

November 1, 2019

Mr. Ron Chan
City of Pomona
505 South Garey Avenue
Pomona CA 91769

SUBJECT: 1440 MURCHISON AVENUE TRAFFIC IMPACT ANALYSIS – SCOPING AGREEMENT

Dear Mr. Ron Chan:

Urban Crossroads, Inc. is pleased to submit this scoping agreement to City of Pomona for the 1440 Murchison Avenue ("Project"), which is located at 1440 Murchison Avenue, in the City of Pomona. It is our understanding that the Project is to consist of 152 multifamily residential dwelling units.

This agreement describes the proposed analysis methodology, trip generation, trip distribution, and traffic assignment/project trips on the surrounding roadway network, which have been used to establish the proposed project study area and analysis locations. This traffic study scope of work has been prepared based on the City of Pomona Public Works Department Traffic Impact Study Guidelines (February 2012).

ANALYSIS SCENARIOS

The analysis of peak hour operations at study area intersections will be provided for the following six (6) analysis scenarios:

1. Existing (2019)
2. Existing plus Project
3. Opening Year Cumulative (2022) Without Project
4. Opening Year Cumulative (2022) With Project
5. Horizon Year (2040) Without Project
6. Horizon Year (2040) With Project

STUDY AREA

The preliminary site plan is shown on Exhibit 1. As indicated on Exhibit 2, the location map, the proposed development is located at 1440 Murchison Avenue. Exhibit 2 also illustrates the proposed intersection analysis locations.

The study area inter[illegible]h [illegible]M during a typical weekday.

Be sure PUSD, CalPoly, and Western U are all in session when counts are collected.

Include mid-day counts (to capture traffic when school is out). Mid-day hours may vary depending on which day the counts are scheduled.

ANALYSIS METHDOLOGY

The City of Pomona requires the Highway Capacity Manual (HCM) 6th Edition methodology be utilized for assessing both signalized and unsignalized/stop controlled intersections.

Signalized Intersections – Signalized intersection operations analysis will be based on the methodology described in the *Highway Capacity Manual* (6th Edition). Intersection LOS operations are based on an intersection's average control delay.

Caltrans requires signalized intersection operations analysis based on the methodology described in the HCM 6th Edition. LOS is directly related to the average control delay per vehicle and is correlated to a LOS designation. As such, signalized intersections under the jurisdiction of Caltrans will be analyzed using the HCM 6th Edition methodology.

Unsignalized Intersections – The operations of unsignalized intersections will be evaluated using the methodology described in the HCM 6th Edition. The LOS rating is based on the weighted average control delay expressed in seconds per vehicle. At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. For all-way stop controlled intersections, LOS is computed for the intersection as a whole. Urban segments (i.e., segments on roadways that are generally signalized) do not typically require segment analysis. Segment requirements can normally be determined by the analysis of lane requirements at intersections.

The following assumptions are to be used in the analysis:

- Optimized signal timing
- Two (2) second lost time/phase
- 1800 vphgpl for exclusive through and right turn lanes
- 1700 vphgpl for exclusive left turn lanes
- 1600 vphgpl for exclusive dual left turn lanes

TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development.

The trip generation rates used are based upon information collected by the Institute of Transportation Engineers (ITE) as provided in their Trip Generation manual, 10th Edition, 2017. ITE land use code 221 (Multifamily Housing – Mid-Rise) has been used to derive site specific trip generation estimates.

A summary of the Project's trip generation is shown on Table 1. The Project is anticipated to generate a net total of approximately 828 trip-ends per day with 54 AM peak hour trips and 67 PM peak hour trips.

TRIP DISTRIBUTION

Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned lane use and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The Project trip distribution was developed based on anticipated travel patterns to and from the Project site. The Project's trip distribution pattern is shown on Exhibit 3.

INTERSECTION ANALYSIS LOCATIONS

The traffic impact study area was defined in conformance with the requirements of the City of Pomona's TIA guidelines. Based on these guidelines, the minimum area to be studied shall include all arterial monitoring intersections, including monitored freeway on- or off-ramp intersections, where the proposed project will add 50 or more trips during either the AM or PM weekday peak hours (of adjacent street traffic).

Two study area intersection locations shown on Exhibit 2 were selected for analysis based on the City of Pomona's traffic study requirements that require analysis of intersection locations in which a proposed Project is anticipated to contribute 50 or more peak-hour trips.

THRESHOLDS OF SIGNIFICANCE

To determine whether the addition of Project traffic at a study intersection results in a significant impact, the following thresholds of significance consistent with City of Pomona TIA Guidelines will be utilized:

Signalized Intersections

- Any study intersection that is operating at a LOS A, B, C, or D for any study scenario without Project traffic in which the addition of Project traffic causes the intersection to degrade to a LOS E or F shall mitigate that impact so as to bring the intersection back to at least LOS D.
- Any study intersection that is operating at LOS E or LOS F for any study scenario without Project traffic shall mitigate any impacts so as to bring the intersection back to the overall level of delay established prior to Project traffic being added.

Unsignalized Intersections

- An impact is considered significant if the study determines that either section a) or both sections b) and c) occur.
  a) The addition of Project related traffic causes the intersection to move from a LOS D or better to a LOS E or worse.
  b) The Project contributes additional traffic to an intersection that is already projected to operate at an LOS E or F with background traffic.
  c) One or both of the following conditions are met:
     1) The Project adds 10 or more trips to any approach
     2) The intersection meets the peak hour traffic signal warrant after the addition of Project traffic.

The LOS criteria and thresholds of significance for study area intersections outside City of Pomona will be based on applicable jurisdiction's guidelines, where available, or Los Angeles County CMP guidelines.

EXISTING COUNT DATA

Intersection turning mo at th r weekday AM (6:30-9:30 M) pe

Be sure PUSD, CalPoly, and Western U are all in session when counts are collected.

Include mid-day counts (to capture traffic when school is out). Mid-day hours may vary depending on which day the counts are scheduled.

SPECIAL ISSUES

The following special issues will also be addressed as part of the TIA:

- *Site Access Evaluation:* The turn pocket lengths will be determined through peak hour traffic simulations developed in an effo at each Project driveway. Recommend ures to accommodate both peak hour tr study.

School pedestrians improvements at/near Study int #3. Many students walk from school to 7-11 or dirt lot to get picked up.

OPEN ITEMS – CUMULATIVE DEVELOPMENTS PROJECTS

Exhibit 4 illustrates a cumulative development location map. A land use summary of the cumulative development projects are shown on Table 2. We request the City staff review the list and/or provide any additional cumulative development projects for inclusion in the traffic study, and associated mitigation measures where appropriate for recently approved, but not yet constructed development. The City of Sam Dimas and the City of La Verne will also be contacted to obtain cumulative development projects in their respective jurisdictions.

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Pranesh Tarikere, PE
Senior Engineer

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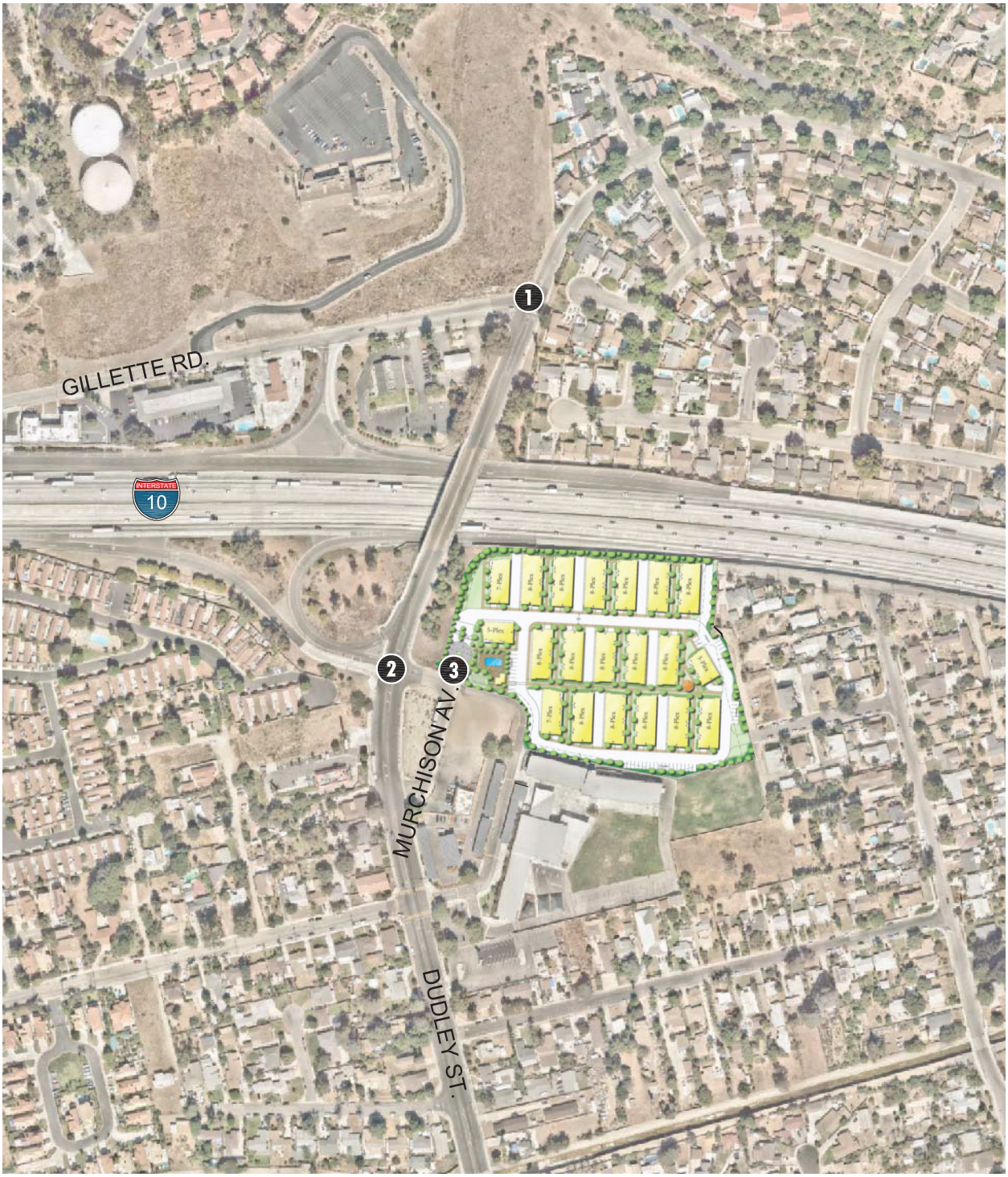
EXHIBIT 2: LOCATION MAP



LEGEND:

0 = INTERSECTION ANALYSIS LOCATION

N

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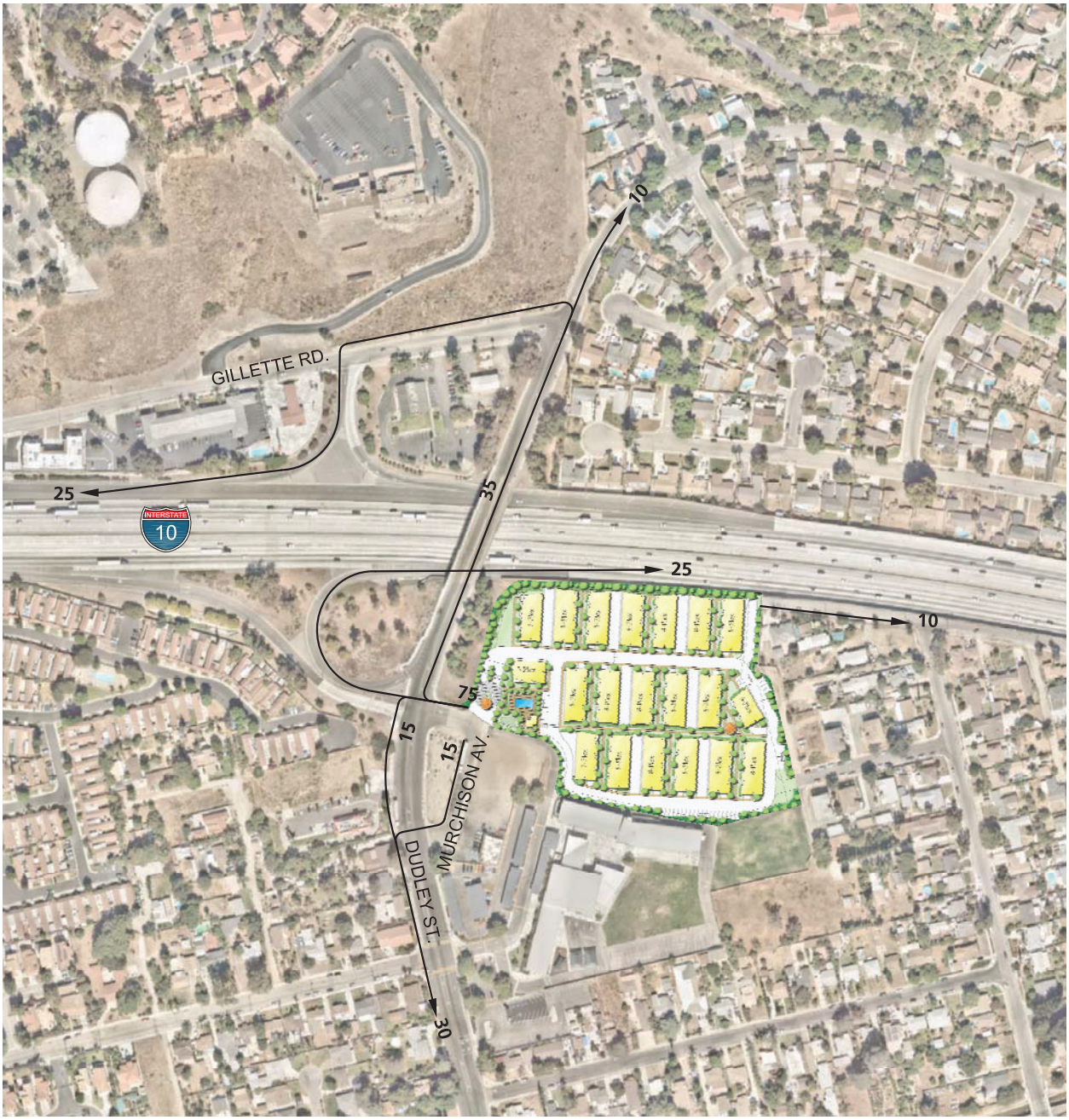
URBAN CROSSROADS

EXHIBIT 3: PROJECT TRIP DISTRIBUTION



LEGEND:

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N

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URBAN CROSSROADS

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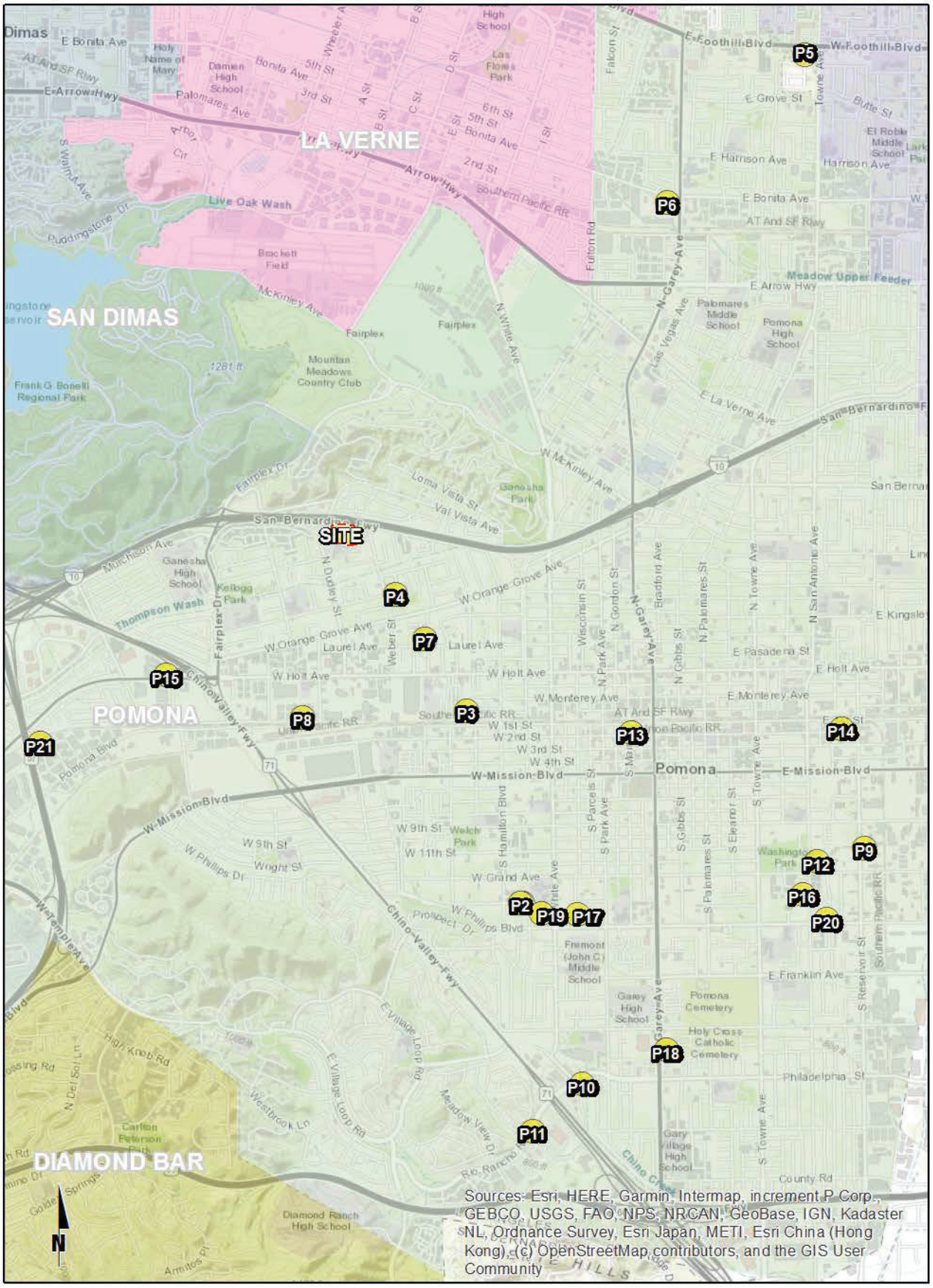

Table 1

Proposed Project Trip Generation Summary

Land Use	Units[1]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Trip Generation Rates[2]									
Multifamily Housing (Mid-Rise)	DU	221	0.09	0.27	0.36	0.27	0.17	0.44	5.44

Project	Quantity	Units	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Proposed Project Trip Generation Summary									
Multifamily Housing (Mid-Rise)	152	DU	14	40	54	41	26	67	828

[1] DU = Dwelling Units

[2] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

Table 2

Cumulative Development Land Use Summary

TAZ	Project	Land Use	Quantity	Units[1]
City of Pomona				
P1	1028 & 1026 W. Fernleaf Ave (CUP 3967-2016)	Residential	2	DU
P2	1036 & 1038 W. Fernleaf Ave (CUP 4280-2016)	Residential	2	DU
P3	203 N. Myrtle Ave. (DPR 6535-2016)	Residential	35	DU
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P18	1982 S. Garey Ave. (DPR 5181-2016)	Residential	20	DU
P19	1427 S. White Ave. (CUP 4843-2016)	Residential	15	DU
P20	1061 E. Phillips Blvd. (CUP 4831-2016)	Residential	6	DU
P21	105 Mercury Circle (CUP 6213-2016)	Commercial	12.000	TSF

[1] AC = Acres; DU = Dwelling Units; TSF = Thousand Square Feet

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APPENDIX 1.2:

HORIZON YEAR (2040) CONDITIONS QUEUEING ANALYSIS

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Intersection: 2: Dudley St. & I-10 EB Ramps/Murchison Av.

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	R	LT	R	L	L
Maximum Queue (ft)	71	96	69	45	68	26
Average Queue (ft)	23	48	57	23	28	2
95th Queue (ft)	50	75	78	40	57	12
Link Distance (ft)	945	945	54	54		
Upstream Blk Time (%)			15	0		
Queuing Penalty (veh)			20	0		
Storage Bay Dist (ft)					60	80
Storage Blk Time (%)					0	
Queuing Penalty (veh)					1	

Intersection: 4: Murchison Av. & Driveway

Movement	WB	WB	NB
Directions Served	L	T	L
Maximum Queue (ft)	50	142	48
Average Queue (ft)	28	57	3
95th Queue (ft)	46	100	20
Link Distance (ft)	562	562	268
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 22

Intersection: 2: Dudley St. & I-10 EB Ramps/Murchison Av.

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	LT	R	LT	R	L	T	L
Maximum Queue (ft)	87	77	68	22	72	22	26
Average Queue (ft)	35	40	26	9	26	1	1
95th Queue (ft)	65	65	53	26	58	10	9
Link Distance (ft)	945	945	54	54		242	
Upstream Blk Time (%)			1				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)					60		80
Storage Blk Time (%)					0		
Queuing Penalty (veh)					1		

Intersection: 4: Murchison Av. & Driveway

Movement	WB
Directions Served	T
Maximum Queue (ft)	56
Average Queue (ft)	30
95th Queue (ft)	47
Link Distance (ft)	562
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 1

Intersection: 2: Dudley St. & I-10 EB Ramps/Murchison Av.

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	LT	R	LT	R	L	T	T
Maximum Queue (ft)	118	75	69	45	49	48	20
Average Queue (ft)	47	42	46	13	25	3	1
95th Queue (ft)	93	65	73	35	45	19	7
Link Distance (ft)	945	945	54	54		242	875
Upstream Blk Time (%)			7	0			
Queuing Penalty (veh)			5	0			
Storage Bay Dist (ft)					60		
Storage Blk Time (%)					0	0	
Queuing Penalty (veh)					0	0	

Intersection: 4: Murchison Av. & Driveway

Movement	WB	WB
Directions Served	L	T
Maximum Queue (ft)	32	74
Average Queue (ft)	3	38
95th Queue (ft)	19	57
Link Distance (ft)	562	562
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 5

Intersection: 2: Dudley St. & I-10 EB Ramps/Murchison Av.

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	R	LT	R	L	L
Maximum Queue (ft)	52	74	71	46	54	25
Average Queue (ft)	28	44	56	23	22	2
95th Queue (ft)	48	68	82	42	52	15
Link Distance (ft)	945	945	61	61		
Upstream Blk Time (%)			13	0		
Queuing Penalty (veh)			20	0		
Storage Bay Dist (ft)					60	80
Storage Blk Time (%)					0	
Queuing Penalty (veh)					1	

Intersection: 4: Murchison Av. & Driveway & Project Driveway

Movement	WB	WB	NB	SB
Directions Served	L	TR	LT	TR
Maximum Queue (ft)	54	250	23	51
Average Queue (ft)	27	67	7	19
95th Queue (ft)	47	153	24	45
Link Distance (ft)	554	554	260	250
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 20

Intersection: 2: Dudley St. & I-10 EB Ramps/Murchison Av.

Movement	EB	EB	WB	WB	NB	NB
Directions Served	LT	R	LT	R	L	T
Maximum Queue (ft)	102	136	69	60	75	28
Average Queue (ft)	40	41	33	18	30	1
95th Queue (ft)	79	80	61	38	62	9
Link Distance (ft)	945	945	61	61		243
Upstream Blk Time (%)			1	0		
Queuing Penalty (veh)			0	0		
Storage Bay Dist (ft)					60	
Storage Blk Time (%)					1	
Queuing Penalty (veh)					1	

Intersection: 4: Murchison Av. & Driveway & Project Driveway

Movement	WB	NB	SB
Directions Served	TR	LT	TR
Maximum Queue (ft)	68	23	29
Average Queue (ft)	33	7	15
95th Queue (ft)	52	23	38
Link Distance (ft)	554	260	250
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 2

Intersection: 2: Dudley St. & I-10 EB Ramps/Murchison Av.

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	LT	R	LT	R	L	T	L
Maximum Queue (ft)	117	89	69	43	66	47	26
Average Queue (ft)	48	45	48	21	32	3	6
95th Queue (ft)	91	70	73	34	58	18	23
Link Distance (ft)	945	945	61	61		243	
Upstream Blk Time (%)			7	0			
Queuing Penalty (veh)			6	0			
Storage Bay Dist (ft)					60		80
Storage Blk Time (%)					0	0	
Queuing Penalty (veh)					1	0	

Intersection: 4: Murchison Av. & Driveway & Project Driveway

Movement	WB	WB	NB	SB
Directions Served	L	TR	LT	TR
Maximum Queue (ft)	30	111	23	29
Average Queue (ft)	9	41	6	10
95th Queue (ft)	30	72	22	33
Link Distance (ft)	554	554	260	250
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 7

Intersection: 2: Dudley St. & I-10 EB Ramps/Murchison Av.

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	T	R	L	T
Maximum Queue (ft)	53	69	74	47	89	209	25	26	83
Average Queue (ft)	25	35	50	29	63	75	2	8	42
95th Queue (ft)	50	54	73	46	100	133	14	27	70
Link Distance (ft)	945	945	61	61		243	243		873
Upstream Blk Time (%)			2	0					
Queuing Penalty (veh)			4	0					
Storage Bay Dist (ft)					60			80	
Storage Blk Time (%)					4	10			0
Queuing Penalty (veh)					11	18			0

Intersection: 4: Murchison Av. & Driveway & Project Driveway

Movement	WB	WB	NB	SB
Directions Served	L	TR	LT	TR
Maximum Queue (ft)	54	79	23	76
Average Queue (ft)	24	54	6	22
95th Queue (ft)	48	79	23	52
Link Distance (ft)	554	554	260	250
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 34

Intersection: 2: Dudley St. & I-10 EB Ramps/Murchison Av.

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	T	R	L	T
Maximum Queue (ft)	53	53	49	60	82	77	26	26	106
Average Queue (ft)	30	32	24	17	45	46	2	8	43
95th Queue (ft)	40	45	44	40	71	70	15	28	81
Link Distance (ft)	945	945	61	61		243	243		873
Upstream Blk Time (%)			0	0					
Queuing Penalty (veh)			0	0					
Storage Bay Dist (ft)					60			80	
Storage Blk Time (%)					2	2			1
Queuing Penalty (veh)					4	4			1

Intersection: 4: Murchison Av. & Driveway & Project Driveway

Movement	WB	WB	NB	SB
Directions Served	L	TR	LT	TR
Maximum Queue (ft)	30	68	23	52
Average Queue (ft)	1	30	7	17
95th Queue (ft)	10	51	23	44
Link Distance (ft)	554	554	260	250
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 9

Intersection: 2: Dudley St. & I-10 EB Ramps/Murchison Av.

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	T	R	L	T
Maximum Queue (ft)	76	97	69	64	89	136	26	26	122
Average Queue (ft)	34	38	35	21	60	60	6	13	45
95th Queue (ft)	56	65	62	46	96	103	24	34	86
Link Distance (ft)	945	945	61	61		243	243		873
Upstream Blk Time (%)			1	0					
Queuing Penalty (veh)			1	0					
Storage Bay Dist (ft)					60			80	
Storage Blk Time (%)					3	6			3
Queuing Penalty (veh)					9	11			2

Intersection: 4: Murchison Av. & Driveway & Project Driveway

Movement	WB	WB	NB	SB
Directions Served	L	TR	LT	TR
Maximum Queue (ft)	30	72	23	28
Average Queue (ft)	16	39	10	18
95th Queue (ft)	40	59	28	40
Link Distance (ft)	554	554	260	250
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 23

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APPENDIX 3.1:

EXISTING TRAFFIC COUNTS – NOVEMBER 2019

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Counts Unlimited
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(951) 268-6268

City of Pomona
N/S: Dudley Street
E/W: Gillette Road
Weather: Clear

File Name : 01_POM_Dudley_Gillette AM
Site Code : 05119790
Start Date : 11/14/2019
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
06:30 AM	11	23	34	56	5	61	3	29	32	127
06:45 AM	15	25	40	42	5	47	7	34	41	128
Total	26	48	74	98	10	108	10	63	73	255
07:00 AM	13	34	47	40	7	47	1	24	25	119
07:15 AM	13	24	37	52	7	59	5	29	34	130
07:30 AM	17	30	47	62	25	87	4	48	52	186
07:45 AM	33	34	67	67	25	92	3	61	64	223
Total	76	122	198	221	64	285	13	162	175	658
08:00 AM	17	22	39	62	21	83	7	27	34	156
08:15 AM	11	15	26	48	24	72	4	19	23	121
08:30 AM	6	14	20	47	18	65	3	18	21	106
08:45 AM	8	14	22	29	13	42	0	31	31	95
Total	42	65	107	186	76	262	14	95	109	478
09:00 AM	9	13	22	23	8	31	4	23	27	80
09:15 AM	8	19	27	29	5	34	6	34	40	101
Grand Total	161	267	428	557	163	720	47	377	424	1572
Apprch %	37.6	62.4		77.4	22.6		11.1	88.9		
Total %	10.2	17	27.2	35.4	10.4	45.8	3	24	27	
Passenger Vehicles	160	262	422	537	158	695	47	359	406	1523
% Passenger Vehicles	99.4	98.1	98.6	96.4	96.9	96.5	100	95.2	95.8	96.9
Large 2 Axle Vehicles	1	5	6	10	5	15	0	8	8	29
% Large 2 Axle Vehicles	0.6	1.9	1.4	1.8	3.1	2.1	0	2.1	1.9	1.8
3 Axle Vehicles	0	0	0	1	0	1	0	2	2	3
% 3 Axle Vehicles	0	0	0	0.2	0	0.1	0	0.5	0.5	0.2
4+ Axle Trucks	0	0	0	9	0	9	0	8	8	17
% 4+ Axle Trucks	0	0	0	1.6	0	1.2	0	2.1	1.9	1.1

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	13	24	37	52	7	59	5	29	34	130
07:30 AM	17	30	47	62	**25**	87	4	48	52	186
07:45 AM	**33**	**34**	**67**	**67**	25	**92**	3	**61**	**64**	**223**
08:00 AM	17	22	39	62	21	83	**7**	27	34	156
Total Volume	80	110	190	243	78	321	19	165	184	695
% App. Total	42.1	57.9		75.7	24.3		10.3	89.7		
PHF	.606	.809	.709	.907	.780	.872	.679	.676	.719	.779

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File Name : 01_POM_Dudley_Gillette AM
Site Code : 05119790
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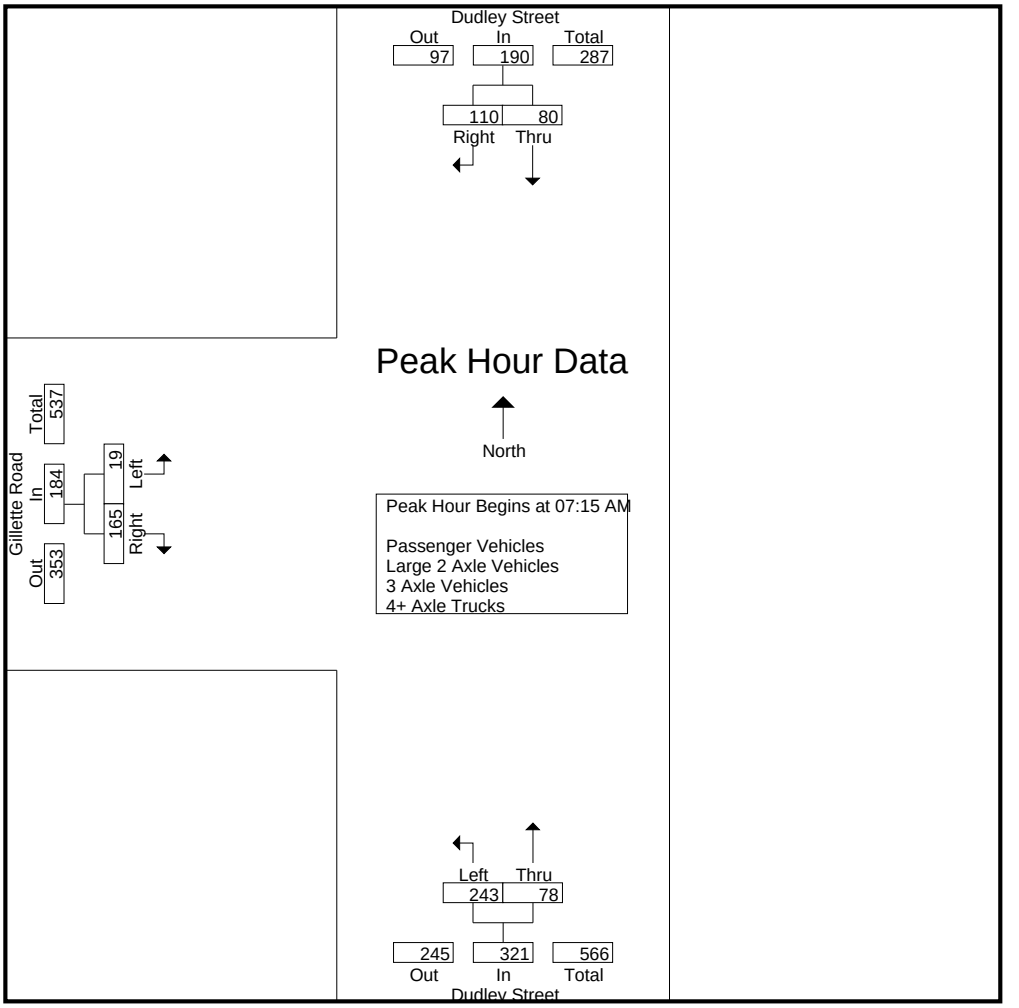

Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:30 AM			07:15 AM		
+0 mins.	13	**34**	47	62	**25**	87	5	29	34
+15 mins.	13	24	37	**67**	25	**92**	4	48	52
+30 mins.	17	30	47	62	21	83	3	**61**	**64**
+45 mins.	**33**	34	**67**	48	24	72	**7**	27	34
Total Volume	76	122	198	239	95	334	19	165	184
% App. Total	38.4	61.6		71.6	28.4		10.3	89.7	
PHF	.576	.897	.739	.892	.950	.908	.679	.676	.719

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City of Pomona
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Site Code : 05119790
Start Date : 11/14/2019
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Groups Printed- Passenger Vehicles

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
06:30 AM	11	23	34	55	5	60	3	29	32	126
06:45 AM	14	24	38	38	5	43	7	30	37	118
Total	25	47	72	93	10	103	10	59	69	244
07:00 AM	13	33	46	38	7	45	1	22	23	114
07:15 AM	13	24	37	51	7	58	5	28	33	128
07:30 AM	17	30	47	61	24	85	4	48	52	184
07:45 AM	33	34	67	64	25	89	3	60	63	219
Total	76	121	197	214	63	277	13	158	171	645
08:00 AM	17	22	39	62	20	82	7	27	34	155
08:15 AM	11	14	25	45	24	69	4	17	21	115
08:30 AM	6	13	19	47	15	62	3	16	19	100
08:45 AM	8	13	21	28	13	41	0	27	27	89
Total	42	62	104	182	72	254	14	87	101	459
09:00 AM	9	13	22	21	8	29	4	21	25	76
09:15 AM	8	19	27	27	5	32	6	34	40	99
Grand Total	160	262	422	537	158	695	47	359	406	1523
Apprch %	37.9	62.1		77.3	22.7		11.6	88.4		
Total %	10.5	17.2	27.7	35.3	10.4	45.6	3.1	23.6	26.7	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	13	24	37	51	7	58	5	28	33	128
07:30 AM	17	30	47	61	24	85	4	48	52	184
07:45 AM	**33**	**34**	**67**	**64**	**25**	**89**	3	**60**	**63**	**219**
08:00 AM	17	22	39	62	20	82	**7**	27	34	155
Total Volume	80	110	190	238	76	314	19	163	182	686
% App. Total	42.1	57.9		75.8	24.2		10.4	89.6		
PHF	.606	.809	.709	.930	.760	.882	.679	.679	.722	.783

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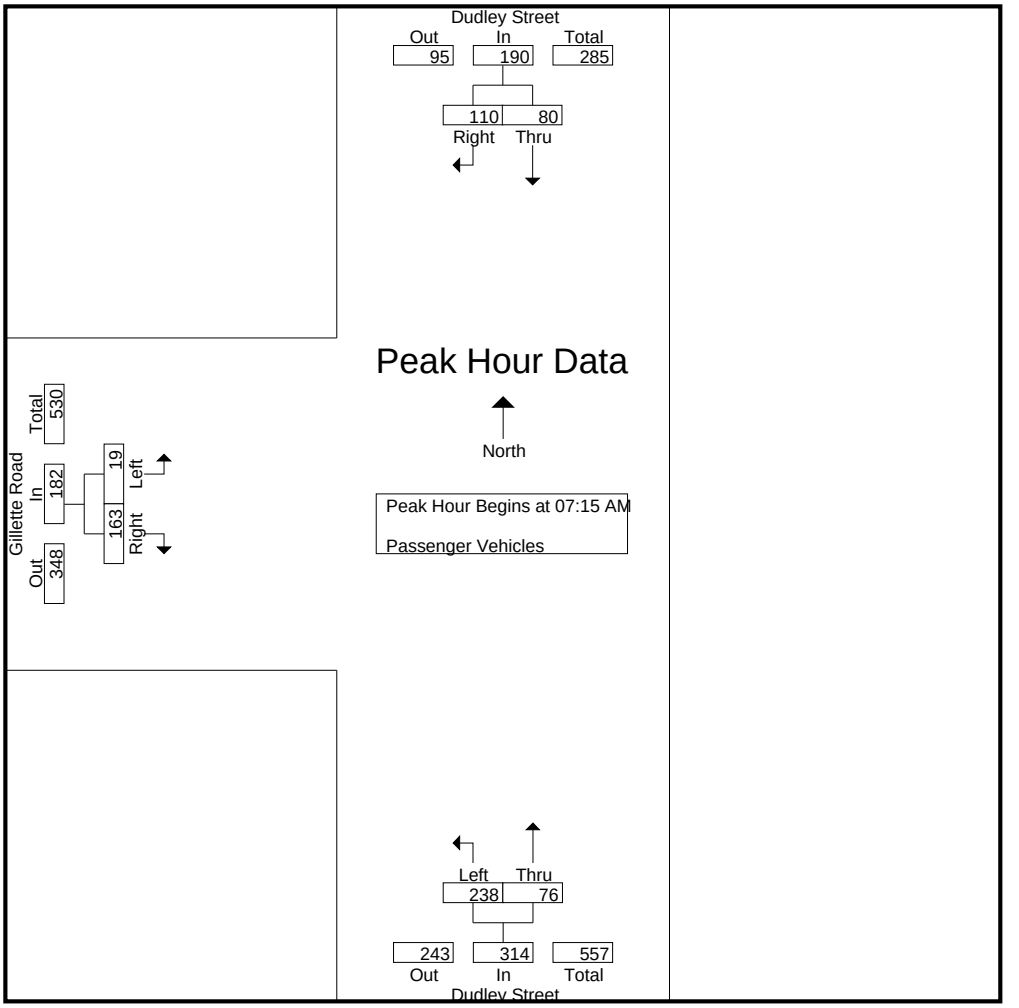

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	13	24	37	51	7	58	5	28	33
+15 mins.	17	30	47	61	24	85	4	48	52
+30 mins.	**33**	**34**	**67**	**64**	**25**	**89**	3	**60**	**63**
+45 mins.	17	22	39	62	20	82	**7**	27	34
Total Volume	80	110	190	238	76	314	19	163	182
% App. Total	42.1	57.9		75.8	24.2		10.4	89.6	
PHF	.606	.809	.709	.930	.760	.882	.679	.679	.722

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Groups Printed- Large 2 Axle Vehicles

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
06:30 AM	0	0	0	0	0	0	0	0	0	0
06:45 AM	1	1	2	2	0	2	0	3	3	7
Total	1	1	2	2	0	2	0	3	3	7
07:00 AM	0	1	1	1	0	1	0	2	2	4
07:15 AM	0	0	0	1	0	1	0	0	0	1
07:30 AM	0	0	0	1	1	2	0	0	0	2
07:45 AM	0	0	0	3	0	3	0	0	0	3
Total	0	1	1	6	1	7	0	2	2	10
08:00 AM	0	0	0	0	1	1	0	0	0	1
08:15 AM	0	1	1	0	0	0	0	1	1	2
08:30 AM	0	1	1	0	3	3	0	1	1	5
08:45 AM	0	1	1	1	0	1	0	1	1	3
Total	0	3	3	1	4	5	0	3	3	11
09:00 AM	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	1	0	1	0	0	0	1
Grand Total	1	5	6	10	5	15	0	8	8	29
Apprch %	16.7	83.3		66.7	33.3		0	100		
Total %	3.4	17.2	20.7	34.5	17.2	51.7	0	27.6	27.6	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	1	0	1	0	0	0	1
07:30 AM	0	0	0	1	**1**	2	0	0	0	2
07:45 AM	0	0	0	**3**	0	**3**	0	0	0	**3**
08:00 AM	0	0	0	0	1	1	0	0	0	1
Total Volume	0	0	0	5	2	7	0	0	0	7
% App. Total	0	0		71.4	28.6		0	0		
PHF	.000	.000	.000	.417	.500	.583	.000	.000	.000	.583

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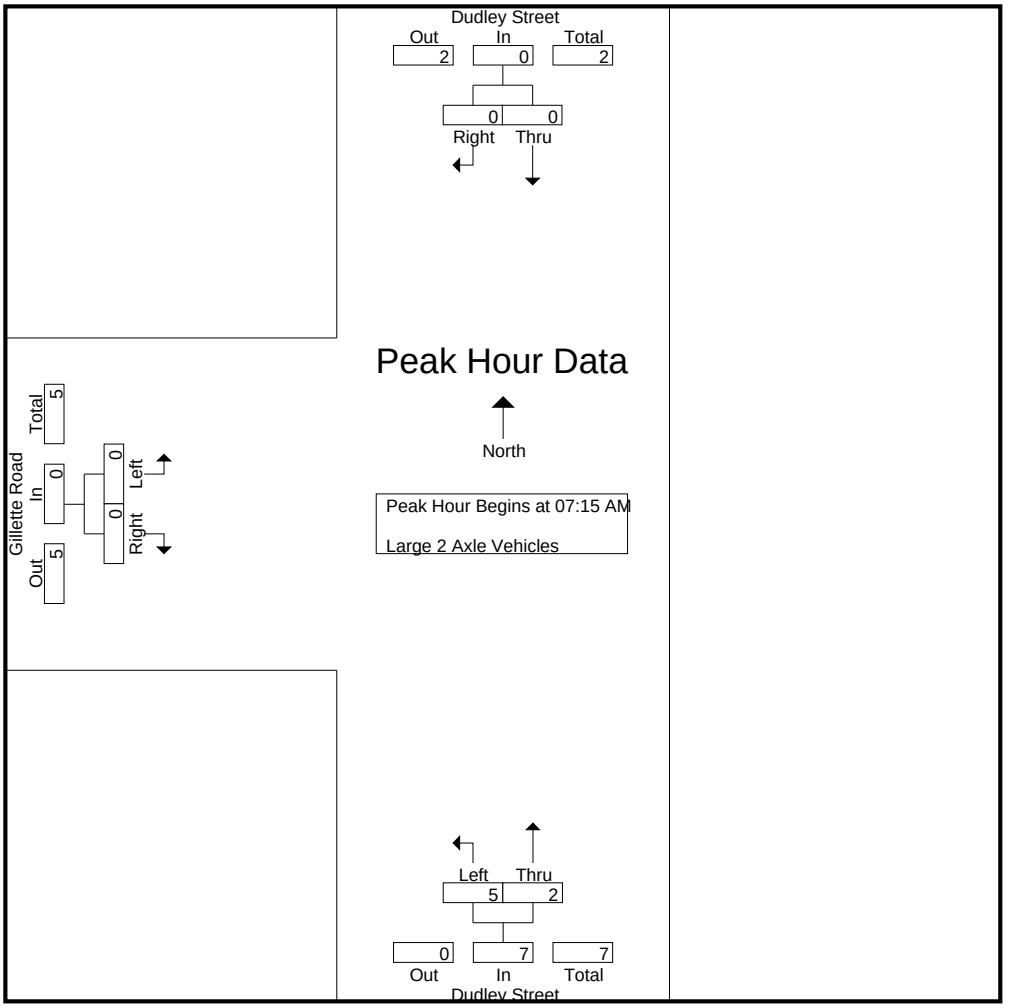

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	0	0	1	0	1	0	0	0
+15 mins.	0	0	0	1	**1**	2	0	0	0
+30 mins.	0	0	0	**3**	0	**3**	0	0	0
+45 mins.	0	0	0	0	1	1	0	0	0
Total Volume	0	0	0	5	2	7	0	0	0
% App. Total	0	0		71.4	28.6		0	0	
PHF	.000	.000	.000	.417	.500	.583	.000	.000	.000

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Weather: Clear

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Groups Printed- 3 Axle Vehicles

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
06:30 AM	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	1	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	1	1
09:00 AM	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	1	0	1	0	0	0	1
Grand Total	0	0	0	1	0	1	0	2	2	3
Apprch %	0	0		100	0		0	100		
Total %	0	0	0	33.3	0	33.3	0	66.7	66.7	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	0	0	0	0	**1**	**1**	**1**
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

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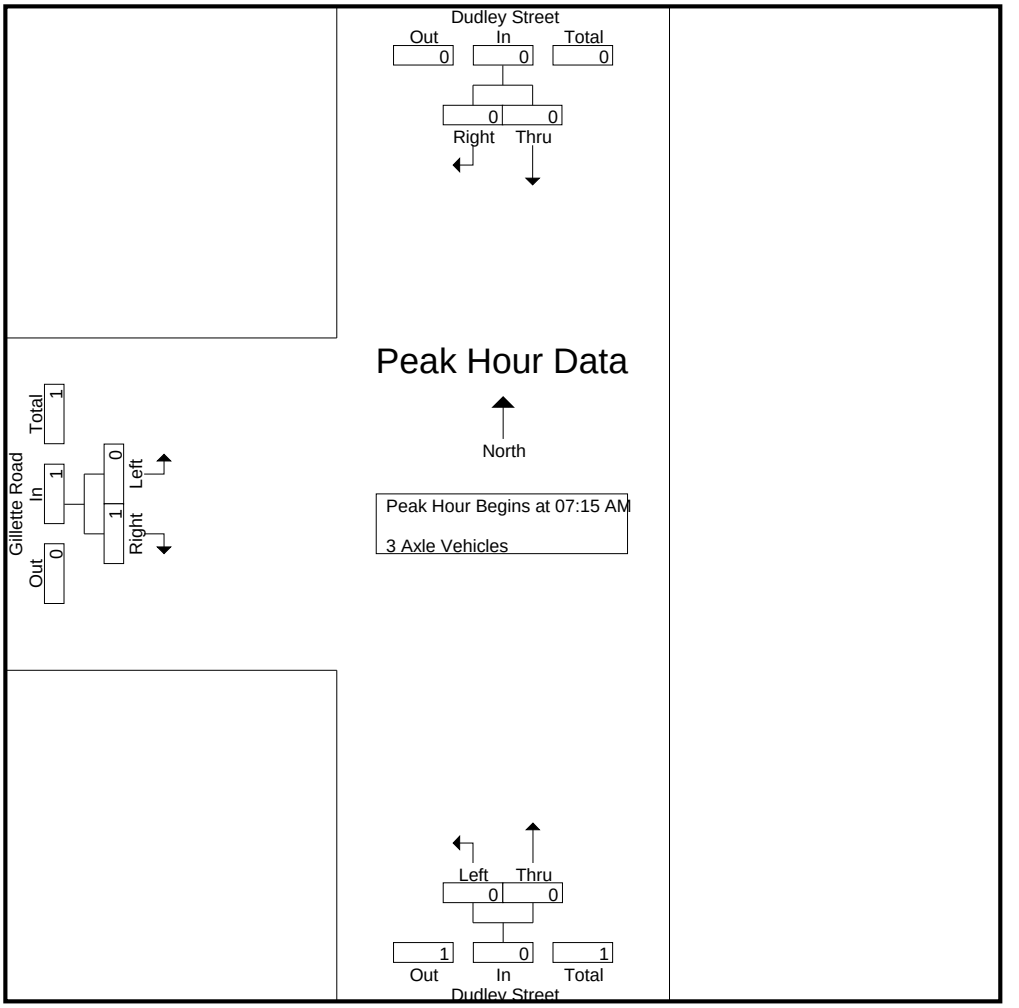

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	0	0	0	0	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	1
% App. Total	0	0		0	0		0	100	
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250

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City of Pomona
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Weather: Clear

File Name : 01_POM_Dudley_Gillette AM
Site Code : 05119790
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Groups Printed- 4+ Axle Trucks

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
06:30 AM	0	0	0	1	0	1	0	0	0	1
06:45 AM	0	0	0	2	0	2	0	1	1	3
Total	0	0	0	3	0	3	0	1	1	4
07:00 AM	0	0	0	1	0	1	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	1	0	1	0	1	1	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	3	0	3	0	1	1	4
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	3	3	3
Total	0	0	0	3	0	3	0	4	4	7
09:00 AM	0	0	0	2	0	2	0	2	2	4
09:15 AM	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	9	0	9	0	8	8	17
Apprch %	0	0		100	0		0	100		
Total %	0	0	0	52.9	0	52.9	0	47.1	47.1	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	**1**	**1**	**1**
08:00 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

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Weather: Clear

File Name : 01_POM_Dudley_Gillette AM
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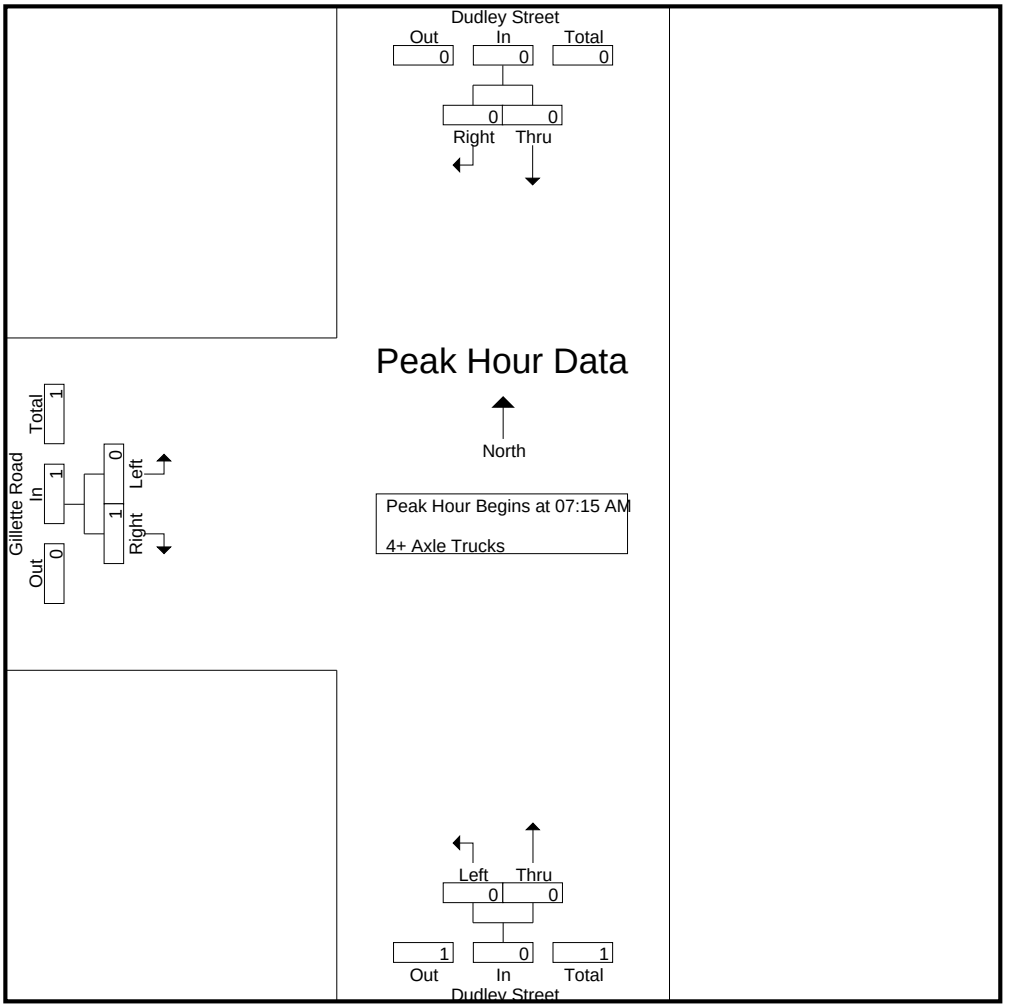

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	**1**	**1**
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	1
% App. Total	0	0		0	0		0	100	
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250

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City of Pomona
N/S: Dudley Street
E/W: Gillette Road
Weather: Clear

File Name : 01_POM_Dudley_Gillette MD
Site Code : 05119790
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
12:00 PM	8	12	20	28	16	44	5	36	41	105
12:15 PM	10	10	20	27	14	41	10	37	47	108
12:30 PM	9	8	17	35	17	52	9	34	43	112
12:45 PM	7	11	18	22	15	37	8	29	37	92
Total	34	41	75	112	62	174	32	136	168	417
01:00 PM	9	17	26	31	17	48	9	36	45	119
01:15 PM	7	12	19	18	11	29	5	33	38	86
01:30 PM	9	11	20	37	15	52	5	40	45	117
01:45 PM	6	11	17	36	18	54	6	39	45	116
Total	31	51	82	122	61	183	25	148	173	438
02:00 PM	7	10	17	32	24	56	6	48	54	127
02:15 PM	14	18	32	31	15	46	9	48	57	135
02:30 PM	19	14	33	37	21	58	5	44	49	140
02:45 PM	10	18	28	34	23	57	9	50	59	144
Total	50	60	110	134	83	217	29	190	219	546
Grand Total	115	152	267	368	206	574	86	474	560	1401
Apprch %	43.1	56.9		64.1	35.9		15.4	84.6		
Total %	8.2	10.8	19.1	26.3	14.7	41	6.1	33.8	40	
Passenger Vehicles	114	149	263	346	202	548	86	452	538	1349
% Passenger Vehicles	99.1	98	98.5	94	98.1	95.5	100	95.4	96.1	96.3
Large 2 Axle Vehicles	1	3	4	3	4	7	0	11	11	22
% Large 2 Axle Vehicles	0.9	2	1.5	0.8	1.9	1.2	0	2.3	2	1.6
3 Axle Vehicles	0	0	0	4	0	4	0	4	4	8
% 3 Axle Vehicles	0	0	0	1.1	0	0.7	0	0.8	0.7	0.6
4+ Axle Trucks	0	0	0	15	0	15	0	7	7	22
% 4+ Axle Trucks	0	0	0	4.1	0	2.6	0	1.5	1.2	1.6

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 02:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	7	10	17	32	**24**	56	6	48	54	127
02:15 PM	14	**18**	32	31	15	46	**9**	48	57	135
02:30 PM	**19**	14	**33**	**37**	21	**58**	5	44	49	140
02:45 PM	10	18	28	34	23	57	9	**50**	**59**	**144**
Total Volume	50	60	110	134	83	217	29	190	219	546
% App. Total	45.5	54.5		61.8	38.2		13.2	86.8		
PHF	.658	.833	.833	.905	.865	.935	.806	.950	.928	.948

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N/S: Dudley Street
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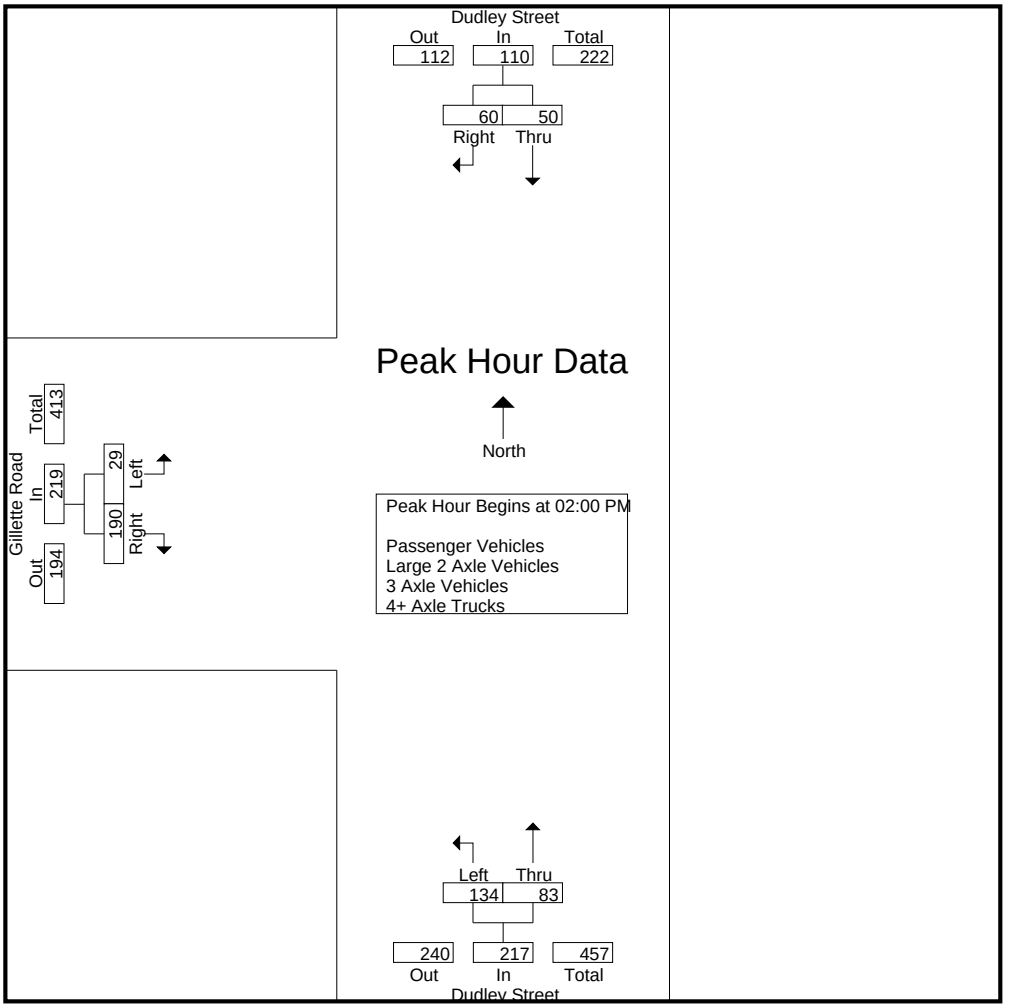

Peak Hour Analysis From 12:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM			02:00 PM			02:00 PM		
+0 mins.	7	10	17	32	**24**	56	6	48	54
+15 mins.	14	**18**	32	31	15	46	**9**	48	57
+30 mins.	**19**	14	**33**	**37**	21	**58**	5	44	49
+45 mins.	10	18	28	34	23	57	9	**50**	**59**
Total Volume	50	60	110	134	83	217	29	190	219
% App. Total	45.5	54.5		61.8	38.2		13.2	86.8	
PHF	.658	.833	.833	.905	.865	.935	.806	.950	.928

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City of Pomona
N/S: Dudley Street
E/W: Gillette Road
Weather: Clear

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Groups Printed- Passenger Vehicles

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
12:00 PM	8	12	20	26	16	42	5	31	36	98
12:15 PM	10	10	20	24	14	38	10	35	45	103
12:30 PM	9	8	17	32	16	48	9	34	43	108
12:45 PM	7	11	18	19	14	33	8	27	35	86
Total	34	41	75	101	60	161	32	127	159	395
01:00 PM	8	17	25	27	17	44	9	34	43	112
01:15 PM	7	12	19	17	11	28	5	32	37	84
01:30 PM	9	11	20	35	14	49	5	40	45	114
01:45 PM	6	11	17	35	18	53	6	35	41	111
Total	30	51	81	114	60	174	25	141	166	421
02:00 PM	7	10	17	32	24	56	6	46	52	125
02:15 PM	14	18	32	31	14	45	9	46	55	132
02:30 PM	19	13	32	36	21	57	5	44	49	138
02:45 PM	10	16	26	32	23	55	9	48	57	138
Total	50	57	107	131	82	213	29	184	213	533
Grand Total	114	149	263	346	202	548	86	452	538	1349
Apprch %	43.3	56.7		63.1	36.9		16	84		
Total %	8.5	11	19.5	25.6	15	40.6	6.4	33.5	39.9	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	7	10	17	32	**24**	56	6	46	52	125
02:15 PM	14	**18**	**32**	31	14	45	**9**	46	55	132
02:30 PM	**19**	13	32	**36**	21	**57**	5	44	49	**138**
02:45 PM	10	16	26	32	23	55	9	**48**	**57**	138
Total Volume	50	57	107	131	82	213	29	184	213	533
% App. Total	46.7	53.3		61.5	38.5		13.6	86.4		
PHF	.658	.792	.836	.910	.854	.934	.806	.958	.934	.966

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City of Pomona
N/S: Dudley Street
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Weather: Clear

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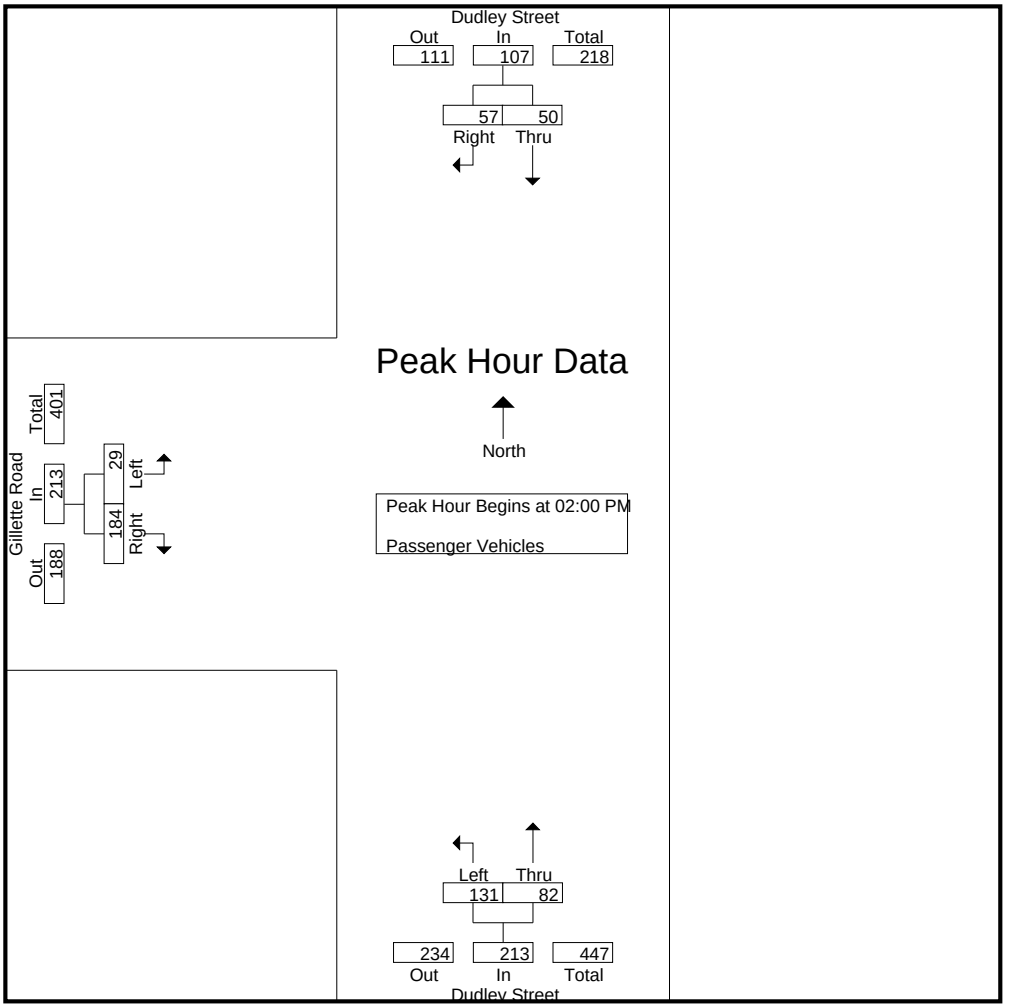

Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM			02:00 PM			02:00 PM		
+0 mins.	7	10	17	32	**24**	56	6	46	52
+15 mins.	14	**18**	**32**	31	14	45	**9**	46	55
+30 mins.	**19**	13	32	**36**	21	**57**	5	44	49
+45 mins.	10	16	26	32	23	55	9	**48**	**57**
Total Volume	50	57	107	131	82	213	29	184	213
% App. Total	46.7	53.3		61.5	38.5		13.6	86.4	
PHF	.658	.792	.836	.910	.854	.934	.806	.958	.934

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City of Pomona
N/S: Dudley Street
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Weather: Clear

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Groups Printed- Large 2 Axle Vehicles

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
12:00 PM	0	0	0	0	0	0	0	2	2	2
12:15 PM	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	1	1	0	0	0	1
12:45 PM	0	0	0	1	1	2	0	0	0	2
Total	0	0	0	1	2	3	0	2	2	5
01:00 PM	1	0	1	0	0	0	0	2	2	3
01:15 PM	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	1	1	0	0	0	1
01:45 PM	0	0	0	1	0	1	0	3	3	4
Total	1	0	1	1	1	2	0	5	5	8
02:00 PM	0	0	0	0	0	0	0	2	2	2
02:15 PM	0	0	0	0	1	1	0	2	2	3
02:30 PM	0	1	1	0	0	0	0	0	0	1
02:45 PM	0	2	2	1	0	1	0	0	0	3
Total	0	3	3	1	1	2	0	4	4	9
Grand Total	1	3	4	3	4	7	0	11	11	22
Apprch %	25	75		42.9	57.1		0	100		
Total %	4.5	13.6	18.2	13.6	18.2	31.8	0	50	50	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	0	0	0	0	0	0	0	**2**	**2**	2
02:15 PM	0	0	0	0	**1**	**1**	0	2	2	**3**
02:30 PM	0	1	1	0	0	0	0	0	0	1
02:45 PM	0	**2**	**2**	**1**	0	1	0	0	0	3
Total Volume	0	3	3	1	1	2	0	4	4	9
% App. Total	0	100		50	50		0	100		
PHF	.000	.375	.375	.250	.250	.500	.000	.500	.500	.750

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City of Pomona
N/S: Dudley Street
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Weather: Clear

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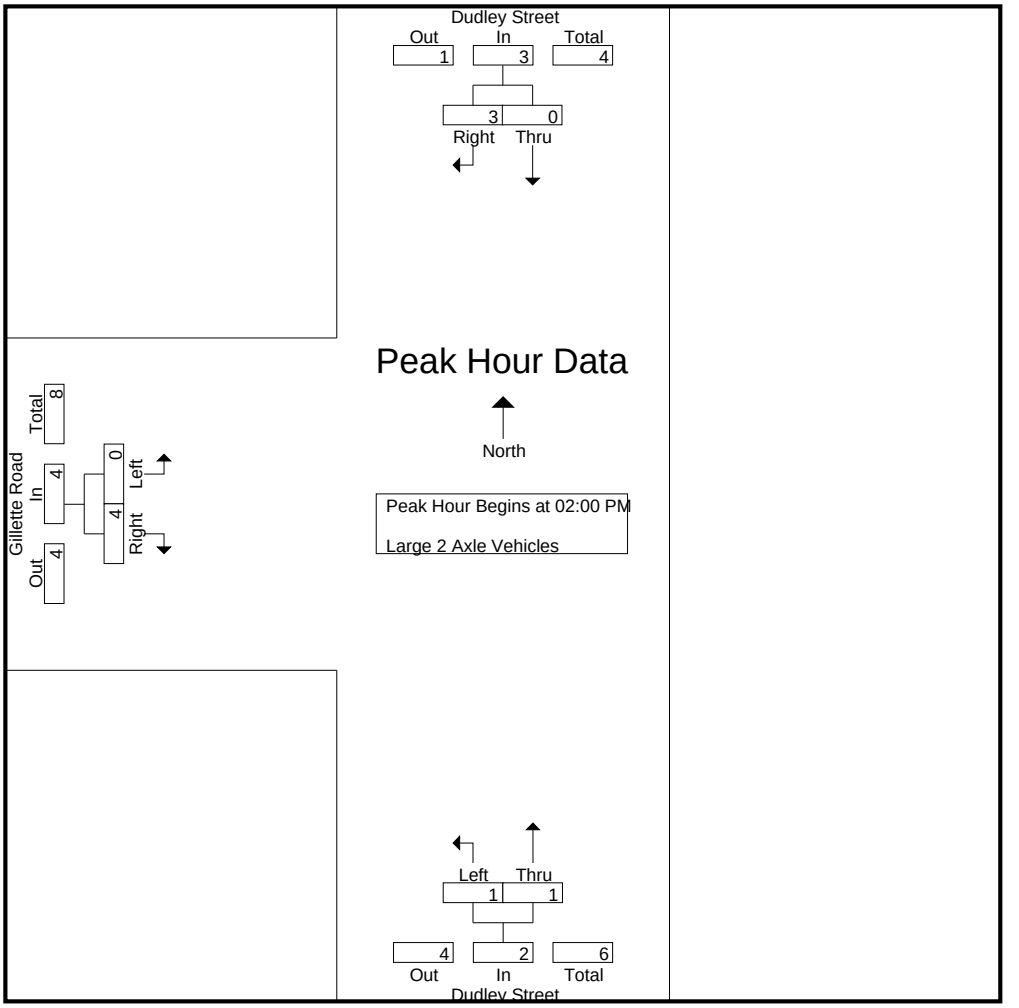

Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM			02:00 PM			02:00 PM		
+0 mins.	0	0	0	0	0	0	0	**2**	**2**
+15 mins.	0	0	0	0	**1**	**1**	0	2	2
+30 mins.	0	1	1	0	0	0	0	0	0
+45 mins.	0	**2**	**2**	**1**	0	1	0	0	0
Total Volume	0	3	3	1	1	2	0	4	4
% App. Total	0	100		50	50		0	100	
PHF	.000	.375	.375	.250	.250	.500	.000	.500	.500

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City of Pomona
N/S: Dudley Street
E/W: Gillette Road
Weather: Clear

File Name : 01_POM_Dudley_Gillette MD
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Groups Printed- 3 Axle Vehicles

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
12:00 PM	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	1	1	1
12:30 PM	0	0	0	1	0	1	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	1	0	1	0	2	2	3
01:00 PM	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	2	0	2	0	0	0	2
01:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	2	0	2	0	1	1	3
02:00 PM	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	1	0	1	0	0	0	1
02:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	1	0	1	0	1	1	2
Grand Total	0	0	0	4	0	4	0	4	4	8
Apprch %	0	0		100	0		0	100		
Total %	0	0	0	50	0	50	0	50	50	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	**1**	0	**1**	0	0	0	**1**
02:45 PM	0	0	0	0	0	0	0	**1**	**1**	1
Total Volume	0	0	0	1	0	1	0	1	1	2
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.250	.000	.250	.000	.250	.250	.500

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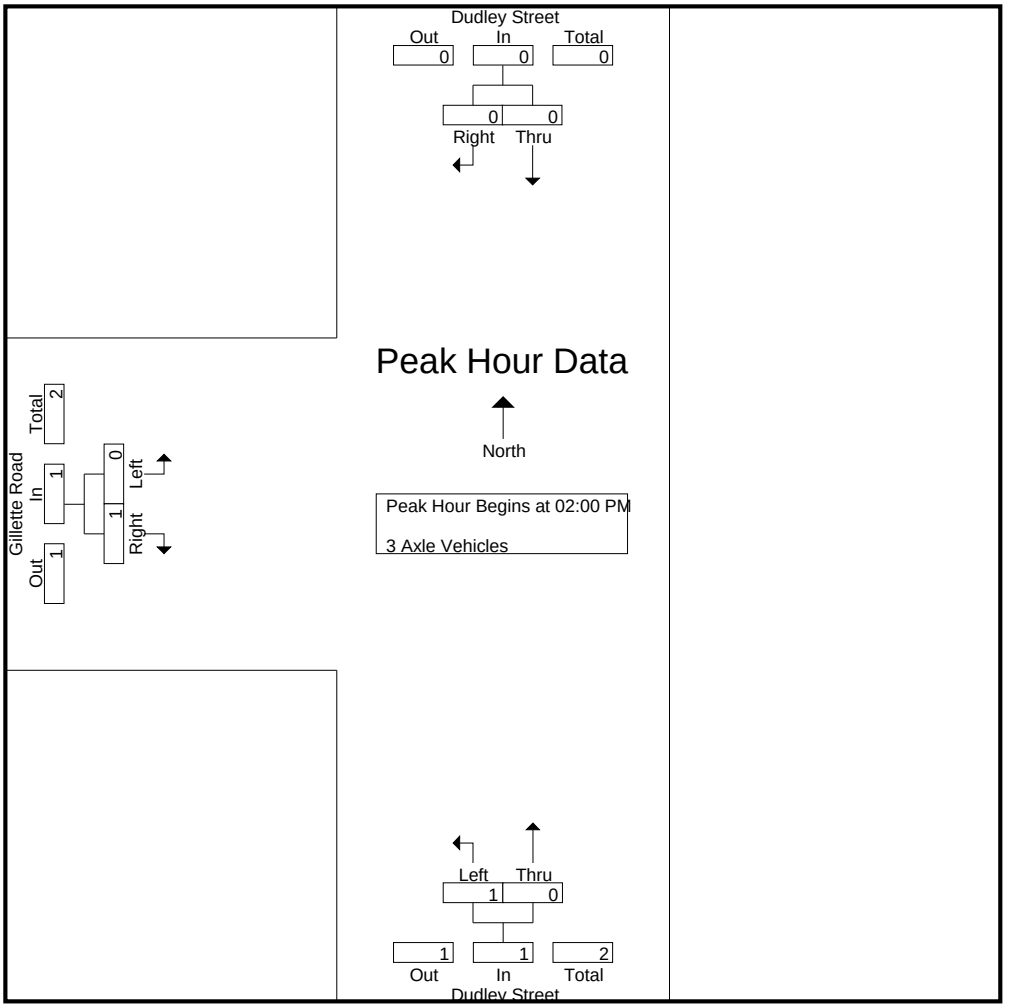

Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM			02:00 PM			02:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	**1**	0	**1**	0	0	0
+45 mins.	0	0	0	0	0	0	0	**1**	**1**
Total Volume	0	0	0	1	0	1	0	1	1
% App. Total	0	0		100	0		0	100	
PHF	.000	.000	.000	.250	.000	.250	.000	.250	.250

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City of Pomona
N/S: Dudley Street
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Weather: Clear

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Groups Printed- 4+ Axle Trucks

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
12:00 PM	0	0	0	2	0	2	0	3	3	5
12:15 PM	0	0	0	3	0	3	0	1	1	4
12:30 PM	0	0	0	2	0	2	0	0	0	2
12:45 PM	0	0	0	2	0	2	0	1	1	3
Total	0	0	0	9	0	9	0	5	5	14
01:00 PM	0	0	0	4	0	4	0	0	0	4
01:15 PM	0	0	0	1	0	1	0	1	1	2
01:30 PM	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	5	0	5	0	1	1	6
02:00 PM	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	1	0	1	0	1	1	2
Total	0	0	0	1	0	1	0	1	1	2
Grand Total	0	0	0	15	0	15	0	7	7	22
Apprch %	0	0		100	0		0	100		
Total %	0	0	0	68.2	0	68.2	0	31.8	31.8	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	**1**	0	**1**	0	**1**	**1**	**2**
Total Volume	0	0	0	1	0	1	0	1	1	2
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.250	.000	.250	.000	.250	.250	.250

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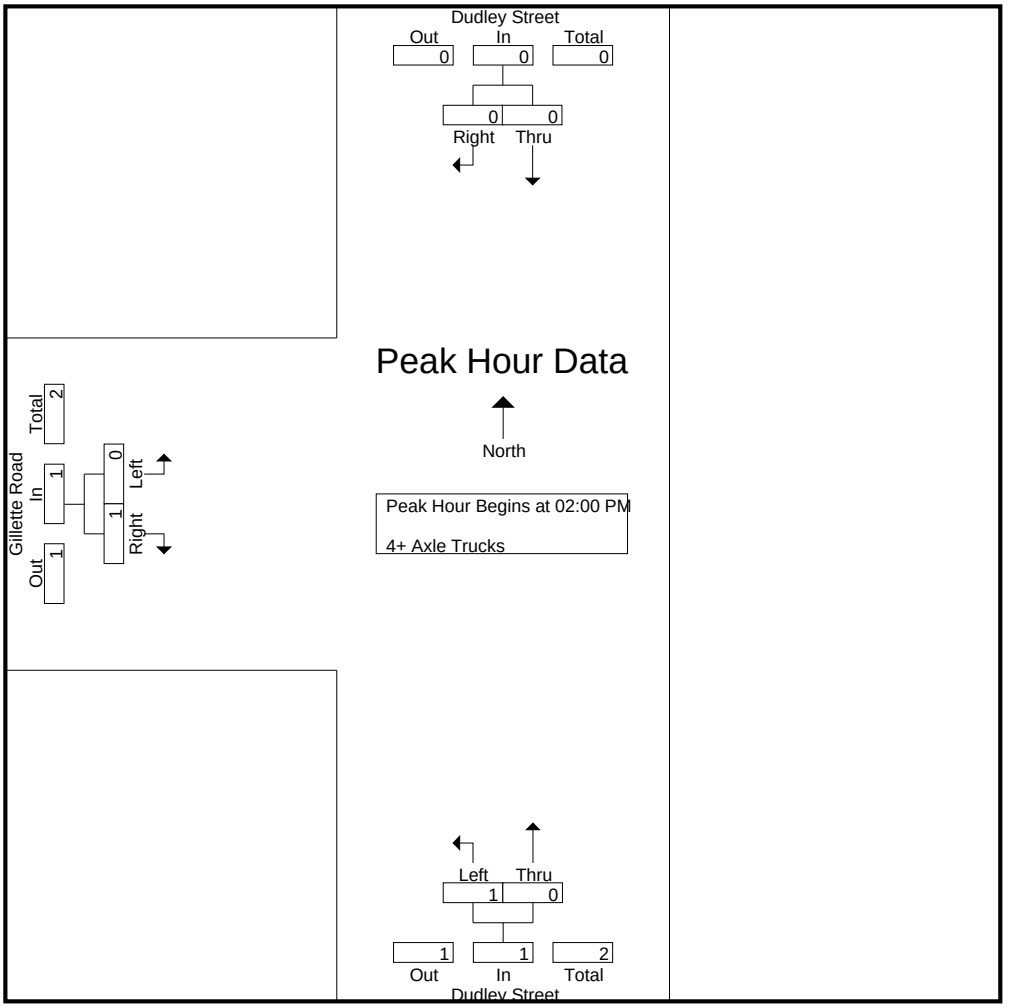

Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM			02:00 PM			02:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	**1**	0	**1**	0	**1**	**1**
Total Volume	0	0	0	1	0	1	0	1	1
% App. Total	0	0		100	0		0	100	
PHF	.000	.000	.000	.250	.000	.250	.000	.250	.250

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City of Pomona
N/S: Dudley Street
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Weather: Clear

File Name : 01_POM_Dudley_Gillette PM
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
03:00 PM	15	8	23	41	36	77	10	64	74	174
03:15 PM	10	8	18	33	44	77	15	62	77	172
03:30 PM	6	12	18	47	32	79	9	57	66	163
03:45 PM	8	6	14	31	28	59	18	65	83	156
Total	39	34	73	152	140	292	52	248	300	665
04:00 PM	6	7	13	28	28	56	10	58	68	137
04:15 PM	11	17	28	35	24	59	13	55	68	155
04:30 PM	11	18	29	26	21	47	12	56	68	144
04:45 PM	9	15	24	29	22	51	12	60	72	147
Total	37	57	94	118	95	213	47	229	276	583
05:00 PM	10	7	17	31	31	62	19	54	73	152
05:15 PM	10	10	20	32	29	61	18	44	62	143
05:30 PM	10	12	22	30	25	55	12	62	74	151
05:45 PM	10	11	21	25	28	53	17	61	78	152
Total	40	40	80	118	113	231	66	221	287	598
Grand Total	116	131	247	388	348	736	165	698	863	1846
Apprch %	47	53		52.7	47.3		19.1	80.9		
Total %	6.3	7.1	13.4	21	18.9	39.9	8.9	37.8	46.7	
Passenger Vehicles	116	131	247	377	345	722	164	654	818	1787
% Passenger Vehicles	100	100	100	97.2	99.1	98.1	99.4	93.7	94.8	96.8
Large 2 Axle Vehicles	0	0	0	9	3	12	1	25	26	38
% Large 2 Axle Vehicles	0	0	0	2.3	0.9	1.6	0.6	3.6	3	2.1
3 Axle Vehicles	0	0	0	0	0	0	0	8	8	8
% 3 Axle Vehicles	0	0	0	0	0	0	0	1.1	0.9	0.4
4+ Axle Trucks	0	0	0	2	0	2	0	11	11	13
% 4+ Axle Trucks	0	0	0	0.5	0	0.3	0	1.6	1.3	0.7

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:00 PM										
03:00 PM	**15**	8	**23**	41	36	77	10	64	74	**174**
03:15 PM	10	8	18	33	**44**	77	15	62	77	172
03:30 PM	6	**12**	18	**47**	32	**79**	9	57	66	163
03:45 PM	8	6	14	31	28	59	**18**	**65**	**83**	156
Total Volume	39	34	73	152	140	292	52	248	300	665
% App. Total	53.4	46.6		52.1	47.9		17.3	82.7		
PHF	.650	.708	.793	.809	.795	.924	.722	.954	.904	.955

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City of Pomona
N/S: Dudley Street
E/W: Gillette Road
Weather: Clear

File Name : 01_POM_Dudley_Gillette PM
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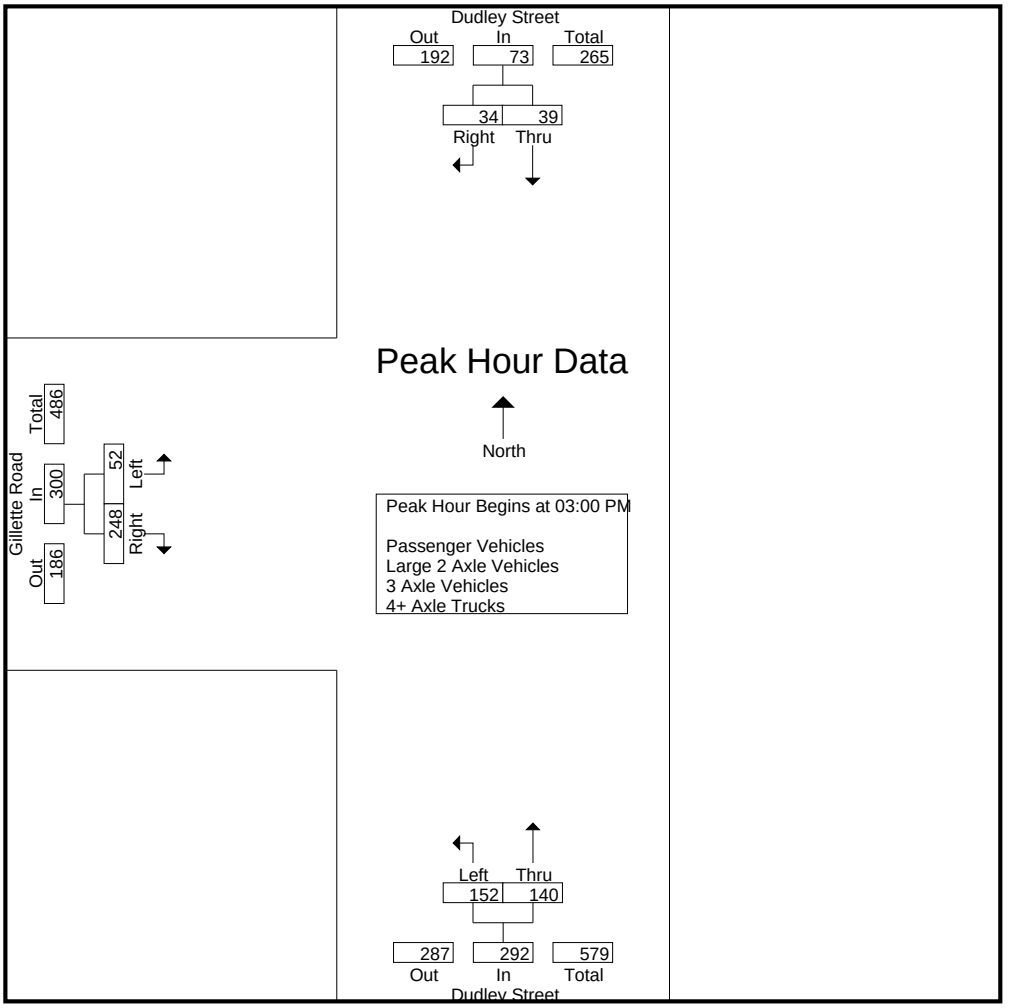

Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM			03:00 PM			03:00 PM		
+0 mins.	**11**	17	28	41	36	77	10	64	74
+15 mins.	11	**18**	**29**	33	**44**	77	15	62	77
+30 mins.	9	15	24	**47**	32	**79**	9	57	66
+45 mins.	10	7	17	31	28	59	**18**	**65**	**83**
Total Volume	41	57	98	152	140	292	52	248	300
% App. Total	41.8	58.2		52.1	47.9		17.3	82.7	
PHF	.932	.792	.845	.809	.795	.924	.722	.954	.904

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City of Pomona
N/S: Dudley Street
E/W: Gillette Road
Weather: Clear

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Groups Printed- Passenger Vehicles

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
03:00 PM	15	8	23	40	36	76	10	62	72	171
03:15 PM	10	8	18	32	43	75	15	58	73	166
03:30 PM	6	12	18	46	31	77	9	51	60	155
03:45 PM	8	6	14	29	28	57	18	63	81	152
Total	39	34	73	147	138	285	52	234	286	644
04:00 PM	6	7	13	26	28	54	10	55	65	132
04:15 PM	11	17	28	32	23	55	13	50	63	146
04:30 PM	11	18	29	26	21	47	12	53	65	141
04:45 PM	9	15	24	29	22	51	12	57	69	144
Total	37	57	94	113	94	207	47	215	262	563
05:00 PM	10	7	17	30	31	61	19	48	67	145
05:15 PM	10	10	20	32	29	61	18	41	59	140
05:30 PM	10	12	22	30	25	55	11	59	70	147
05:45 PM	10	11	21	25	28	53	17	57	74	148
Total	40	40	80	117	113	230	65	205	270	580
Grand Total	116	131	247	377	345	722	164	654	818	1787
Apprch %	47	53		52.2	47.8		20	80		
Total %	6.5	7.3	13.8	21.1	19.3	40.4	9.2	36.6	45.8	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:00 PM										
03:00 PM	**15**	8	**23**	40	36	76	10	62	72	**171**
03:15 PM	10	8	18	32	**43**	75	15	58	73	166
03:30 PM	6	**12**	18	**46**	31	**77**	9	51	60	155
03:45 PM	8	6	14	29	28	57	**18**	**63**	**81**	152
Total Volume	39	34	73	147	138	285	52	234	286	644
% App. Total	53.4	46.6		51.6	48.4		18.2	81.8		
PHF	.650	.708	.793	.799	.802	.925	.722	.929	.883	.942

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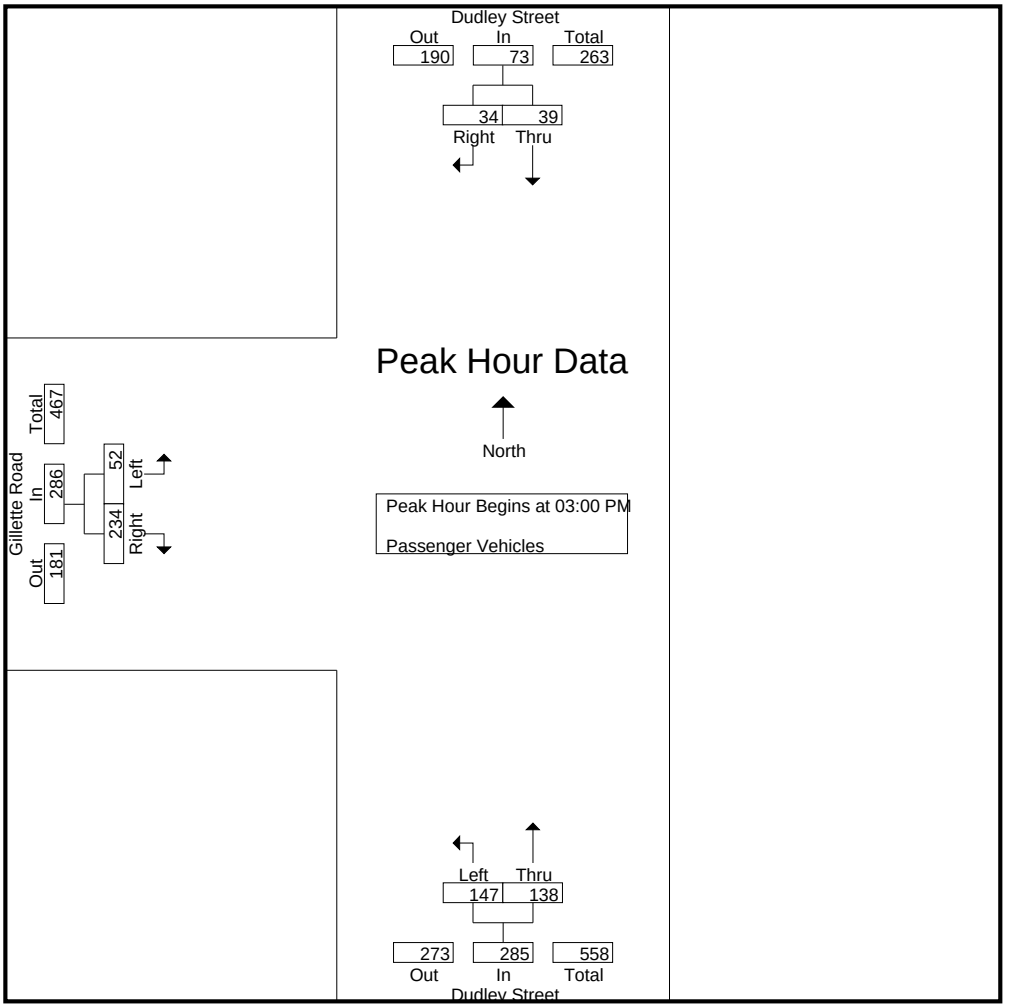

Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM			03:00 PM			03:00 PM		
+0 mins.	**15**	8	**23**	40	36	76	10	62	72
+15 mins.	10	8	18	32	**43**	75	15	58	73
+30 mins.	6	**12**	18	**46**	31	**77**	9	51	60
+45 mins.	8	6	14	29	28	57	**18**	**63**	**81**
Total Volume	39	34	73	147	138	285	52	234	286
% App. Total	53.4	46.6		51.6	48.4		18.2	81.8	
PHF	.650	.708	.793	.799	.802	.925	.722	.929	.883

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City of Pomona
N/S: Dudley Street
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Groups Printed- Large 2 Axle Vehicles

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
03:00 PM	0	0	0	1	0	1	0	1	1	2
03:15 PM	0	0	0	1	1	2	0	2	2	4
03:30 PM	0	0	0	1	1	2	0	3	3	5
03:45 PM	0	0	0	1	0	1	0	1	1	2
Total	0	0	0	4	2	6	0	7	7	13
04:00 PM	0	0	0	1	0	1	0	2	2	3
04:15 PM	0	0	0	3	1	4	0	3	3	7
04:30 PM	0	0	0	0	0	0	0	2	2	2
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	4	1	5	0	8	8	13
05:00 PM	0	0	0	1	0	1	0	2	2	3
05:15 PM	0	0	0	0	0	0	0	3	3	3
05:30 PM	0	0	0	0	0	0	1	1	2	2
05:45 PM	0	0	0	0	0	0	0	4	4	4
Total	0	0	0	1	0	1	1	10	11	12
Grand Total	0	0	0	9	3	12	1	25	26	38
Apprch %	0	0		75	25		3.8	96.2		
Total %	0	0	0	23.7	7.9	31.6	2.6	65.8	68.4	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:00 PM										
03:00 PM	0	0	0	**1**	0	1	0	1	1	2
03:15 PM	0	0	0	1	**1**	**2**	0	2	2	4
03:30 PM	0	0	0	1	1	2	0	**3**	**3**	**5**
03:45 PM	0	0	0	1	0	1	0	1	1	2
Total Volume	0	0	0	4	2	6	0	7	7	13
% App. Total	0	0		66.7	33.3		0	100		
PHF	.000	.000	.000	1.00	.500	.750	.000	.583	.583	.650

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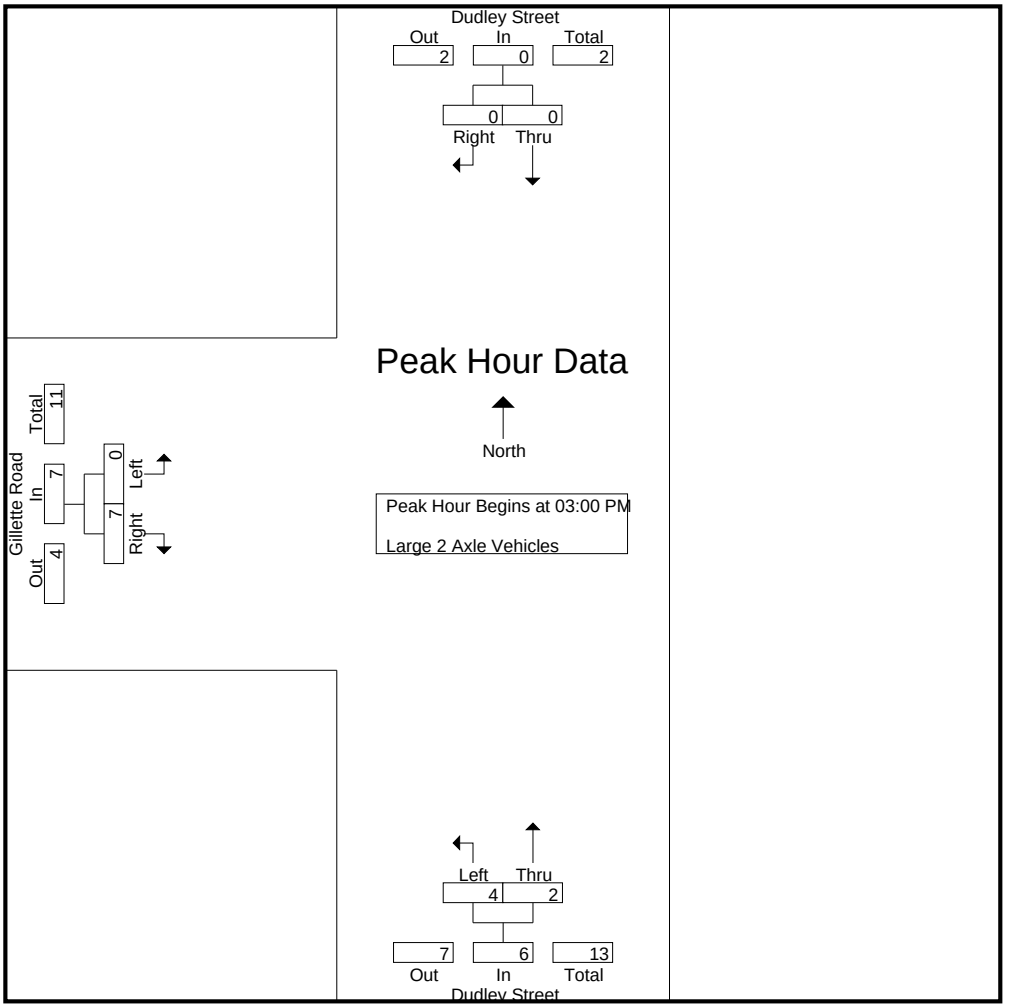

Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM			03:00 PM			03:00 PM		
+0 mins.	0	0	0	**1**	0	1	0	1	1
+15 mins.	0	0	0	1	**1**	**2**	0	2	2
+30 mins.	0	0	0	1	1	2	0	**3**	**3**
+45 mins.	0	0	0	1	0	1	0	1	1
Total Volume	0	0	0	4	2	6	0	7	7
% App. Total	0	0		66.7	33.3		0	100	
PHF	.000	.000	.000	1.000	.500	.750	.000	.583	.583

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City of Pomona
N/S: Dudley Street
E/W: Gillette Road
Weather: Clear

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Groups Printed- 3 Axle Vehicles

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	2	2	2
03:30 PM	0	0	0	0	0	0	0	1	1	1
03:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	0	0	4	4	4
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	1	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	0	0	2	2	2
05:00 PM	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	1	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	2	2	2
Grand Total	0	0	0	0	0	0	0	8	8	8
Apprch %	0	0		0	0		0	100		
Total %	0	0	0	0	0	0	0	100	100	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:00 PM										
03:00 PM	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	**2**	**2**	**2**
03:30 PM	0	0	0	0	0	0	0	1	1	1
03:45 PM	0	0	0	0	0	0	0	1	1	1
Total Volume	0	0	0	0	0	0	0	4	4	4
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.500	.500	.500

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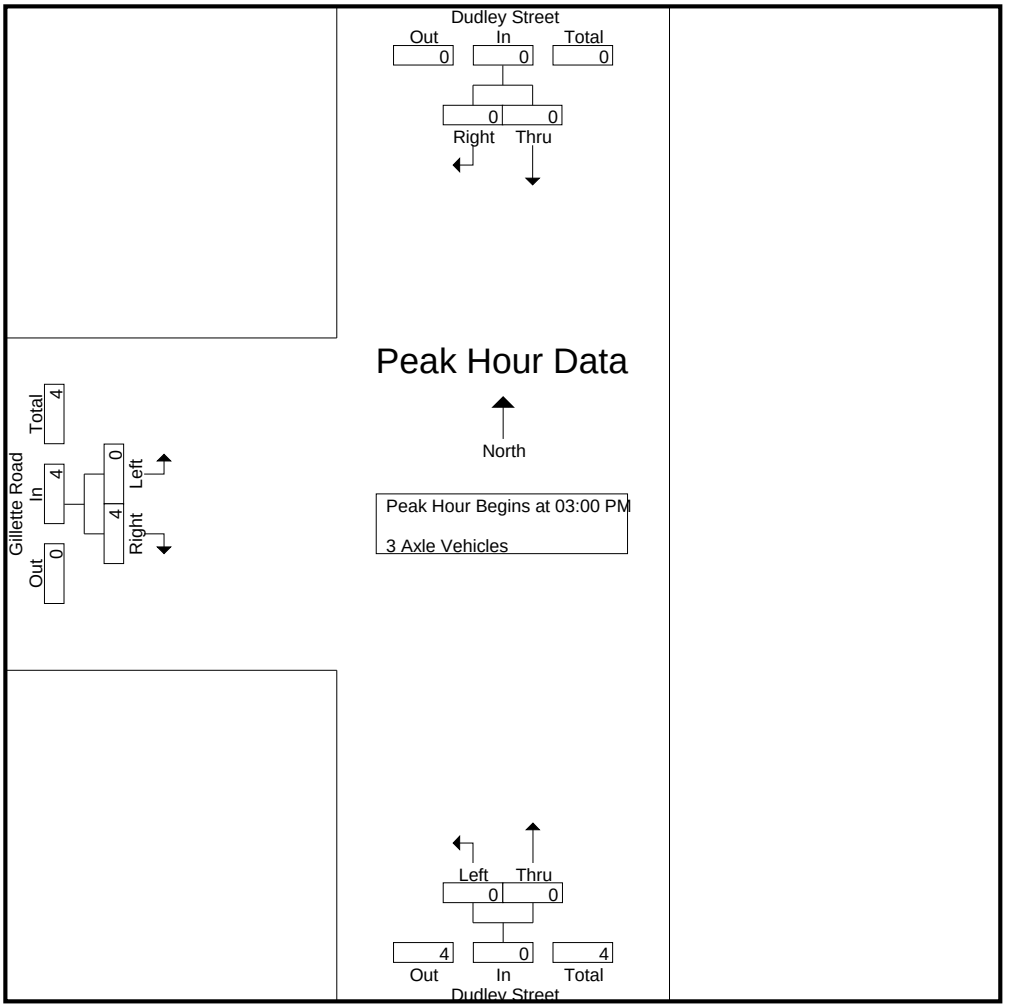

Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM			03:00 PM			03:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	**2**	**2**
+30 mins.	0	0	0	0	0	0	0	1	1
+45 mins.	0	0	0	0	0	0	0	1	1
Total Volume	0	0	0	0	0	0	0	4	4
% App. Total	0	0		0	0		0	100	
PHF	.000	.000	.000	.000	.000	.000	.000	.500	.500

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City of Pomona
N/S: Dudley Street
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Weather: Clear

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Groups Printed- 4+ Axle Trucks

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	1	1	1
03:15 PM	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	2	2	2
03:45 PM	0	0	0	1	0	1	0	0	0	1
Total	0	0	0	1	0	1	0	3	3	4
04:00 PM	0	0	0	1	0	1	0	1	1	2
04:15 PM	0	0	0	0	0	0	0	1	1	1
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	1	0	1	0	4	4	5
05:00 PM	0	0	0	0	0	0	0	3	3	3
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	1	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	4	4	4
Grand Total	0	0	0	2	0	2	0	11	11	13
Apprch %	0	0		100	0		0	100		
Total %	0	0	0	15.4	0	15.4	0	84.6	84.6	

	Dudley Street Southbound			Dudley Street Northbound			Gillette Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:00 PM										
03:00 PM	0	0	0	0	0	0	0	1	1	1
03:15 PM	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	**2**	**2**	**2**
03:45 PM	0	0	0	**1**	0	**1**	0	0	0	1
Total Volume	0	0	0	1	0	1	0	3	3	4
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.250	.000	.250	.000	.375	.375	.500

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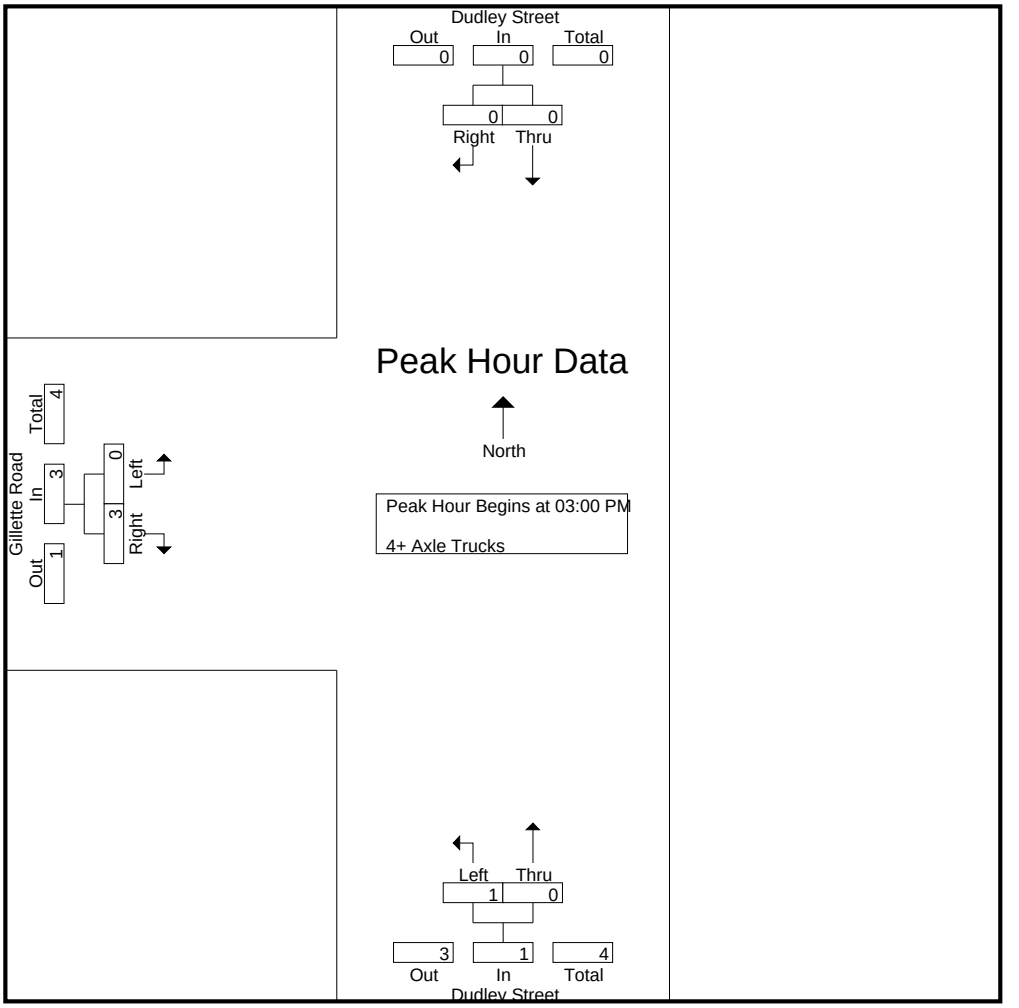

Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM			03:00 PM			03:00 PM		
+0 mins.	0	0	0	0	0	0	0	1	1
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	**2**	**2**
+45 mins.	0	0	0	**1**	0	**1**	0	0	0
Total Volume	0	0	0	1	0	1	0	3	3
% App. Total	0	0		100	0		0	100	
PHF	.000	.000	.000	.250	.000	.250	.000	.375	.375

Location: Pomona
N/S: Dudley Street
E/W: Gillette Road

Date: 11/14/2019
Day: Thursday

PEDESTRIANS

	North Leg Dudley Street	East Leg Dead End	South Leg Dudley Street	West Leg Gillette Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:30 AM	0	0	0	0	0
6:45 AM	0	0	0	0	0
7:00 AM	0	0	0	0	0
7:15 AM	1	0	0	1	2
7:30 AM	0	0	1	0	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	1	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	1	0	1
TOTAL VOLUMES:	1	0	2	2	5

	North Leg Dudley Street	East Leg Dead End	South Leg Dudley Street	West Leg Gillette Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
12:00 PM	0	0	0	0	0
12:15 PM	0	0	0	0	0
12:30 PM	0	0	0	0	0
12:45 PM	0	0	0	0	0
1:00 PM	0	0	0	0	0
1:15 PM	0	0	0	0	0
1:30 PM	0	0	0	0	0
1:45 PM	0	0	0	0	0
2:00 PM	0	0	0	0	0
2:15 PM	0	0	0	0	0
2:30 PM	0	0	0	0	0
2:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg Dudley Street	East Leg Dead End	South Leg Dudley Street	West Leg Gillette Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
3:00 PM	0	0	0	1	1
3:15 PM	0	0	0	1	1
3:30 PM	0	0	1	0	1
3:45 PM	0	0	1	0	1
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	1	0	1
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	3	2	5

Location: Pomona
N/S: Dudley Street
E/W: Gillette Road

Date: 11/14/2019
Day: Thursday

BICYCLES

	Southbound Dudley Street			Westbound Dead End			Northbound Dudley Street			Eastbound Gillette Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
TOTAL VOLUMES:	0	1	0	0	0	0	3	0	0	0	0	2	6

	Southbound Dudley Street			Westbound Dead End			Northbound Dudley Street			Eastbound Gillette Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
12:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	1	0	0	0	1	0	0	0	0	2	4

	Southbound Dudley Street			Westbound Dead End			Northbound Dudley Street			Eastbound Gillette Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	1	0	0	0	0	0	0	0	0	0	1	2
3:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	2	0	0	0	0	0	4	0	0	0	2	8

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City of Pomona
N/S: Dudley Street
E/W: I-10 Eastbound Ramps/Murchinson Ave
Weather: Clear

File Name : 02_POM_Dudley_10E AM
Site Code : 05119790
Start Date : 11/14/2019
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30 AM	0	32	9	41	0	0	2	2	31	52	0	83	6	0	13	19	145
06:45 AM	2	38	8	48	2	0	2	4	33	42	0	75	2	0	18	20	147
Total	2	70	17	89	2	0	4	6	64	94	0	158	8	0	31	39	292
07:00 AM	1	28	9	38	1	1	3	5	34	40	0	74	4	0	26	30	147
07:15 AM	0	33	8	41	7	3	7	17	28	47	0	75	4	0	27	31	164
07:30 AM	0	53	9	62	27	14	15	56	46	64	0	110	5	0	20	25	253
07:45 AM	4	80	11	95	40	25	22	87	40	57	0	97	11	1	45	57	336
Total	5	194	37	236	75	43	47	165	148	208	0	356	24	1	118	143	900
08:00 AM	1	39	6	46	50	18	26	94	35	48	0	83	12	2	35	49	272
08:15 AM	1	20	7	28	7	1	7	15	31	53	0	84	9	0	27	36	163
08:30 AM	0	18	8	26	1	2	0	3	25	39	0	64	23	1	25	49	142
08:45 AM	1	29	7	37	0	1	2	3	31	29	0	60	8	0	22	30	130
Total	3	106	28	137	58	22	35	115	122	169	0	291	52	3	109	164	707
09:00 AM	0	26	7	33	1	1	1	3	21	24	0	45	4	0	21	25	106
09:15 AM	0	37	8	45	2	0	0	2	27	27	0	54	6	0	13	19	120
Grand Total	10	433	97	540	138	66	87	291	382	522	0	904	94	4	292	390	2125
Apprch %	1.9	80.2	18		47.4	22.7	29.9		42.3	57.7	0		24.1	1	74.9		
Total %	0.5	20.4	4.6	25.4	6.5	3.1	4.1	13.7	18	24.6	0	42.5	4.4	0.2	13.7	18.4	
Passenger Vehicles	9	416	95	520	132	61	83	276	366	503	0	869	90	2	271	363	2028
% Passenger Vehicles	90	96.1	97.9	96.3	95.7	92.4	95.4	94.8	95.8	96.4	0	96.1	95.7	50	92.8	93.1	95.4
Large 2 Axle Vehicles	0	8	2	10	3	0	2	5	8	11	0	19	4	0	9	13	47
% Large 2 Axle Vehicles	0	1.8	2.1	1.9	2.2	0	2.3	1.7	2.1	2.1	0	2.1	4.3	0	3.1	3.3	2.2
3 Axle Vehicles	0	2	0	2	2	0	0	2	1	1	0	2	0	1	1	2	8
% 3 Axle Vehicles	0	0.5	0	0.4	1.4	0	0	0.7	0.3	0.2	0	0.2	0	25	0.3	0.5	0.4
4+ Axle Trucks	1	7	0	8	1	5	2	8	7	7	0	14	0	1	11	12	42
% 4+ Axle Trucks	10	1.6	0	1.5	0.7	7.6	2.3	2.7	1.8	1.3	0	1.5	0	25	3.8	3.1	2

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	33	8	41	7	3	7	17	28	47	0	75	4	0	27	31	164
07:30 AM	0	53	9	62	27	14	15	56	**46**	**64**	0	**110**	5	0	20	25	253
07:45 AM	**4**	**80**	**11**	**95**	40	**25**	22	87	40	57	0	97	11	1	**45**	**57**	**336**
08:00 AM	1	39	6	46	**50**	18	**26**	**94**	35	48	0	83	**12**	**2**	35	49	272
Total Volume	5	205	34	244	124	60	70	254	149	216	0	365	32	3	127	162	1025
% App. Total	2	84	13.9		48.8	23.6	27.6		40.8	59.2	0		19.8	1.9	78.4		
PHF	.313	.641	.773	.642	.620	.600	.673	.676	.810	.844	.000	.830	.667	.375	.706	.711	.763

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File Name : 02_POM_Dudley_10E AM
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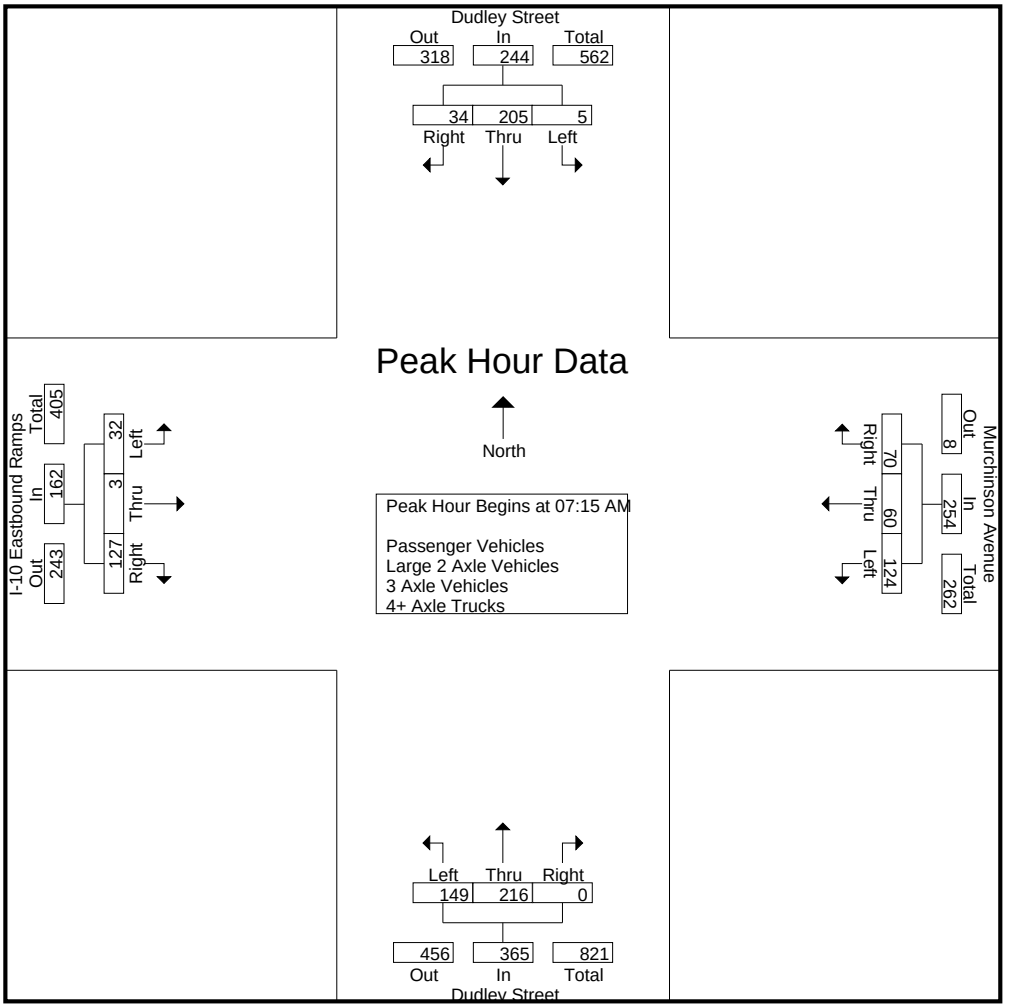

Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:30 AM				07:45 AM			
+0 mins.	0	33	8	41	7	3	7	17	**46**	**64**	0	**110**	11	1	**45**	**57**
+15 mins.	0	53	9	62	27	14	15	56	40	57	0	97	12	**2**	35	49
+30 mins.	**4**	**80**	**11**	**95**	40	**25**	22	87	35	48	0	83	9	0	27	36
+45 mins.	1	39	6	46	**50**	18	**26**	**94**	31	53	0	84	**23**	1	25	49
Total Volume	5	205	34	244	124	60	70	254	152	222	0	374	55	4	132	191
% App. Total	2	84	13.9		48.8	23.6	27.6		40.6	59.4	0		28.8	2.1	69.1	
PHF	.313	.641	.773	.642	.620	.600	.673	.676	.826	.867	.000	.850	.598	.500	.733	.838

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File Name : 02_POM_Dudley_10E AM
Site Code : 05119790
Start Date : 11/14/2019
Page No : 1

Groups Printed- Passenger Vehicles

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30 AM	0	31	9	40	0	0	1	1	27	51	0	78	6	0	13	19	138
06:45 AM	2	34	7	43	0	0	1	1	33	39	0	72	2	0	18	20	136
Total	2	65	16	83	0	0	2	2	60	90	0	150	8	0	31	39	274
07:00 AM	1	27	8	36	1	1	3	5	31	38	0	69	4	0	24	28	138
07:15 AM	0	32	8	40	7	3	7	17	28	45	0	73	4	0	25	29	159
07:30 AM	0	53	9	62	26	14	14	54	46	62	0	108	5	0	19	24	248
07:45 AM	4	79	11	94	40	24	22	86	40	55	0	95	11	0	42	53	328
Total	5	191	36	232	74	42	46	162	145	200	0	345	24	0	110	134	873
08:00 AM	1	39	6	46	48	17	26	91	34	48	0	82	11	1	33	45	264
08:15 AM	1	18	7	26	6	0	6	12	31	50	0	81	9	0	24	33	152
08:30 AM	0	16	8	24	1	2	0	3	23	39	0	62	20	1	22	43	132
08:45 AM	0	26	7	33	0	0	2	2	28	29	0	57	8	0	22	30	122
Total	2	99	28	129	55	19	34	108	116	166	0	282	48	2	101	151	670
09:00 AM	0	24	7	31	1	0	1	2	20	22	0	42	4	0	16	20	95
09:15 AM	0	37	8	45	2	0	0	2	25	25	0	50	6	0	13	19	116
Grand Total	9	416	95	520	132	61	83	276	366	503	0	869	90	2	271	363	2028
Apprch %	1.7	80	18.3		47.8	22.1	30.1		42.1	57.9	0		24.8	0.6	74.7		
Total %	0.4	20.5	4.7	25.6	6.5	3	4.1	13.6	18	24.8	0	42.9	4.4	0.1	13.4	17.9	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	32	8	40	7	3	7	17	28	45	0	73	4	0	25	29	159
07:30 AM	0	53	9	62	26	14	14	54	**46**	**62**	0	**108**	5	0	19	24	248
07:45 AM	**4**	**79**	**11**	**94**	40	**24**	22	86	40	55	0	95	**11**	0	**42**	**53**	**328**
08:00 AM	1	39	6	46	**48**	17	**26**	**91**	34	48	0	82	11	**1**	33	45	264
Total Volume	5	203	34	242	121	58	69	248	148	210	0	358	31	1	119	151	999
% App. Total	2.1	83.9	14		48.8	23.4	27.8		41.3	58.7	0		20.5	0.7	78.8		
PHF	.313	.642	.773	.644	.630	.604	.663	.681	.804	.847	.000	.829	.705	.250	.708	.712	.761

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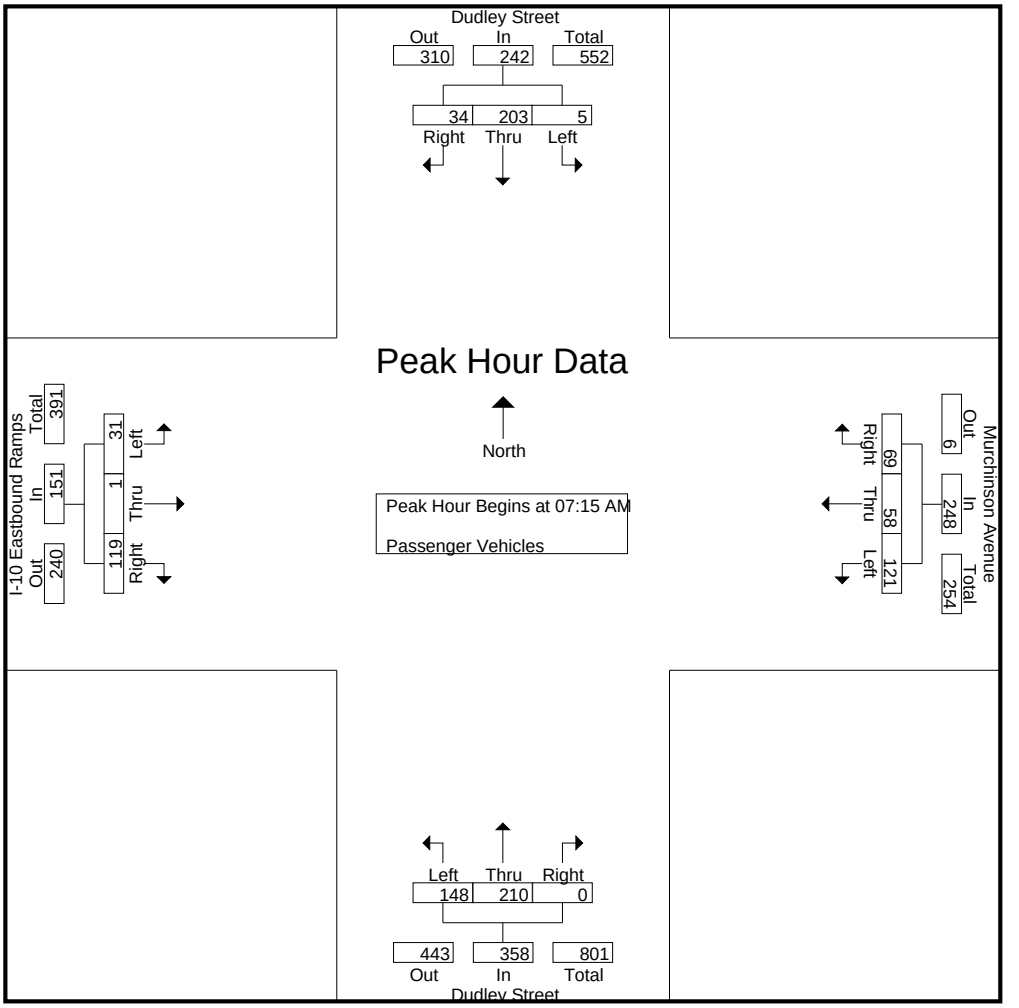

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	32	8	40	7	3	7	17	28	45	0	73	4	0	25	29
+15 mins.	0	53	9	62	26	14	14	54	**46**	**62**	0	**108**	5	0	19	24
+30 mins.	**4**	**79**	**11**	**94**	40	**24**	22	86	40	55	0	95	**11**	0	**42**	**53**
+45 mins.	1	39	6	46	**48**	17	**26**	**91**	34	48	0	82	11	**1**	33	45
Total Volume	5	203	34	242	121	58	69	248	148	210	0	358	31	1	119	151
% App. Total	2.1	83.9	14		48.8	23.4	27.8		41.3	58.7	0		20.5	0.7	78.8	
PHF	.313	.642	.773	.644	.630	.604	.663	.681	.804	.847	.000	.829	.705	.250	.708	.712

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City of Pomona
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Weather: Clear

File Name : 02_POM_Dudley_10E AM
Site Code : 05119790
Start Date : 11/14/2019

Groups Printed- Large 2 Axle Vehicles

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30 AM	0	1	0	1	0	0	1	1	3	0	0	3	0	0	0	0	5
06:45 AM	0	3	1	4	1	0	0	1	0	2	0	2	0	0	0	0	7
Total	0	4	1	5	1	0	1	2	3	2	0	5	0	0	0	0	12
07:00 AM	0	1	1	2	0	0	0	0	2	1	0	3	0	0	2	2	7
07:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	1	1	0	2	0	2	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	1	1	2	0	0	1	1	2	7	0	9	0	0	2	2	14
08:00 AM	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	2	3
08:15 AM	0	1	0	1	1	0	0	1	0	1	0	1	0	0	1	1	4
08:30 AM	0	1	0	1	0	0	0	0	1	0	0	1	3	0	1	4	6
08:45 AM	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
Total	0	3	0	3	2	0	0	2	2	1	0	3	4	0	3	7	15
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
09:15 AM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
Grand Total	0	8	2	10	3	0	2	5	8	11	0	19	4	0	9	13	47
Apprch %	0	80	20		60	0	40		42.1	57.9	0		30.8	0	69.2		
Total %	0	17	4.3	21.3	6.4	0	4.3	10.6	17	23.4	0	40.4	8.5	0	19.1	27.7	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	**1**	**1**	0	2	0	2	0	0	0	0	**3**
07:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
08:00 AM	0	0	0	0	**1**	0	0	1	0	0	0	0	**1**	0	**1**	**2**	3
Total Volume	0	0	0	0	1	0	1	2	0	6	0	6	1	0	1	2	10
% App. Total	0	0	0		50	0	50		0	100	0		50	0	50		
PHF	.000	.000	.000	.000	.250	.000	.250	.500	.000	.750	.000	.750	.250	.000	.250	.250	.833

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File Name : 02_POM_Dudley_10E AM
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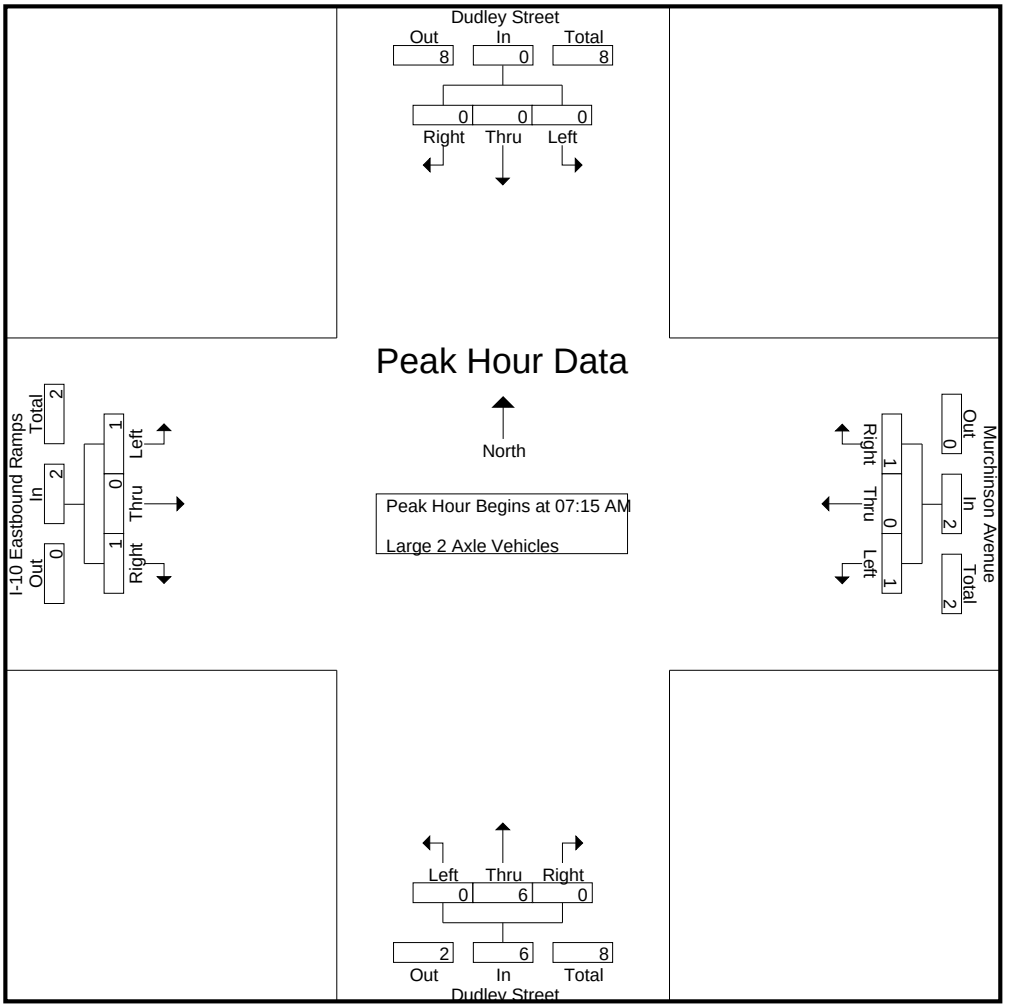

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0
+15 mins.	0	0	0	0	0	0	**1**	**1**	0	2	0	2	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0
+45 mins.	0	0	0	0	**1**	0	0	1	0	0	0	0	**1**	0	**1**	**2**
Total Volume	0	0	0	0	1	0	1	2	0	6	0	6	1	0	1	2
% App. Total	0	0	0		50	0	50		0	100	0		50	0	50	
PHF	.000	.000	.000	.000	.250	.000	.250	.500	.000	.750	.000	.750	.250	.000	.250	.250

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File Name : 02_POM_Dudley_10E AM
Site Code : 05119790
Start Date : 11/14/2019

Groups Printed- 3 Axle Vehicles

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
06:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	2
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
08:00 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
08:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	1	0	0	1	0	0	0	0	0	0	1	1	3
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Grand Total	0	2	0	2	2	0	0	2	1	1	0	2	0	1	1	2	8
Apprch %	0	100	0		100	0	0		50	50	0		0	50	50		
Total %	0	25	0	25	25	0	0	25	12.5	12.5	0	25	0	12.5	12.5	25	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	1
08:00 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	1	0	0	1	0	0	0	0	0	1	0	1	3
% App. Total	0	100	0		100	0	0		0	0	0		0	100	0		
PHF	.000	.250	.000	.250	.250	.000	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.750

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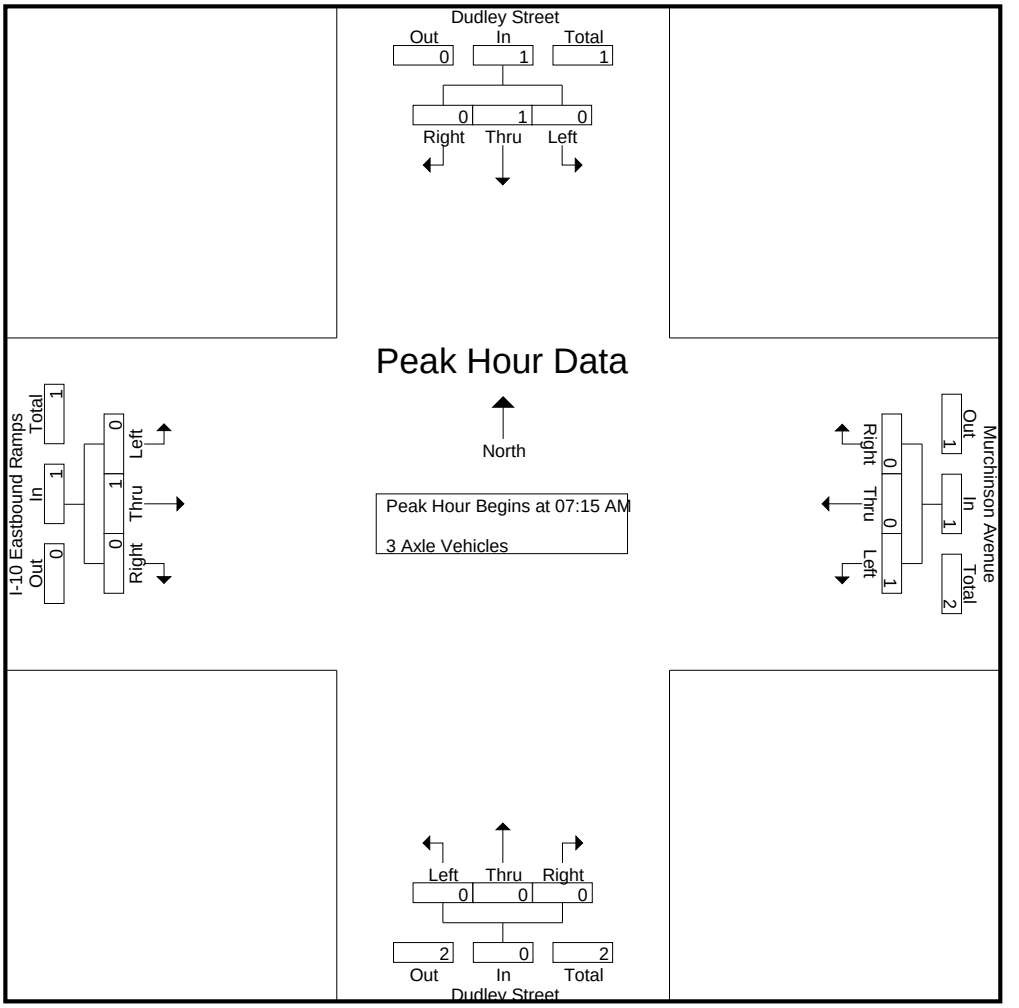

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**
+45 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	1	0	0	1	0	0	0	0	0	1	0	1
% App. Total	0	100	0		100	0	0		0	0	0		0	100	0	
PHF	.000	.250	.000	.250	.250	.000	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250

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Groups Printed- 4+ Axle Trucks

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
06:45 AM	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0	3
Total	0	1	0	1	0	0	1	1	0	2	0	2	0	0	0	0	4
07:00 AM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
07:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	2
07:45 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	3	3	5
Total	0	1	0	1	1	1	0	2	1	1	0	2	0	0	6	6	11
08:00 AM	0	0	0	0	0	1	0	1	1	0	0	1	0	1	1	2	4
08:15 AM	0	1	0	1	0	1	1	2	0	2	0	2	0	0	1	1	6
08:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	2	3
08:45 AM	1	2	0	3	0	1	0	1	2	0	0	2	0	0	0	0	6
Total	1	3	0	4	0	3	1	4	4	2	0	6	0	1	4	5	19
09:00 AM	0	2	0	2	0	1	0	1	1	2	0	3	0	0	1	1	7
09:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Grand Total	1	7	0	8	1	5	2	8	7	7	0	14	0	1	11	12	42
Apprch %	12.5	87.5	0		12.5	62.5	25		50	50	0		0	8.3	91.7		
Total %	2.4	16.7	0	19	2.4	11.9	4.8	19	16.7	16.7	0	33.3	0	2.4	26.2	28.6	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
07:30 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	1	1	2
07:45 AM	0	**1**	0	**1**	0	**1**	0	1	0	0	0	0	0	0	**3**	**3**	**5**
08:00 AM	0	0	0	0	0	1	0	1	**1**	0	0	**1**	0	**1**	1	2	4
Total Volume	0	1	0	1	1	2	0	3	1	0	0	1	0	1	7	8	13
% App. Total	0	100	0		33.3	66.7	0		100	0	0		0	12.5	87.5		
PHF	.000	.250	.000	.250	.250	.500	.000	.750	.250	.000	.000	.250	.000	.250	.583	.667	.650

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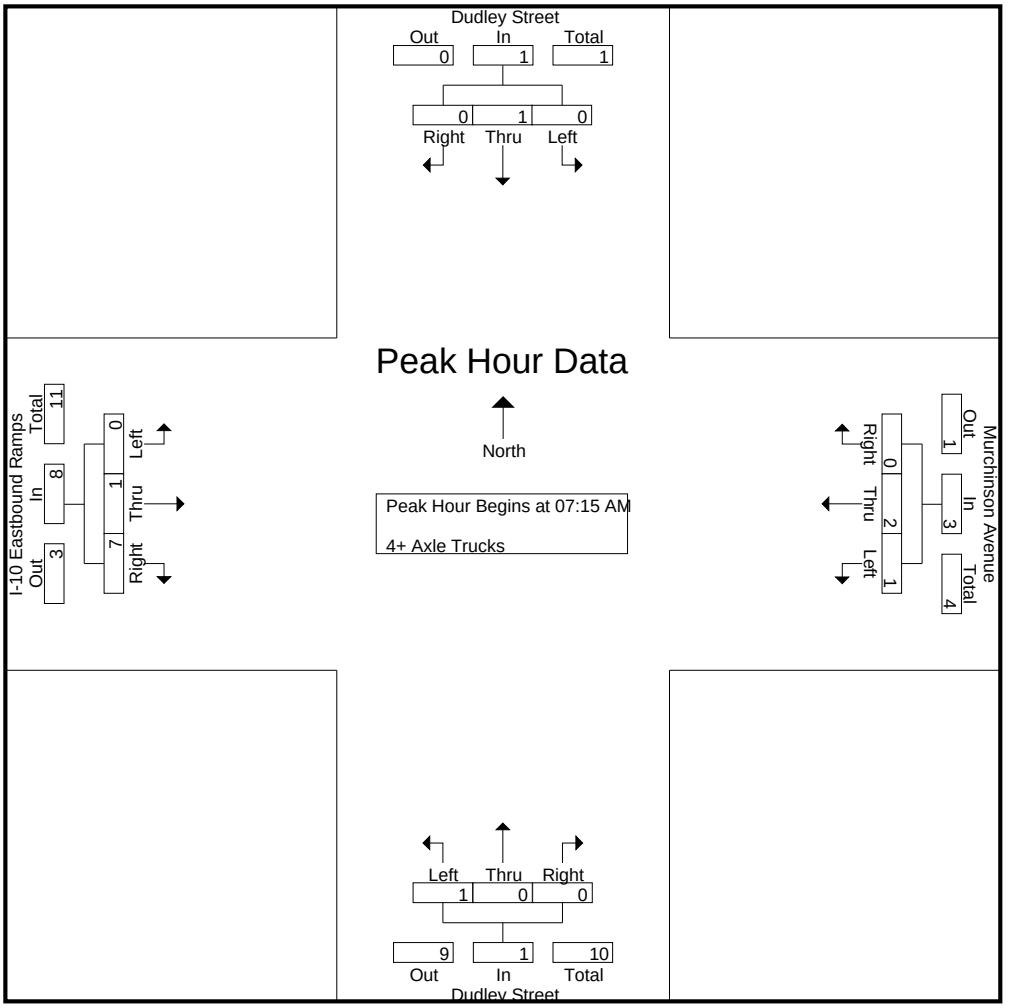

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
+15 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	1	1
+30 mins.	0	**1**	0	**1**	0	**1**	0	1	0	0	0	0	0	0	**3**	**3**
+45 mins.	0	0	0	0	0	1	0	1	**1**	0	0	**1**	0	**1**	1	2
Total Volume	0	1	0	1	1	2	0	3	1	0	0	1	0	1	7	8
% App. Total	0	100	0		33.3	66.7	0		100	0	0		0	12.5	87.5	
PHF	.000	.250	.000	.250	.250	.500	.000	.750	.250	.000	.000	.250	.000	.250	.583	.667

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
12:00 PM	0	36	9	45	1	2	3	6	32	31	1	64	9	1	29	39	154
12:15 PM	0	31	17	48	3	2	1	6	22	27	0	49	10	1	38	49	152
12:30 PM	0	28	14	42	2	1	2	5	34	37	0	71	13	1	29	43	161
12:45 PM	1	30	6	37	1	2	2	5	17	29	0	46	6	0	26	32	120
Total	1	125	46	172	7	7	8	22	105	124	1	230	38	3	122	163	587
01:00 PM	1	34	10	45	0	2	1	3	40	34	0	74	10	1	28	39	161
01:15 PM	0	26	11	37	6	0	1	7	30	30	0	60	6	0	24	30	134
01:30 PM	0	46	9	55	4	2	0	6	26	42	0	68	8	0	23	31	160
01:45 PM	0	40	3	43	0	3	1	4	39	33	1	73	16	0	32	48	168
Total	1	146	33	180	10	7	3	20	135	139	1	275	40	1	107	148	623
02:00 PM	0	50	6	56	0	2	0	2	26	31	0	57	23	0	28	51	166
02:15 PM	1	52	11	64	10	0	2	12	36	33	0	69	13	2	17	32	177
02:30 PM	0	49	14	63	29	8	11	48	37	33	0	70	7	0	29	36	217
02:45 PM	1	44	14	59	19	2	6	27	36	37	0	73	15	0	35	50	209
Total	2	195	45	242	58	12	19	89	135	134	0	269	58	2	109	169	769
Grand Total	4	466	124	594	75	26	30	131	375	397	2	774	136	6	338	480	1979
Apprch %	0.7	78.5	20.9		57.3	19.8	22.9		48.4	51.3	0.3		28.3	1.2	70.4		
Total %	0.2	23.5	6.3	30	3.8	1.3	1.5	6.6	18.9	20.1	0.1	39.1	6.9	0.3	17.1	24.3	
Passenger Vehicles	4	445	123	572	75	20	29	124	355	374	1	730	132	3	300	435	1861
% Passenger Vehicles	100	95.5	99.2	96.3	100	76.9	96.7	94.7	94.7	94.2	50	94.3	97.1	50	88.8	90.6	94
Large 2 Axle Vehicles	0	11	1	12	0	1	0	1	8	7	0	15	3	0	17	20	48
% Large 2 Axle Vehicles	0	2.4	0.8	2	0	3.8	0	0.8	2.1	1.8	0	1.9	2.2	0	5	4.2	2.4
3 Axle Vehicles	0	4	0	4	0	0	0	0	0	3	0	3	0	0	3	3	10
% 3 Axle Vehicles	0	0.9	0	0.7	0	0	0	0	0	0.8	0	0.4	0	0	0.9	0.6	0.5
4+ Axle Trucks	0	6	0	6	0	5	1	6	12	13	1	26	1	3	18	22	60
% 4+ Axle Trucks	0	1.3	0	1	0	19.2	3.3	4.6	3.2	3.3	50	3.4	0.7	50	5.3	4.6	3

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 02:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	50	6	56	0	2	0	2	26	31	0	57	**23**	0	28	**51**	166
02:15 PM	**1**	**52**	11	**64**	10	0	2	12	36	33	0	69	13	**2**	17	32	177
02:30 PM	0	49	**14**	63	**29**	**8**	**11**	**48**	**37**	33	0	70	7	0	29	36	**217**
02:45 PM	1	44	14	59	19	2	6	27	36	**37**	0	**73**	15	0	**35**	50	209
Total Volume	2	195	45	242	58	12	19	89	135	134	0	269	58	2	109	169	769
% App. Total	0.8	80.6	18.6		65.2	13.5	21.3		50.2	49.8	0		34.3	1.2	64.5		
PHF	.500	.938	.804	.945	.500	.375	.432	.464	.912	.905	.000	.921	.630	.250	.779	.828	.886

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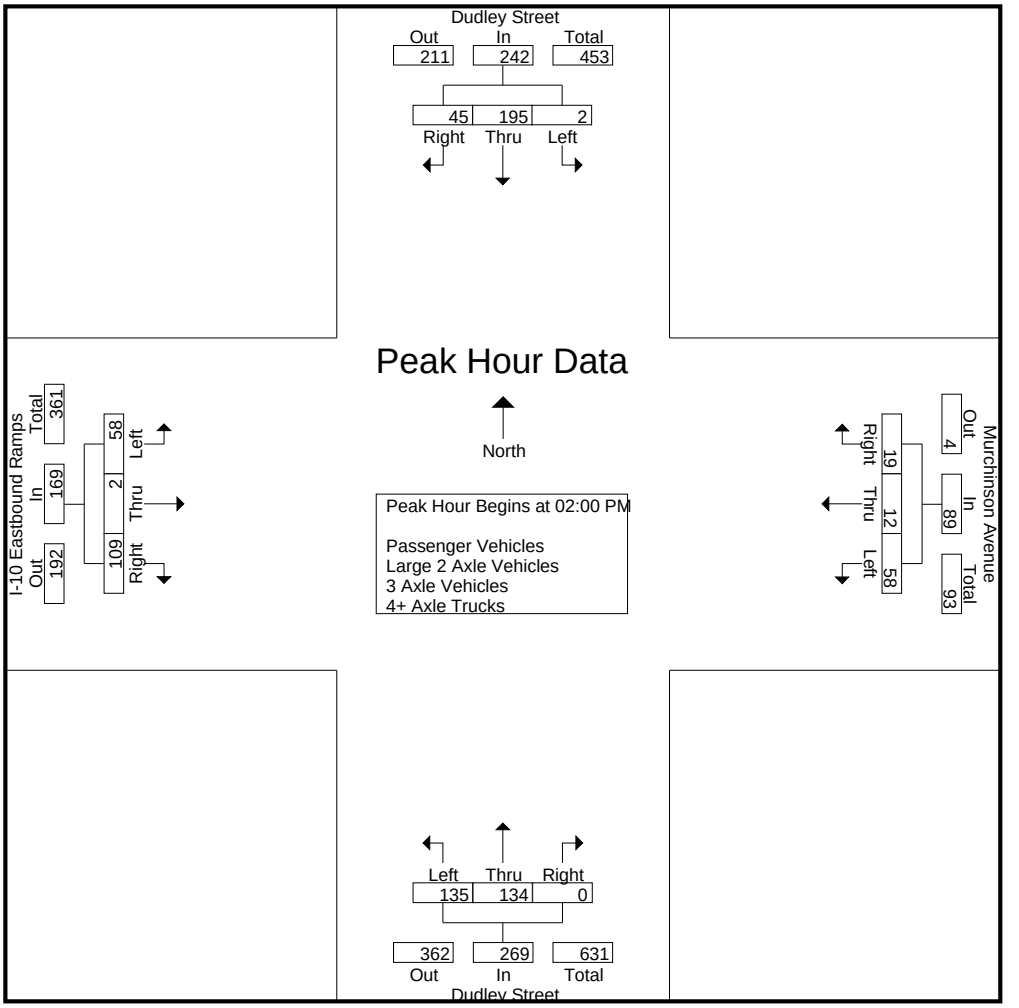

Peak Hour Analysis From 12:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM				02:00 PM				01:00 PM				02:00 PM			
+0 mins.	0	50	6	56	0	2	0	2	**40**	34	0	**74**	**23**	0	28	**51**
+15 mins.	**1**	**52**	11	**64**	10	0	2	12	30	30	0	60	13	**2**	17	32
+30 mins.	0	49	**14**	63	**29**	**8**	**11**	**48**	26	**42**	0	68	7	0	29	36
+45 mins.	1	44	14	59	19	2	6	27	39	33	**1**	73	15	0	**35**	50
Total Volume	2	195	45	242	58	12	19	89	135	139	1	275	58	2	109	169
% App. Total	0.8	80.6	18.6		65.2	13.5	21.3		49.1	50.5	0.4		34.3	1.2	64.5	
PHF	.500	.938	.804	.945	.500	.375	.432	.464	.844	.827	.250	.929	.630	.250	.779	.828

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Groups Printed- Passenger Vehicles

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
12:00 PM	0	31	9	40	1	2	3	6	31	29	1	61	9	0	27	36	143
12:15 PM	0	29	17	46	3	1	1	5	22	24	0	46	10	1	29	40	137
12:30 PM	0	28	14	42	2	0	2	4	28	35	0	63	11	1	25	37	146
12:45 PM	1	29	6	36	1	0	1	2	16	27	0	43	5	0	25	30	111
Total	1	117	46	164	7	3	7	17	97	115	1	213	35	2	106	143	537
01:00 PM	1	31	10	42	0	1	1	2	39	30	0	69	9	0	26	35	148
01:15 PM	0	25	11	36	6	0	1	7	29	29	0	58	6	0	21	27	128
01:30 PM	0	45	9	54	4	2	0	6	25	39	0	64	8	0	21	29	153
01:45 PM	0	37	3	40	0	2	1	3	38	32	0	70	16	0	27	43	156
Total	1	138	33	172	10	5	3	18	131	130	0	261	39	0	95	134	585
02:00 PM	0	48	6	54	0	2	0	2	23	31	0	54	23	0	23	46	156
02:15 PM	1	51	10	62	10	0	2	12	33	32	0	65	13	1	16	30	169
02:30 PM	0	49	14	63	29	8	11	48	35	32	0	67	7	0	26	33	211
02:45 PM	1	42	14	57	19	2	6	27	36	34	0	70	15	0	34	49	203
Total	2	190	44	236	58	12	19	89	127	129	0	256	58	1	99	158	739
Grand Total	4	445	123	572	75	20	29	124	355	374	1	730	132	3	300	435	1861
Apprch %	0.7	77.8	21.5		60.5	16.1	23.4		48.6	51.2	0.1		30.3	0.7	69		
Total %	0.2	23.9	6.6	30.7	4	1.1	1.6	6.7	19.1	20.1	0.1	39.2	7.1	0.2	16.1	23.4	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	48	6	54	0	2	0	2	23	31	0	54	**23**	0	23	46	156
02:15 PM	**1**	**51**	10	62	10	0	2	12	33	32	0	65	13	**1**	16	30	169
02:30 PM	0	49	**14**	**63**	**29**	**8**	**11**	**48**	35	32	0	67	7	0	26	33	**211**
02:45 PM	1	42	14	57	19	2	6	27	**36**	**34**	0	**70**	15	0	**34**	**49**	203
Total Volume	2	190	44	236	58	12	19	89	127	129	0	256	58	1	99	158	739
% App. Total	0.8	80.5	18.6		65.2	13.5	21.3		49.6	50.4	0		36.7	0.6	62.7		
PHF	.500	.931	.786	.937	.500	.375	.432	.464	.882	.949	.000	.914	.630	.250	.728	.806	.876

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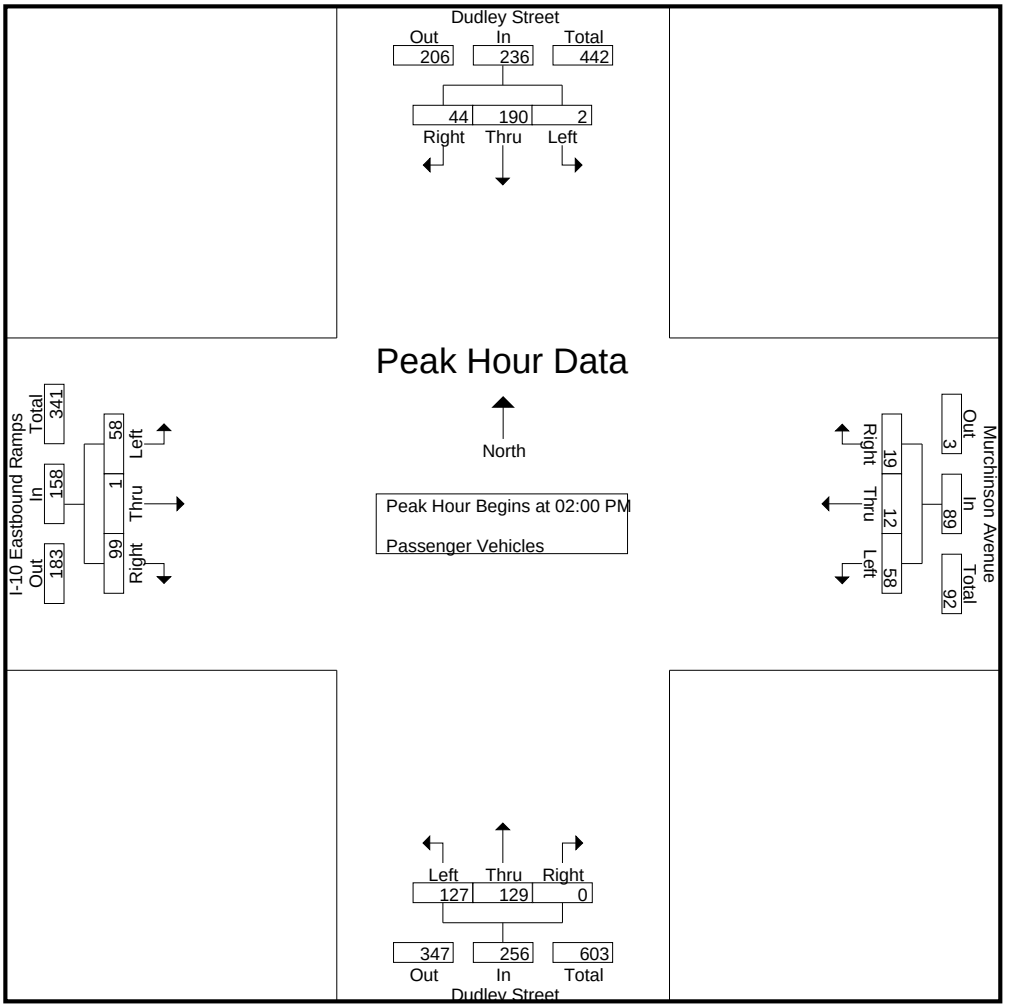

Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM				02:00 PM				02:00 PM				02:00 PM			
+0 mins.	0	48	6	54	0	2	0	2	23	31	0	54	**23**	0	23	46
+15 mins.	**1**	**51**	10	62	10	0	2	12	33	32	0	65	13	**1**	16	30
+30 mins.	0	49	**14**	**63**	**29**	**8**	**11**	**48**	35	32	0	67	7	0	26	33
+45 mins.	1	42	14	57	19	2	6	27	**36**	**34**	0	**70**	15	0	**34**	**49**
Total Volume	2	190	44	236	58	12	19	89	127	129	0	256	58	1	99	158
% App. Total	0.8	80.5	18.6		65.2	13.5	21.3		49.6	50.4	0		36.7	0.6	62.7	
PHF	.500	.931	.786	.937	.500	.375	.432	.464	.882	.949	.000	.914	.630	.250	.728	.806

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City of Pomona
N/S: Dudley Street
E/W: I-10 Eastbound Ramps/Murchinson Ave
Weather: Clear

File Name : 02_POM_Dudley_10E MD
Site Code : 05119790
Start Date : 11/14/2019

Groups Printed- Large 2 Axle Vehicles

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
12:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
12:30 PM	0	0	0	0	0	0	0	0	3	0	0	3	2	0	2	4	7
12:45 PM	0	0	0	0	0	0	0	0	1	1	0	2	1	0	1	2	4
Total	0	2	0	2	0	0	0	0	4	1	0	5	3	0	6	9	16
01:00 PM	0	3	0	3	0	1	0	1	0	1	0	1	0	0	0	0	5
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
01:30 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
01:45 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	3	3	6
Total	0	6	0	6	0	1	0	1	0	3	0	3	0	0	4	4	14
02:00 PM	0	2	0	2	0	0	0	0	2	0	0	2	0	0	3	3	7
02:15 PM	0	1	1	2	0	0	0	0	1	1	0	2	0	0	1	1	5
02:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	3	4
02:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	3	1	4	0	0	0	0	4	3	0	7	0	0	7	7	18
Grand Total	0	11	1	12	0	1	0	1	8	7	0	15	3	0	17	20	48
Apprch %	0	91.7	8.3		0	100	0		53.3	46.7	0		15	0	85		
Total %	0	22.9	2.1	25	0	2.1	0	2.1	16.7	14.6	0	31.2	6.2	0	35.4	41.7	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	**2**	0	**2**	0	0	0	0	**2**	0	0	**2**	0	0	**3**	**3**	**7**
02:15 PM	0	1	**1**	2	0	0	0	0	1	1	0	2	0	0	1	1	5
02:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	3	4
02:45 PM	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0	2
Total Volume	0	3	1	4	0	0	0	0	4	3	0	7	0	0	7	7	18
% App. Total	0	75	25		0	0	0		57.1	42.9	0		0	0	100		
PHF	.000	.375	.250	.500	.000	.000	.000	.000	.500	.375	.000	.875	.000	.000	.583	.583	.643

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City of Pomona
N/S: Dudley Street
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Weather: Clear

File Name : 02_POM_Dudley_10E MD
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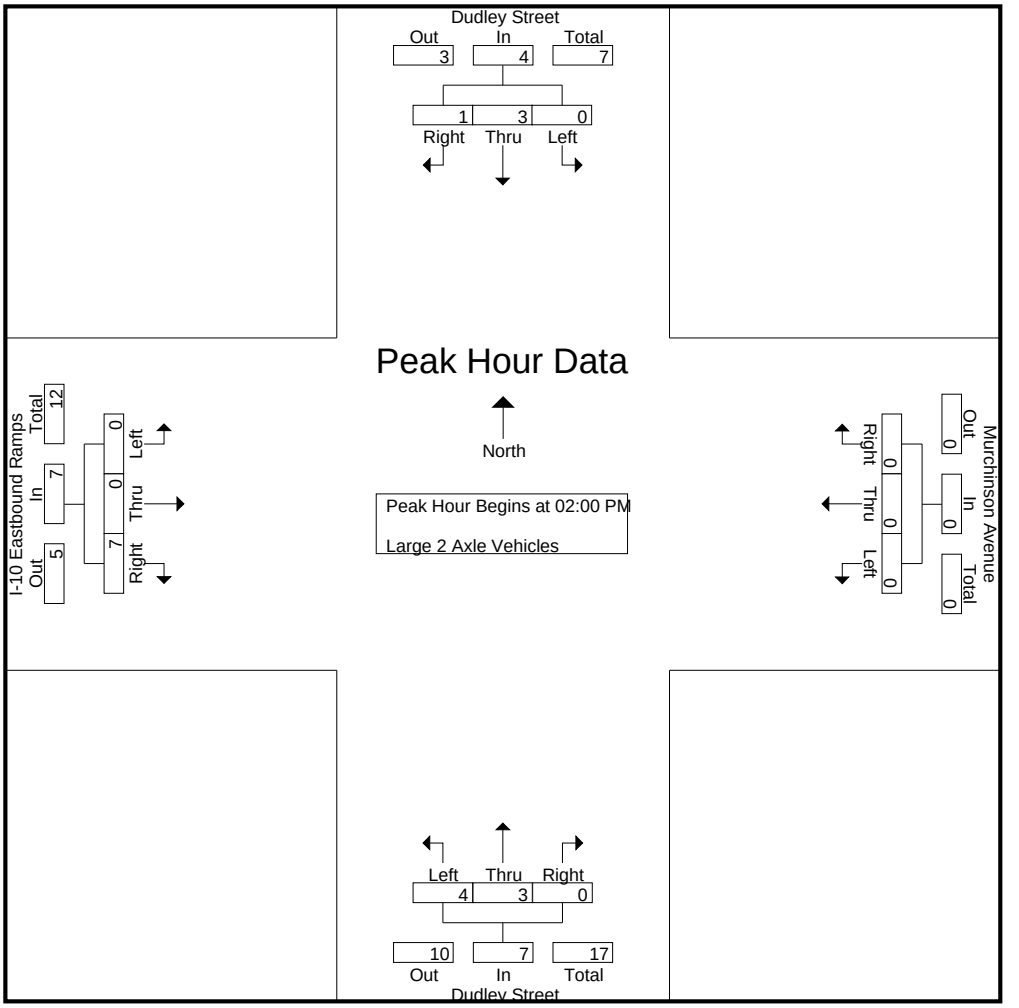

Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM				02:00 PM				02:00 PM				02:00 PM			
+0 mins.	0	**2**	0	**2**	0	0	0	0	**2**	0	0	**2**	0	0	**3**	**3**
+15 mins.	0	1	**1**	2	0	0	0	0	1	1	0	2	0	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	3
+45 mins.	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0
Total Volume	0	3	1	4	0	0	0	0	4	3	0	7	0	0	7	7
% App. Total	0	75	25		0	0	0		57.1	42.9	0		0	0	100	
PHF	.000	.375	.250	.500	.000	.000	.000	.000	.500	.375	.000	.875	.000	.000	.583	.583

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Weather: Clear

File Name : 02_POM_Dudley_10E MD
Site Code : 05119790
Start Date : 11/14/2019

Groups Printed- 3 Axle Vehicles

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
12:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1	1	3
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	1	1	3
01:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	2	0	2	0	0	1	1	4
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
02:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	3
Grand Total	0	4	0	4	0	0	0	0	0	3	0	3	0	0	3	3	10
Apprch %	0	100	0		0	0	0		0	100	0		0	0	100		
Total %	0	40	0	40	0	0	0	0	0	30	0	30	0	0	30	30	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	**1**
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
02:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	3
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250	.750

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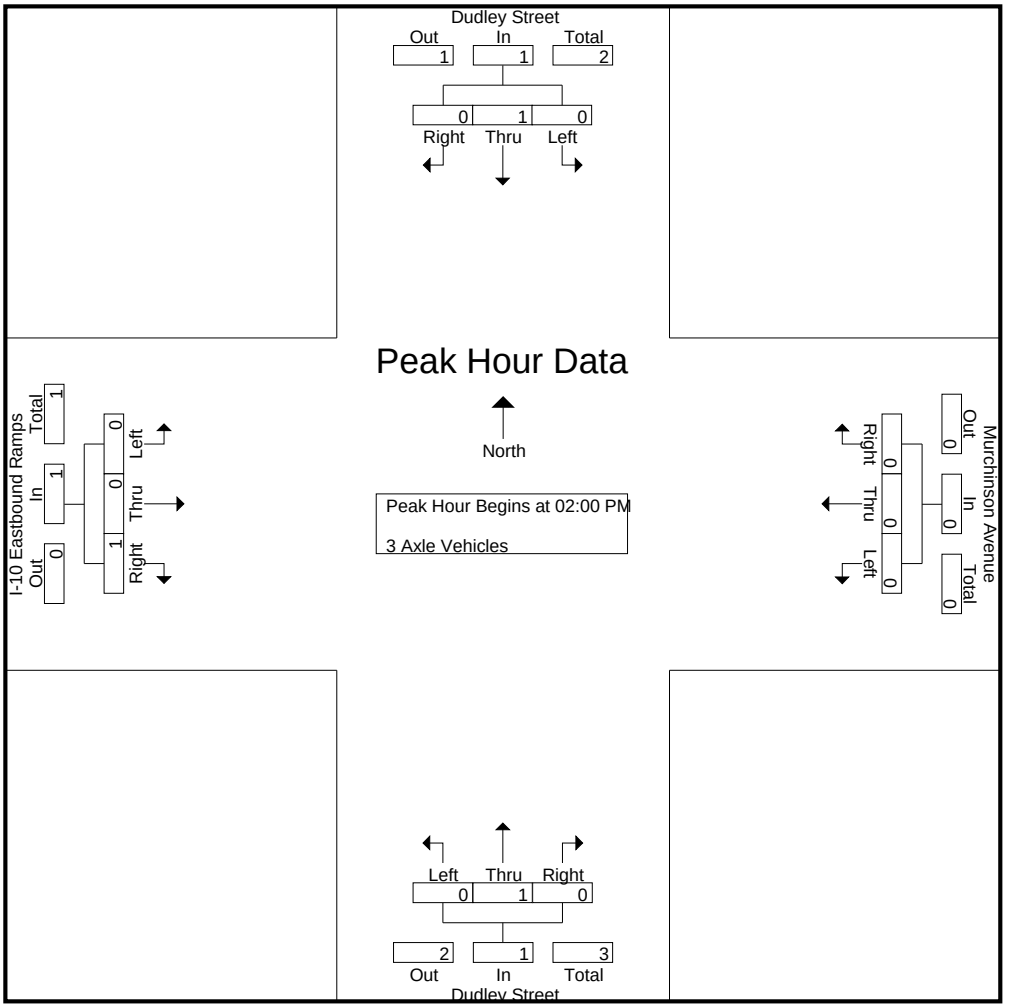

Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM				02:00 PM				02:00 PM				02:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+45 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250

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Groups Printed- 4+ Axle Trucks

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
12:00 PM	0	3	0	3	0	0	0	0	1	2	0	3	0	1	2	3	9
12:15 PM	0	1	0	1	0	1	0	1	0	3	0	3	0	0	6	6	11
12:30 PM	0	0	0	0	0	1	0	1	3	2	0	5	0	0	1	1	7
12:45 PM	0	0	0	0	0	2	1	3	0	1	0	1	0	0	0	0	4
Total	0	4	0	4	0	4	1	5	4	8	0	12	0	1	9	10	31
01:00 PM	0	0	0	0	0	0	0	0	1	3	0	4	1	1	2	4	8
01:15 PM	0	1	0	1	0	0	0	0	1	1	0	2	0	0	2	2	5
01:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2
01:45 PM	0	0	0	0	0	1	0	1	1	0	1	2	0	0	2	2	5
Total	0	1	0	1	0	1	0	1	4	4	1	9	1	1	7	9	20
02:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2
02:15 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	1	3
02:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
02:45 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	3
Total	0	1	0	1	0	0	0	0	4	1	0	5	0	1	2	3	9
Grand Total	0	6	0	6	0	5	1	6	12	13	1	26	1	3	18	22	60
Apprch %	0	100	0		0	83.3	16.7		46.2	50	3.8		4.5	13.6	81.8		
Total %	0	10	0	10	0	8.3	1.7	10	20	21.7	1.7	43.3	1.7	5	30	36.7	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	**1**	**1**	2
02:15 PM	0	0	0	0	0	0	0	0	**2**	0	0	**2**	0	**1**	0	1	**3**
02:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
02:45 PM	0	**1**	0	**1**	0	0	0	0	0	**1**	0	1	0	0	1	1	3
Total Volume	0	1	0	1	0	0	0	0	4	1	0	5	0	1	2	3	9
% App. Total	0	100	0		0	0	0		80	20	0		0	33.3	66.7		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.500	.250	.000	.625	.000	.250	.500	.750	.750

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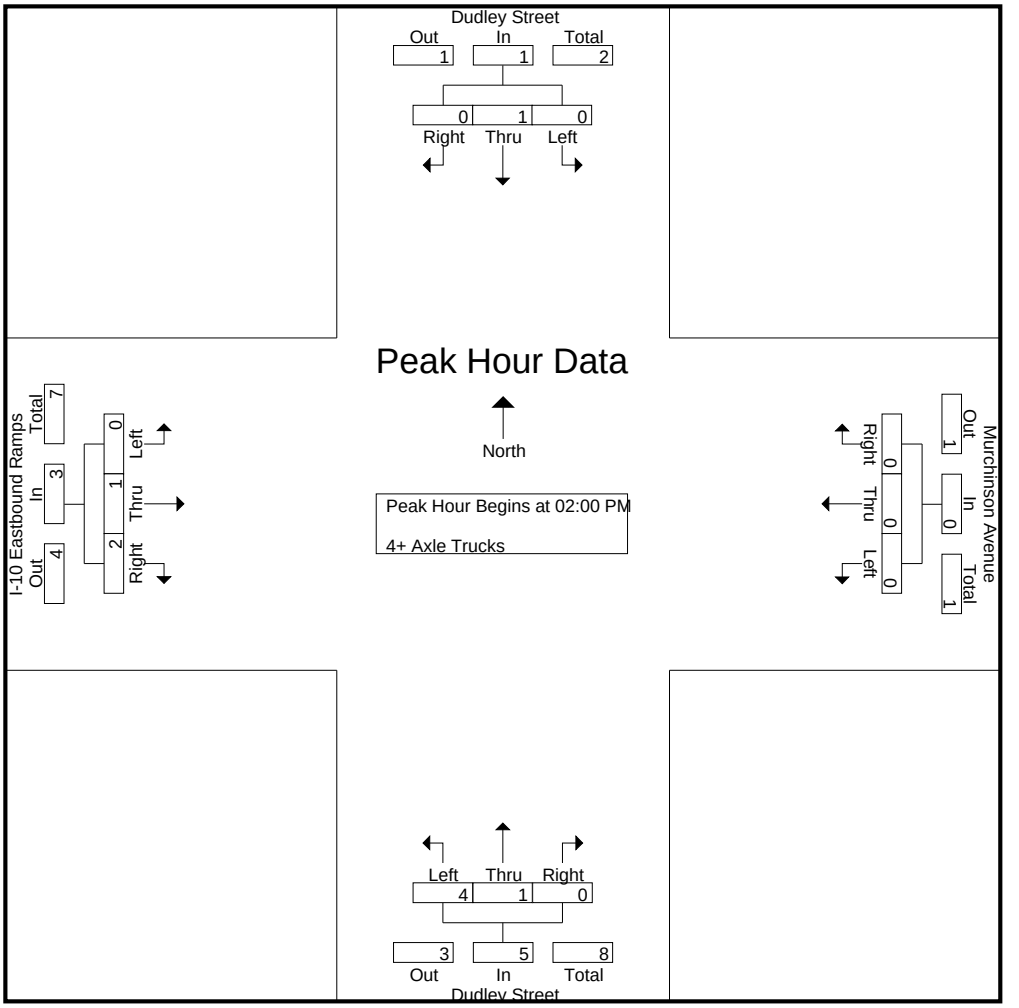

Peak Hour Analysis From 02:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM				02:00 PM				02:00 PM				02:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	**2**	0	0	**2**	0	**1**	0	1
+30 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
+45 mins.	0	**1**	0	**1**	0	0	0	0	0	**1**	0	1	0	0	1	1
Total Volume	0	1	0	1	0	0	0	0	4	1	0	5	0	1	2	3
% App. Total	0	100	0		0	0	0		80	20	0		0	33.3	66.7	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.500	.250	.000	.625	.000	.250	.500	.750

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N/S: Dudley Street
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File Name : 02_POM_Dudley_10E PM
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	3	56	18	77	38	13	12	63	41	53	0	94	12	0	33	45	279
03:15 PM	1	59	17	77	17	8	8	33	36	50	0	86	16	1	27	44	240
03:30 PM	0	46	12	58	12	2	8	22	36	52	0	88	15	0	30	45	213
03:45 PM	0	60	13	73	6	1	1	8	42	37	1	80	19	0	31	50	211
Total	4	221	60	285	73	24	29	126	155	192	1	348	62	1	121	184	943
04:00 PM	1	53	12	66	16	5	10	31	50	32	0	82	12	1	20	33	212
04:15 PM	0	57	8	65	5	3	3	11	59	50	0	109	5	2	24	31	216
04:30 PM	1	56	11	68	5	4	3	12	51	37	1	89	8	0	23	31	200
04:45 PM	1	57	13	71	0	2	2	4	47	38	0	85	9	0	23	32	192
Total	3	223	44	270	26	14	18	58	207	157	1	365	34	3	90	127	820
05:00 PM	1	49	10	60	5	0	2	7	59	41	0	100	15	1	24	40	207
05:15 PM	0	41	16	57	4	1	1	6	29	48	1	78	13	2	25	40	181
05:30 PM	2	55	12	69	5	2	2	9	37	39	1	77	13	0	19	32	187
05:45 PM	0	60	13	73	9	2	7	18	38	34	0	72	13	0	34	47	210
Total	3	205	51	259	23	5	12	40	163	162	2	327	54	3	102	159	785
Grand Total	10	649	155	814	122	43	59	224	525	511	4	1040	150	7	313	470	2548
Apprch %	1.2	79.7	19		54.5	19.2	26.3		50.5	49.1	0.4		31.9	1.5	66.6		
Total %	0.4	25.5	6.1	31.9	4.8	1.7	2.3	8.8	20.6	20.1	0.2	40.8	5.9	0.3	12.3	18.4	
Passenger Vehicles	8	625	134	767	121	33	58	212	505	500	3	1008	148	3	291	442	2429
% Passenger Vehicles	80	96.3	86.5	94.2	99.2	76.7	98.3	94.6	96.2	97.8	75	96.9	98.7	42.9	93	94	95.3
Large 2 Axle Vehicles	0	8	20	28	1	3	1	5	8	9	0	17	2	1	12	15	65
% Large 2 Axle Vehicles	0	1.2	12.9	3.4	0.8	7	1.7	2.2	1.5	1.8	0	1.6	1.3	14.3	3.8	3.2	2.6
3 Axle Vehicles	0	8	0	8	0	0	0	0	5	0	0	5	0	2	2	4	17
% 3 Axle Vehicles	0	1.2	0	1	0	0	0	0	1	0	0	0.5	0	28.6	0.6	0.9	0.7
4+ Axle Trucks	2	8	1	11	0	7	0	7	7	2	1	10	0	1	8	9	37
% 4+ Axle Trucks	20	1.2	0.6	1.4	0	16.3	0	3.1	1.3	0.4	25	1	0	14.3	2.6	1.9	1.5

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	**3**	56	**18**	**77**	**38**	**13**	**12**	**63**	41	**53**	0	**94**	12	0	**33**	45	**279**
03:15 PM	1	59	17	77	17	8	8	33	36	50	0	86	16	**1**	27	44	240
03:30 PM	0	46	12	58	12	2	8	22	36	52	0	88	15	0	30	45	213
03:45 PM	0	**60**	13	73	6	1	1	8	**42**	37	**1**	80	**19**	0	31	**50**	211
Total Volume	4	221	60	285	73	24	29	126	155	192	1	348	62	1	121	184	943
% App. Total	1.4	77.5	21.1		57.9	19	23		44.5	55.2	0.3		33.7	0.5	65.8		
PHF	.333	.921	.833	.925	.480	.462	.604	.500	.923	.906	.250	.926	.816	.250	.917	.920	.845

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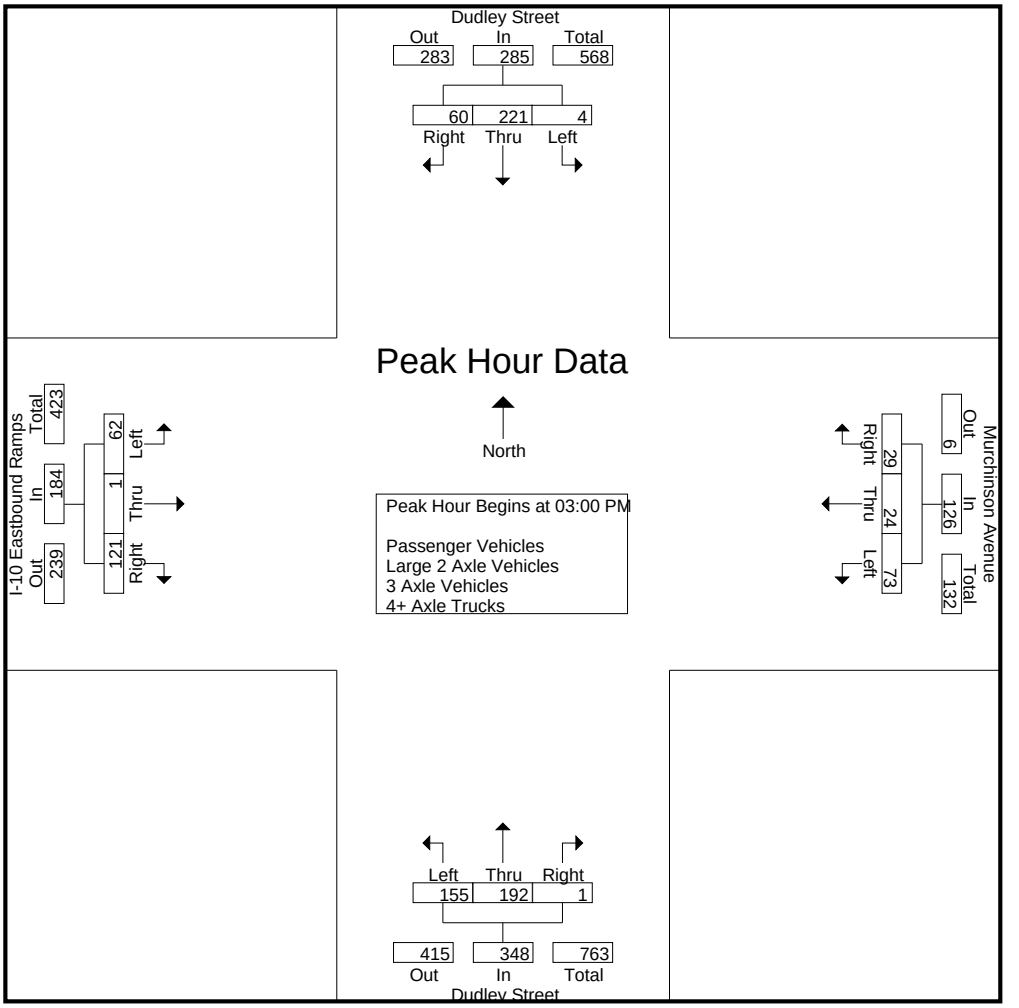

Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				04:15 PM				03:00 PM			
+0 mins.	**3**	56	**18**	**77**	**38**	**13**	**12**	**63**	**59**	**50**	0	**109**	12	0	**33**	45
+15 mins.	1	59	17	77	17	8	8	33	51	37	**1**	89	16	**1**	27	44
+30 mins.	0	46	12	58	12	2	8	22	47	38	0	85	15	0	30	45
+45 mins.	0	**60**	13	73	6	1	1	8	59	41	0	100	**19**	0	31	**50**
Total Volume	4	221	60	285	73	24	29	126	216	166	1	383	62	1	121	184
% App. Total	1.4	77.5	21.1		57.9	19	23		56.4	43.3	0.3		33.7	0.5	65.8	
PHF	.333	.921	.833	.925	.480	.462	.604	.500	.915	.830	.250	.878	.816	.250	.917	.920

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City of Pomona
N/S: Dudley Street
E/W: I-10 Eastbound Ramps/Murchinson Ave
Weather: Clear

File Name : 02_POM_Dudley_10E PM
Site Code : 05119790
Start Date : 11/14/2019
Page No : 1

Groups Printed- Passenger Vehicles

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	2	56	17	75	38	11	12	61	39	52	0	91	12	0	29	41	268
03:15 PM	1	56	15	72	16	4	8	28	33	50	0	83	15	1	26	42	225
03:30 PM	0	43	9	52	12	1	8	21	36	51	0	87	14	0	30	44	204
03:45 PM	0	59	11	70	6	1	1	8	39	35	1	75	19	0	27	46	199
Total	3	214	52	269	72	17	29	118	147	188	1	336	60	1	112	173	896
04:00 PM	1	51	11	63	16	5	10	31	48	30	0	78	12	0	17	29	201
04:15 PM	0	53	7	60	5	3	2	10	57	47	0	104	5	0	22	27	201
04:30 PM	1	55	9	65	5	3	3	11	49	37	1	87	8	0	23	31	194
04:45 PM	1	55	12	68	0	1	2	3	45	37	0	82	9	0	22	31	184
Total	3	214	39	256	26	12	17	55	199	151	1	351	34	0	84	118	780
05:00 PM	1	44	9	54	5	0	2	7	57	40	0	97	15	0	24	39	197
05:15 PM	0	40	13	53	4	1	1	6	28	48	0	76	13	2	21	36	171
05:30 PM	1	54	11	66	5	1	2	8	36	39	1	76	13	0	18	31	181
05:45 PM	0	59	10	69	9	2	7	18	38	34	0	72	13	0	32	45	204
Total	2	197	43	242	23	4	12	39	159	161	1	321	54	2	95	151	753
Grand Total	8	625	134	767	121	33	58	212	505	500	3	1008	148	3	291	442	2429
Apprch %	1	81.5	17.5		57.1	15.6	27.4		50.1	49.6	0.3		33.5	0.7	65.8		
Total %	0.3	25.7	5.5	31.6	5	1.4	2.4	8.7	20.8	20.6	0.1	41.5	6.1	0.1	12	18.2	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	**2**	56	**17**	**75**	**38**	**11**	**12**	**61**	**39**	**52**	0	**91**	12	0	29	41	**268**
03:15 PM	1	56	15	72	16	4	8	28	33	50	0	83	15	**1**	26	42	225
03:30 PM	0	43	9	52	12	1	8	21	36	51	0	87	14	0	**30**	44	204
03:45 PM	0	**59**	11	70	6	1	1	8	39	35	**1**	75	**19**	0	27	**46**	199
Total Volume	3	214	52	269	72	17	29	118	147	188	1	336	60	1	112	173	896
% App. Total	1.1	79.6	19.3		61	14.4	24.6		43.8	56	0.3		34.7	0.6	64.7		
PHF	.375	.907	.765	.897	.474	.386	.604	.484	.942	.904	.250	.923	.789	.250	.933	.940	.836

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City of Pomona
N/S: Dudley Street
E/W: I-10 Eastbound Ramps/Murchinson Ave
Weather: Clear

File Name : 02_POM_Dudley_10E PM
Site Code : 05119790
Start Date : 11/14/2019
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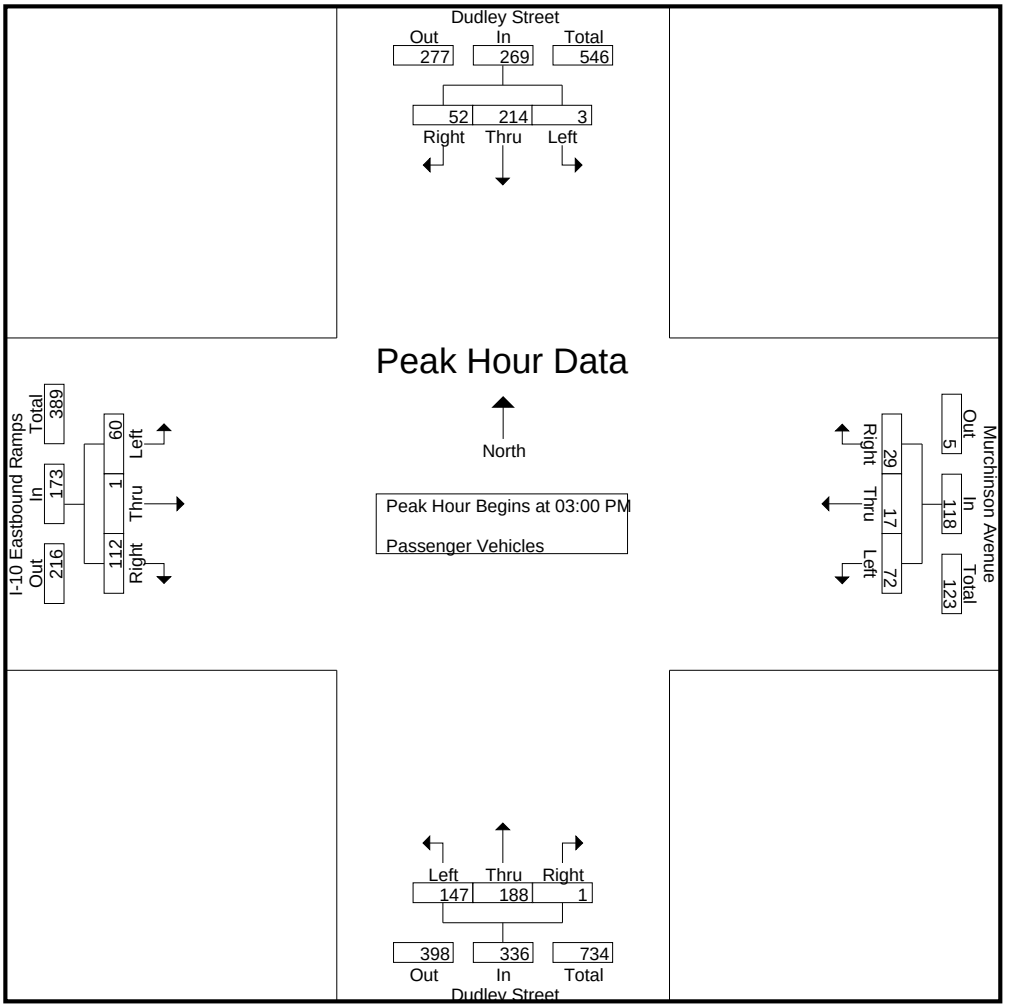

Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	**2**	56	**17**	**75**	**38**	**11**	**12**	**61**	**39**	**52**	0	**91**	12	0	29	41
+15 mins.	1	56	15	72	16	4	8	28	33	50	0	83	15	**1**	26	42
+30 mins.	0	43	9	52	12	1	8	21	36	51	0	87	14	0	**30**	44
+45 mins.	0	**59**	11	70	6	1	1	8	39	35	**1**	75	**19**	0	27	**46**
Total Volume	3	214	52	269	72	17	29	118	147	188	1	336	60	1	112	173
% App. Total	1.1	79.6	19.3		61	14.4	24.6		43.8	56	0.3		34.7	0.6	64.7	
PHF	.375	.907	.765	.897	.474	.386	.604	.484	.942	.904	.250	.923	.789	.250	.933	.940

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City of Pomona
N/S: Dudley Street
E/W: I-10 Eastbound Ramps/Murchinson Ave
Weather: Clear

File Name : 02_POM_Dudley_10E PM
Site Code : 05119790
Start Date : 11/14/2019

Groups Printed- Large 2 Axle Vehicles

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	0	1	1	0	0	0	0	1	1	0	2	0	0	1	1	4
03:15 PM	0	1	2	3	1	2	0	3	0	0	0	0	1	0	0	1	7
03:30 PM	0	1	2	3	0	0	0	0	0	1	0	1	1	0	0	1	5
03:45 PM	0	0	2	2	0	0	0	0	2	1	0	3	0	0	3	3	8
Total	0	2	7	9	1	2	0	3	3	3	0	6	2	0	4	6	24
04:00 PM	0	1	1	2	0	0	0	0	0	1	0	1	0	1	2	3	6
04:15 PM	0	2	1	3	0	0	1	1	2	3	0	5	0	0	1	1	10
04:30 PM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	1	1	0	0	0	0	1	1	0	2	0	0	1	1	4
Total	0	3	5	8	0	0	1	1	3	5	0	8	0	1	4	5	22
05:00 PM	0	1	1	2	0	0	0	0	1	1	0	2	0	0	0	0	4
05:15 PM	0	1	3	4	0	0	0	0	0	0	0	0	0	0	2	2	6
05:30 PM	0	0	1	1	0	1	0	1	1	0	0	1	0	0	1	1	4
05:45 PM	0	1	3	4	0	0	0	0	0	0	0	0	0	0	1	1	5
Total	0	3	8	11	0	1	0	1	2	1	0	3	0	0	4	4	19
Grand Total	0	8	20	28	1	3	1	5	8	9	0	17	2	1	12	15	65
Apprch %	0	28.6	71.4		20	60	20		47.1	52.9	0		13.3	6.7	80		
Total %	0	12.3	30.8	43.1	1.5	4.6	1.5	7.7	12.3	13.8	0	26.2	3.1	1.5	18.5	23.1	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	0	1	1	0	0	0	0	1	**1**	0	2	0	0	1	1	4
03:15 PM	0	**1**	**2**	**3**	**1**	**2**	0	**3**	0	0	0	0	**1**	0	0	1	7
03:30 PM	0	1	2	3	0	0	0	0	0	1	0	1	1	0	0	1	5
03:45 PM	0	0	2	2	0	0	0	0	**2**	1	0	**3**	0	0	**3**	**3**	**8**
Total Volume	0	2	7	9	1	2	0	3	3	3	0	6	2	0	4	6	24
% App. Total	0	22.2	77.8		33.3	66.7	0		50	50	0		33.3	0	66.7		
PHF	.000	.500	.875	.750	.250	.250	.000	.250	.375	.750	.000	.500	.500	.000	.333	.500	.750

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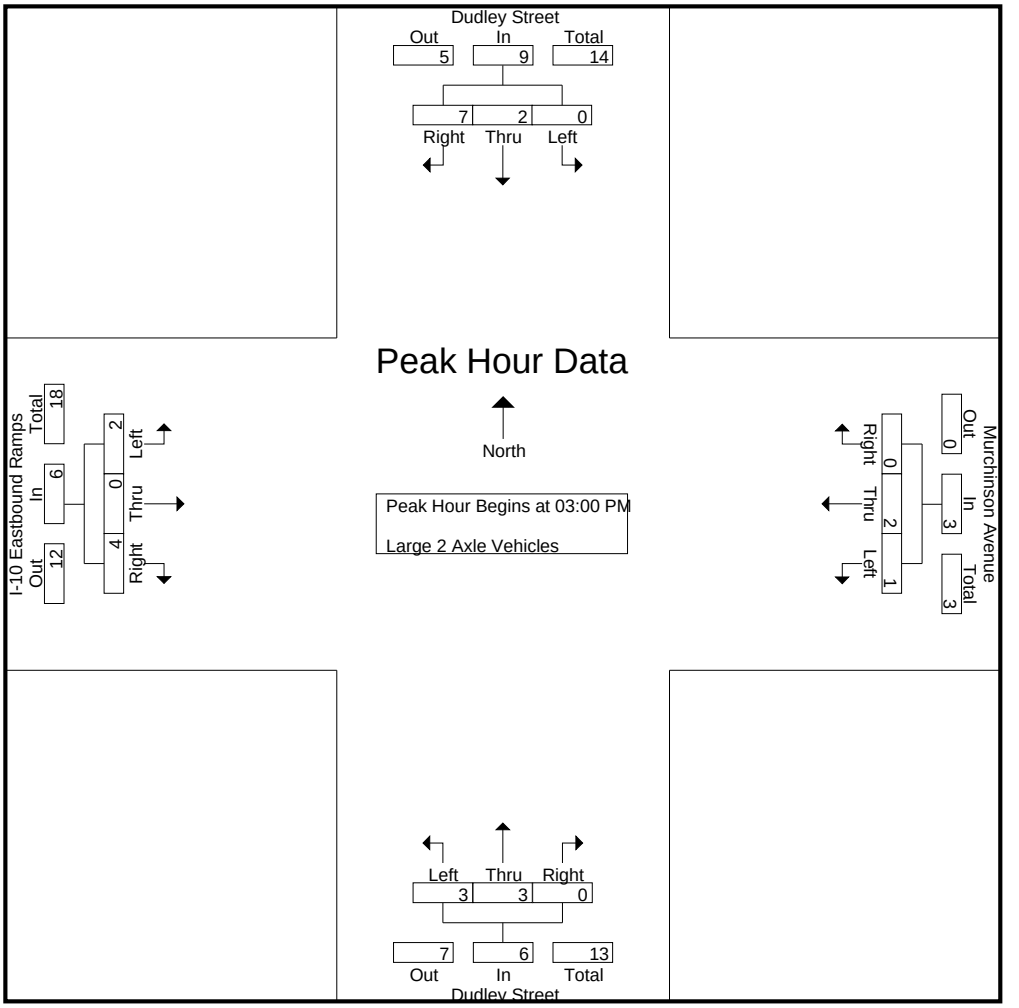
City of Pomona
N/S: Dudley Street
E/W: I-10 Eastbound Ramps/Murchinson Ave
Weather: Clear

File Name : 02_POM_Dudley_10E PM
Site Code : 05119790
Start Date : 11/14/2019
Page No : 2



Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	0	0	1	1	0	0	0	0	1	**1**	0	2	0	0	1	1
+15 mins.	0	**1**	**2**	**3**	**1**	**2**	0	**3**	0	0	0	0	**1**	0	0	1
+30 mins.	0	1	2	3	0	0	0	0	0	1	0	1	1	0	0	1
+45 mins.	0	0	2	2	0	0	0	0	**2**	1	0	**3**	0	0	**3**	**3**
Total Volume	0	2	7	9	1	2	0	3	3	3	0	6	2	0	4	6
% App. Total	0	22.2	77.8		33.3	66.7	0		50	50	0		33.3	0	66.7	
PHF	.000	.500	.875	.750	.250	.250	.000	.250	.375	.750	.000	.500	.500	.000	.333	.500

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City of Pomona
N/S: Dudley Street
E/W: I-10 Eastbound Ramps/Murchinson Ave
Weather: Clear

File Name : 02_POM_Dudley_10E PM
Site Code : 05119790
Start Date : 11/14/2019

Groups Printed- 3 Axle Vehicles

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
03:15 PM	0	2	0	2	0	0	0	0	1	0	0	1	0	0	0	0	3
03:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	4	0	0	0	0	1	0	0	1	0	0	1	1	6
04:00 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2	3
04:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	3	0	0	3	0	2	0	2	7
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	1	0	0	1	0	0	1	1	4
Grand Total	0	8	0	8	0	0	0	0	5	0	0	5	0	2	2	4	17
Apprch %	0	100	0		0	0	0		100	0	0		0	50	50		
Total %	0	47.1	0	47.1	0	0	0	0	29.4	0	0	29.4	0	11.8	11.8	23.5	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
03:15 PM	0	**2**	0	**2**	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**3**
03:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	4	0	4	0	0	0	0	1	0	0	1	0	0	1	1	6
% App. Total	0	100	0		0	0	0		100	0	0		0	0	100		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.250	.250	.500

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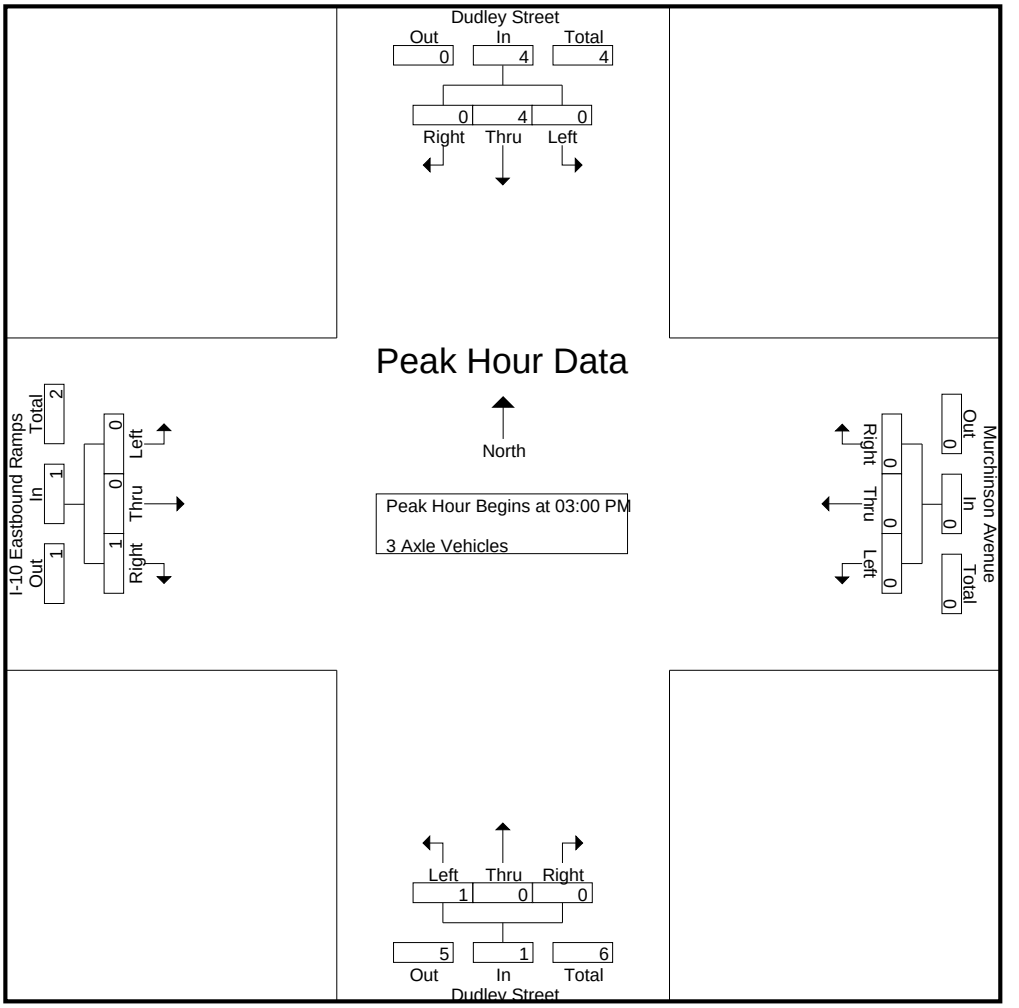
City of Pomona
N/S: Dudley Street
E/W: I-10 Eastbound Ramps/Murchinson Ave
Weather: Clear

File Name : 02_POM_Dudley_10E PM
Site Code : 05119790
Start Date : 11/14/2019
Page No : 2



Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+15 mins.	0	**2**	0	**2**	0	0	0	0	**1**	0	0	**1**	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	4	0	4	0	0	0	0	1	0	0	1	0	0	1	1
% App. Total	0	100	0		0	0	0		100	0	0		0	0	100	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.250	.250

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City of Pomona
N/S: Dudley Street
E/W: I-10 Eastbound Ramps/Murchinson Ave
Weather: Clear

File Name : 02_POM_Dudley_10E PM
Site Code : 05119790
Start Date : 11/14/2019
Page No : 1

Groups Printed- 4+ Axle Trucks

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	1	0	0	1	0	2	0	2	1	0	0	1	0	0	2	2	6
03:15 PM	0	0	0	0	0	2	0	2	2	0	0	2	0	0	1	1	5
03:30 PM	0	1	1	2	0	1	0	1	0	0	0	0	0	0	0	0	3
03:45 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	1	1	3
Total	1	1	1	3	0	5	0	5	4	1	0	5	0	0	4	4	17
04:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	3
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
04:30 PM	0	1	0	1	0	1	0	1	1	0	0	1	0	0	0	0	3
04:45 PM	0	1	0	1	0	1	0	1	1	0	0	1	0	0	0	0	3
Total	0	4	0	4	0	2	0	2	2	1	0	3	0	0	2	2	11
05:00 PM	0	3	0	3	0	0	0	0	1	0	0	1	0	1	0	1	5
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	2
05:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	1	3	0	4	0	0	0	0	1	0	1	2	0	1	2	3	9
Grand Total	2	8	1	11	0	7	0	7	7	2	1	10	0	1	8	9	37
Apprch %	18.2	72.7	9.1		0	100	0		70	20	10		0	11.1	88.9		
Total %	5.4	21.6	2.7	29.7	0	18.9	0	18.9	18.9	5.4	2.7	27	0	2.7	21.6	24.3	

	Dudley Street Southbound				Murchinson Avenue Westbound				Dudley Street Northbound				I-10 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	**1**	0	0	1	0	**2**	0	**2**	1	0	0	1	0	0	**2**	**2**	**6**
03:15 PM	0	0	0	0	0	2	0	2	**2**	0	0	**2**	0	0	1	1	5
03:30 PM	0	**1**	**1**	**2**	0	1	0	1	0	0	0	0	0	0	0	0	3
03:45 PM	0	0	0	0	0	0	0	0	1	**1**	0	2	0	0	1	1	3
Total Volume	1	1	1	3	0	5	0	5	4	1	0	5	0	0	4	4	17
% App. Total	33.3	33.3	33.3		0	100	0		80	20	0		0	0	100		
PHF	.250	.250	.250	.375	.000	.625	.000	.625	.500	.250	.000	.625	.000	.000	.500	.500	.708

Counts Unlimited
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City of Pomona
N/S: Dudley Street
E/W: I-10 Eastbound Ramps/Murchinson Ave
Weather: Clear

File Name : 02_POM_Dudley_10E PM
Site Code : 05119790
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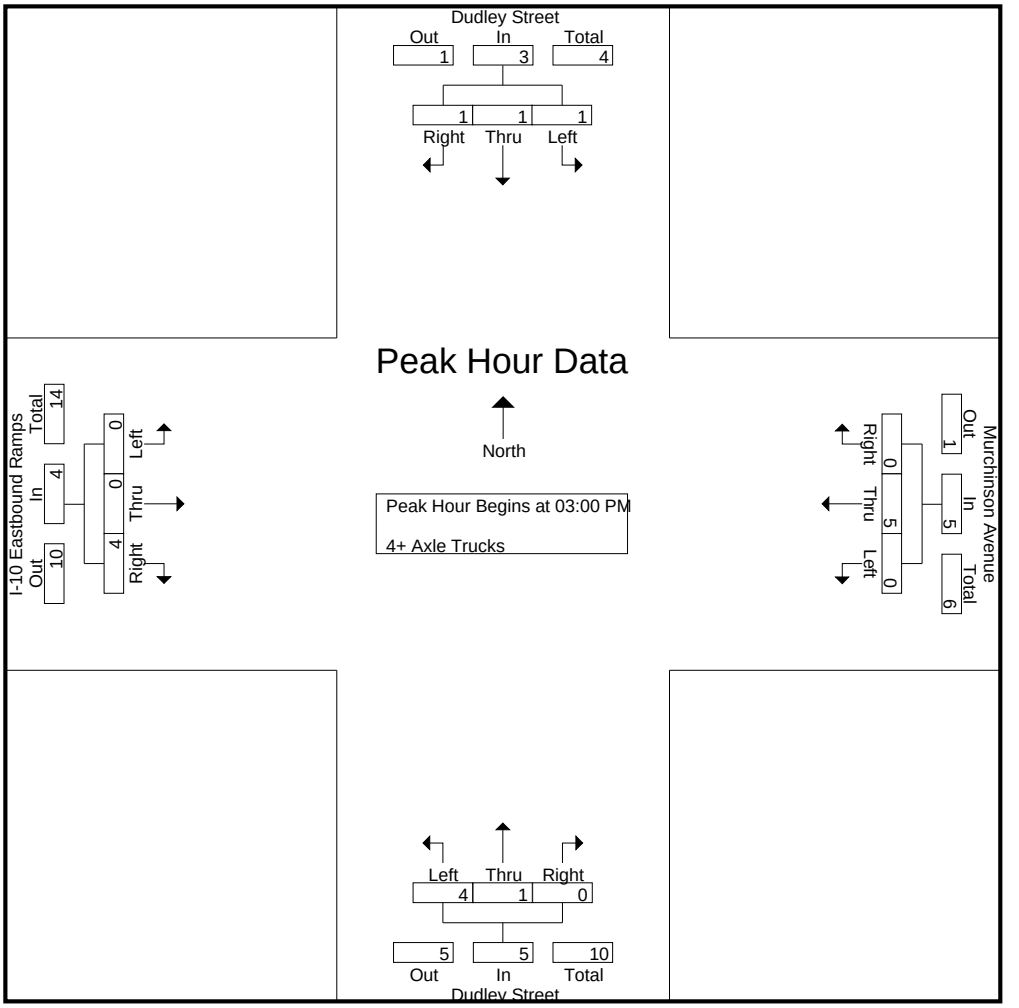

Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	**1**	0	0	1	0	**2**	0	**2**	1	0	0	1	0	0	**2**	**2**
+15 mins.	0	0	0	0	0	2	0	2	**2**	0	0	**2**	0	0	1	1
+30 mins.	0	**1**	**1**	**2**	0	1	0	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	1	**1**	0	2	0	0	1	1
Total Volume	1	1	1	3	0	5	0	5	4	1	0	5	0	0	4	4
% App. Total	33.3	33.3	33.3		0	100	0		80	20	0		0	0	100	
PHF	.250	.250	.250	.375	.000	.625	.000	.625	.500	.250	.000	.625	.000	.000	.500	.500

Location: Pomona
N/S: Dudley Street
E/W: I-10 EB Ramps/Murchinson Ave

Date: 11/14/2019
Day: Thursday

PEDESTRIANS

	North Leg Dudley Street	East Leg Murchinson Ave	South Leg Dudley Street	West Leg I-10 Eastbound Ramps	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:30 AM	0	0	0	0	0
6:45 AM	0	1	0	1	2
7:00 AM	0	0	0	1	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	2	0	0	2
8:00 AM	0	0	0	0	0
8:15 AM	1	0	0	0	1
8:30 AM	0	1	1	4	6
8:45 AM	0	1	0	0	1
9:00 AM	0	1	0	2	3
9:15 AM	0	0	0	0	0
TOTAL VOLUMES:	1	6	1	8	16

	North Leg Dudley Street	East Leg Murchinson Ave	South Leg Dudley Street	West Leg I-10 Eastbound Ramps	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
12:00 PM	0	0	0	0	0
12:15 PM	0	0	0	0	0
12:30 PM	0	0	0	1	1
12:45 PM	0	0	0	0	0
1:00 PM	0	0	0	0	0
1:15 PM	0	1	0	0	1
1:30 PM	0	0	0	0	0
1:45 PM	0	0	0	0	0
2:00 PM	0	1	0	0	1
2:15 PM	0	1	0	0	1
2:30 PM	0	0	0	0	0
2:45 PM	0	0	0	2	2
TOTAL VOLUMES:	0	3	0	3	6

	North Leg Dudley Street	East Leg Murchinson Ave	South Leg Dudley Street	West Leg I-10 Eastbound Ramps	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
3:00 PM	0	1	0	1	2
3:15 PM	0	2	1	4	7
3:30 PM	0	2	0	1	3
3:45 PM	0	1	0	1	2
4:00 PM	0	0	0	0	0
4:15 PM	0	2	0	0	2
4:30 PM	0	0	0	0	0
4:45 PM	0	1	0	0	1
5:00 PM	0	1	0	1	2
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	1	1
5:45 PM	0	0	0	1	1
TOTAL VOLUMES:	0	10	1	10	21

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Location: Pomona
N/S: Dudley Street
E/W: I-10 EB Ramps/Murchinson Ave

Date: 11/14/2019
Day: Thursday

BICYCLES

	Southbound Dudley Street			Westbound Murchinson Ave			Northbound Dudley Street			Eastbound I-10 Eastbound Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
9:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES:	1	2	0	1	0	0	1	2	0	0	0	0	7

	Southbound Dudley Street			Westbound Murchinson Ave			Northbound Dudley Street			Eastbound I-10 Eastbound Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
12:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	2	0	0	0	0	0	1	0	0	0	0	3

	Southbound Dudley Street			Westbound Murchinson Ave			Northbound Dudley Street			Eastbound I-10 Eastbound Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	1	1	0	0	0	0	0	0	0	0	0	0	2
3:45 PM	1	0	0	0	0	0	0	1	0	0	0	0	2
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	2	2	0	0	0	1	0	3	0	0	0	0	8

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City of Pomona
N/S: Dudley Street
E/W: Murchinson Avenue
Weather: Clear

File Name : 03_POM_Dudley_Murchinson AM
Site Code : 05119790
Start Date : 11/14/2019
Page No : 1

Groups Printed- Total Volume

	Dudley Street Southbound			Murchinson Avenue Westbound			Dudley Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
06:30 AM	2	43	45	2	8	10	76	9	85	140
06:45 AM	8	51	59	6	8	14	68	3	71	144
Total	10	94	104	8	16	24	144	12	156	284
07:00 AM	4	51	55	5	7	12	64	6	70	137
07:15 AM	1	62	63	6	8	14	69	5	74	151
07:30 AM	6	92	98	9	7	16	100	3	103	217
07:45 AM	7	150	157	6	0	6	88	4	92	255
Total	18	355	373	26	22	48	321	18	339	760
08:00 AM	6	115	121	0	0	0	90	0	90	211
08:15 AM	5	48	53	2	1	3	75	3	78	134
08:30 AM	4	36	40	6	5	11	59	5	64	115
08:45 AM	3	47	50	1	3	4	58	3	61	115
Total	18	246	264	9	9	18	282	11	293	575
09:00 AM	3	46	49	4	7	11	40	4	44	104
09:15 AM	3	48	51	2	4	6	52	5	57	114
Grand Total	52	789	841	49	58	107	839	50	889	1837
Apprch %	6.2	93.8		45.8	54.2		94.4	5.6		
Total %	2.8	43	45.8	2.7	3.2	5.8	45.7	2.7	48.4	

	Dudley Street Southbound			Murchinson Avenue Westbound			Dudley Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	1	62	63	6	**8**	14	69	**5**	74	151
07:30 AM	6	92	98	**9**	7	**16**	**100**	3	**103**	217
07:45 AM	**7**	**150**	**157**	6	0	6	88	4	92	**255**
08:00 AM	6	115	121	0	0	0	90	0	90	211
Total Volume	20	419	439	21	15	36	347	12	359	834
% App. Total	4.6	95.4		58.3	41.7		96.7	3.3		
PHF	.714	.698	.699	.583	.469	.563	.868	.600	.871	.818

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Site Code : 05119790
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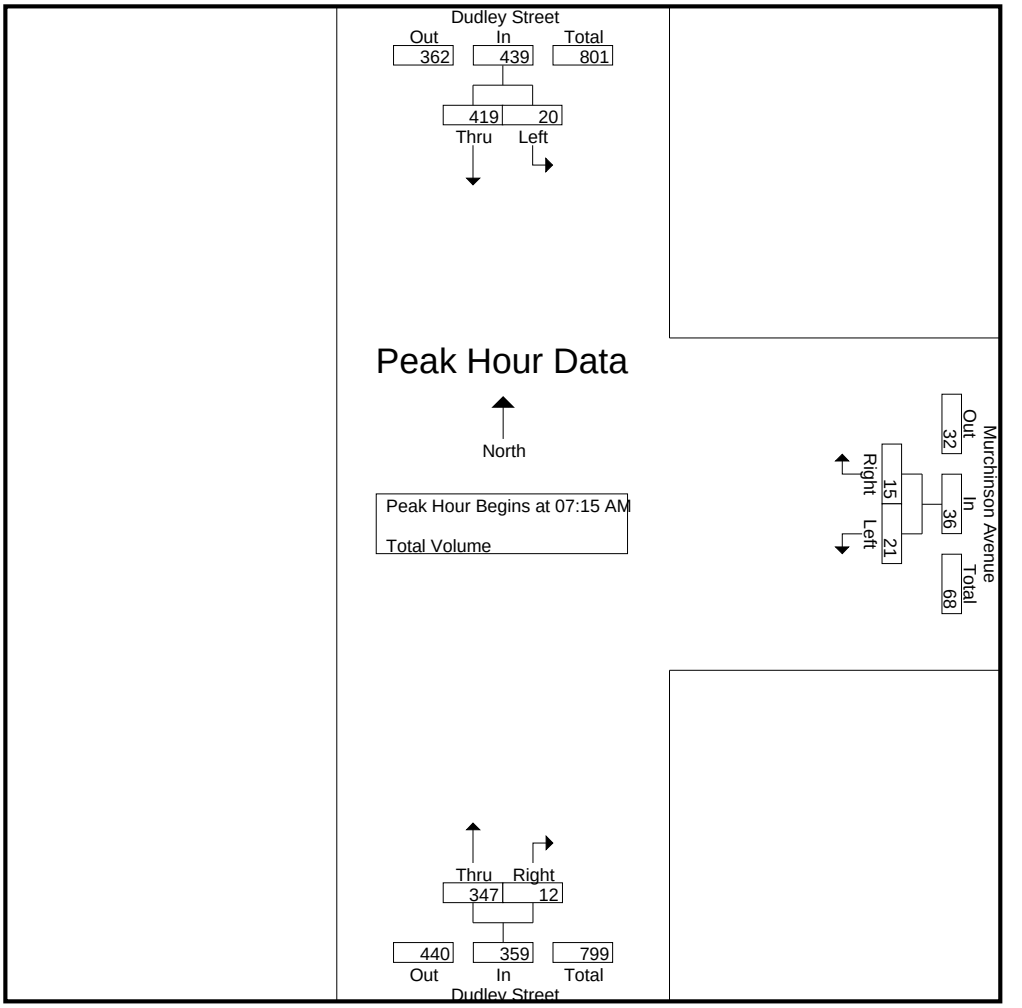

Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			06:45 AM			07:30 AM		
+0 mins.	1	62	63	6	**8**	14	**100**	3	**103**
+15 mins.	6	92	98	5	7	12	88	**4**	92
+30 mins.	**7**	**150**	**157**	6	8	14	90	0	90
+45 mins.	6	115	121	**9**	7	**16**	75	3	78
Total Volume	20	419	439	26	30	56	353	10	363
% App. Total	4.6	95.4		46.4	53.6		97.2	2.8	
PHF	.714	.698	.699	.722	.938	.875	.883	.625	.881

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City of Pomona
N/S: Dudley Street
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Weather: Clear

File Name : 03_POM_Dudley_Murchinson MD
Site Code : 05119790
Start Date : 11/14/2019

Groups Printed- Total Volume

	Dudley Street Southbound			Murchinson Avenue Westbound			Dudley Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
12:00 PM	5	59	64	2	9	11	53	7	60	135
12:15 PM	2	66	68	3	3	6	47	5	52	126
12:30 PM	3	57	60	6	6	12	61	6	67	139
12:45 PM	3	53	56	2	1	3	43	2	45	104
Total	13	235	248	13	19	32	204	20	224	504
01:00 PM	2	58	60	5	2	7	42	7	49	116
01:15 PM	5	59	64	7	10	17	68	7	75	156
01:30 PM	5	67	72	5	6	11	65	5	70	153
01:45 PM	4	75	79	8	0	8	57	3	60	147
Total	16	259	275	25	18	43	232	22	254	572
02:00 PM	3	62	65	6	4	10	66	2	68	143
02:15 PM	4	94	98	5	4	9	74	5	79	186
02:30 PM	9	83	92	6	2	8	76	8	84	184
02:45 PM	8	109	117	13	11	24	83	8	91	232
Total	24	348	372	30	21	51	299	23	322	745
Grand Total	53	842	895	68	58	126	735	65	800	1821
Apprch %	5.9	94.1		54	46		91.9	8.1		
Total %	2.9	46.2	49.1	3.7	3.2	6.9	40.4	3.6	43.9	

	Dudley Street Southbound			Murchinson Avenue Westbound			Dudley Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 02:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	3	62	65	6	4	10	66	2	68	143
02:15 PM	4	94	98	5	4	9	74	5	79	186
02:30 PM	**9**	83	92	6	2	8	76	**8**	84	184
02:45 PM	8	**109**	**117**	**13**	**11**	**24**	**83**	8	**91**	**232**
Total Volume	24	348	372	30	21	51	299	23	322	745
% App. Total	6.5	93.5		58.8	41.2		92.9	7.1		
PHF	.667	.798	.795	.577	.477	.531	.901	.719	.885	.803

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File Name : 03_POM_Dudley_Murchinson MD
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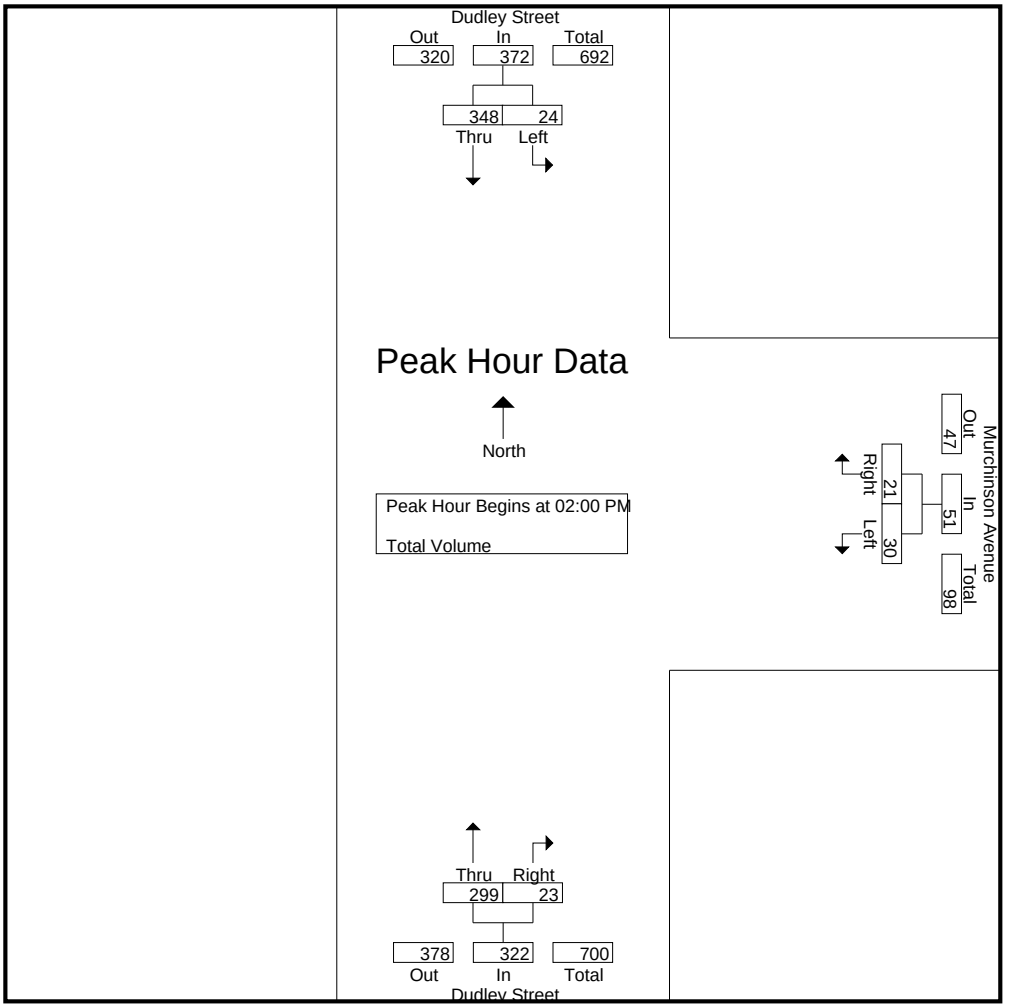

Peak Hour Analysis From 12:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM			02:00 PM			02:00 PM		
+0 mins.	3	62	65	6	4	10	66	2	68
+15 mins.	4	94	98	5	4	9	74	5	79
+30 mins.	**9**	83	92	6	2	8	76	**8**	84
+45 mins.	8	**109**	**117**	**13**	**11**	**24**	**83**	8	**91**
Total Volume	24	348	372	30	21	51	299	23	322
% App. Total	6.5	93.5		58.8	41.2		92.9	7.1	
PHF	.667	.798	.795	.577	.477	.531	.901	.719	.885

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City of Pomona
N/S: Dudley Street
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Weather: Clear

File Name : 03_POM_Dudley_Murchinson PM
Site Code : 05119790
Start Date : 11/14/2019

Groups Printed- Total Volume

	Dudley Street Southbound			Murchinson Avenue Westbound			Dudley Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
03:00 PM	9	99	108	7	4	11	72	3	75	194
03:15 PM	6	76	82	3	7	10	69	8	77	169
03:30 PM	8	85	93	6	10	16	78	4	82	191
03:45 PM	0	88	88	10	9	19	79	6	85	192
Total	23	348	371	26	30	56	298	21	319	746
04:00 PM	6	79	85	16	2	18	82	11	93	196
04:15 PM	6	84	90	9	9	18	101	2	103	211
04:30 PM	3	80	83	5	4	9	83	8	91	183
04:45 PM	5	75	80	8	8	16	80	7	87	183
Total	20	318	338	38	23	61	346	28	374	773
05:00 PM	6	75	81	7	2	9	98	7	105	195
05:15 PM	6	67	73	13	4	17	74	5	79	169
05:30 PM	2	68	70	6	5	11	73	4	77	158
05:45 PM	8	94	102	9	7	16	61	8	69	187
Total	22	304	326	35	18	53	306	24	330	709
Grand Total	65	970	1035	99	71	170	950	73	1023	2228
Apprch %	6.3	93.7		58.2	41.8		92.9	7.1		
Total %	2.9	43.5	46.5	4.4	3.2	7.6	42.6	3.3	45.9	

	Dudley Street Southbound			Murchinson Avenue Westbound			Dudley Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:30 PM										
03:30 PM	**8**	85	**93**	6	**10**	16	78	4	82	191
03:45 PM	0	**88**	88	10	9	**19**	79	6	85	192
04:00 PM	6	79	85	**16**	2	18	82	**11**	93	196
04:15 PM	6	84	90	9	9	18	**101**	2	**103**	**211**
Total Volume	20	336	356	41	30	71	340	23	363	790
% App. Total	5.6	94.4		57.7	42.3		93.7	6.3		
PHF	.625	.955	.957	.641	.750	.934	.842	.523	.881	.936

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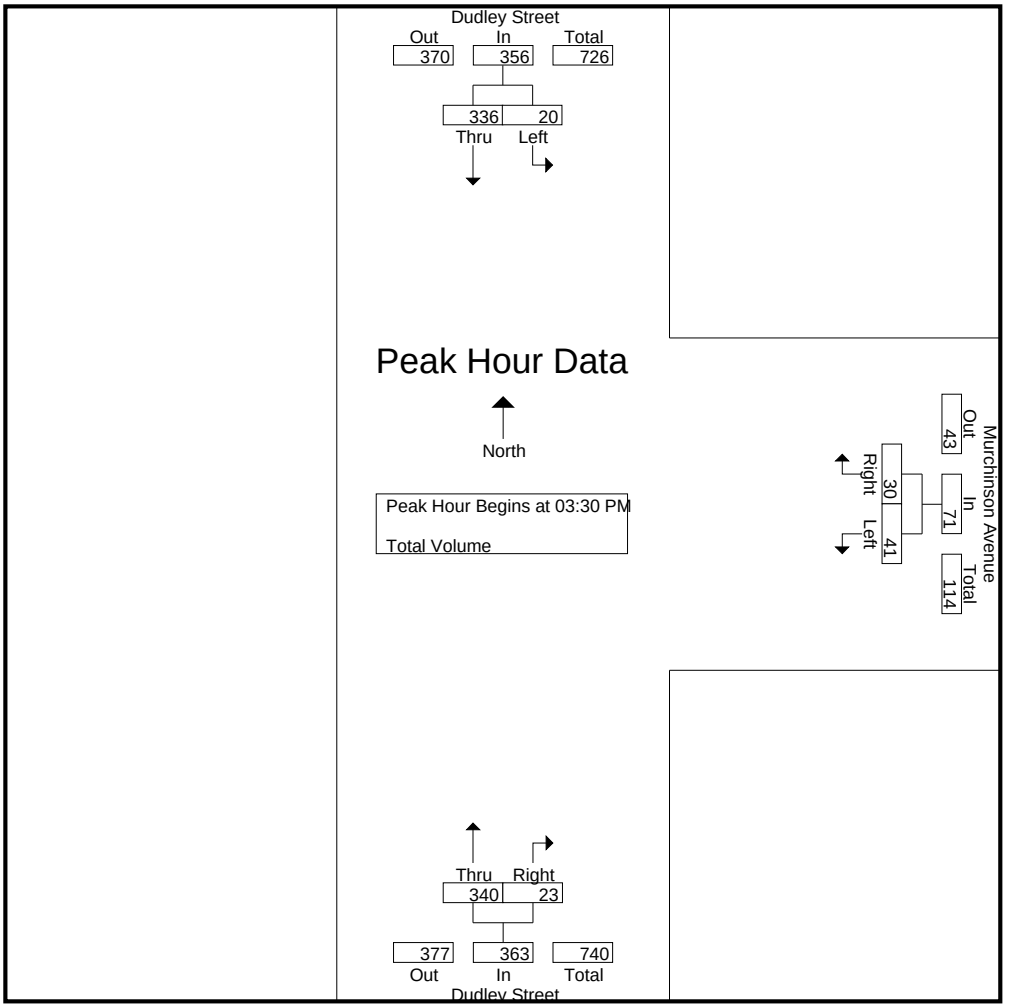

Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM			03:30 PM			04:15 PM		
+0 mins.	**9**	**99**	**108**	6	**10**	16	**101**	2	103
+15 mins.	6	76	82	10	9	**19**	83	**8**	91
+30 mins.	8	85	93	**16**	2	18	80	7	87
+45 mins.	0	88	88	9	9	18	98	7	**105**
Total Volume	23	348	371	41	30	71	362	24	386
% App. Total	6.2	93.8		57.7	42.3		93.8	6.2	
PHF	.639	.879	.859	.641	.750	.934	.896	.750	.919

Location: Pomona
N/S: Dudley Street
E/W: Murchinson Avenue

Date: 11/14/2019
Day: Thursday

PEDESTRIANS

	North Leg Dudley Street Pedestrians	East Leg Murchinson Avenue Pedestrians	South Leg Dudley Street Pedestrians	West Leg Dead End Pedestrians	
6:30 AM	0	0	0	0	0
6:45 AM	0	1	0	0	1
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	1	0	0	1
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
TOTAL VOLUMES:	0	2	0	0	2

	North Leg Dudley Street Pedestrians	East Leg Murchinson Avenue Pedestrians	South Leg Dudley Street Pedestrians	West Leg Dead End Pedestrians	
12:00 PM	0	0	0	0	0
12:15 PM	1	0	0	0	1
12:30 PM	0	0	0	0	0
12:45 PM	0	0	0	0	0
1:00 PM	0	0	0	0	0
1:15 PM	6	1	0	0	7
1:30 PM	0	0	0	0	0
1:45 PM	0	0	0	0	0
2:00 PM	0	1	0	0	1
2:15 PM	0	1	0	0	1
2:30 PM	0	0	0	0	0
2:45 PM	0	1	0	0	1
TOTAL VOLUMES:	7	4	0	0	11

	North Leg Dudley Street Pedestrians	East Leg Murchinson Avenue Pedestrians	South Leg Dudley Street Pedestrians	West Leg Dead End Pedestrians	
3:00 PM	0	1	0	0	1
3:15 PM	0	1	0	0	1
3:30 PM	0	0	0	0	0
3:45 PM	0	1	0	0	1
4:00 PM	0	0	0	0	0
4:15 PM	0	2	0	0	2
4:30 PM	0	0	0	0	0
4:45 PM	0	1	0	0	1
5:00 PM	0	1	0	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	7	0	0	7

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Location: Pomona
N/S: Dudley Street
E/W: Murchinson Avenue

Date: 11/14/2019
Day: Thursday

BICYCLES

	Southbound Dudley Street			Westbound Murchinson Avenue			Northbound Dudley Street			Eastbound Dead End			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	0	0	0	0	1	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
8:45 AM	0	1	0	1	0	0	0	1	0	0	0	0	3
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	4	0	1	0	0	0	2	1	0	0	0	8

	Southbound Dudley Street			Westbound Murchinson Avenue			Northbound Dudley Street			Eastbound Dead End			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
12:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
TOTAL VOLUMES:	0	2	0	2	0	0	0	1	0	0	0	0	5

	Southbound Dudley Street			Westbound Murchinson Avenue			Northbound Dudley Street			Eastbound Dead End			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	0	1	0	2	0	0	0	0	4

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City of Pomona
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E/W: Murchinson Avenue
Weather: Clear

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Site Code : 05119790
Start Date : 11/14/2019
Page No : 1

Groups Printed- Total Volume

	Project Driveway Southbound				Cortez Elementary School Driveway Westbound				Murchinson Avenue Northbound				Murchinson Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
06:45 AM	0	0	0	0	0	3	0	3	1	0	0	1	0	1	1	2	6
Total	0	0	0	0	0	3	0	3	3	0	0	3	0	1	1	2	8
07:00 AM	0	0	0	0	1	4	0	5	1	0	0	1	0	0	1	1	7
07:15 AM	0	0	0	0	1	18	0	19	0	0	0	0	0	0	0	0	19
07:30 AM	0	0	0	0	18	59	0	77	1	0	0	1	0	0	1	1	79
07:45 AM	0	0	0	0	19	82	0	101	3	0	0	3	0	1	5	6	110
Total	0	0	0	0	39	163	0	202	5	0	0	5	0	1	7	8	215
08:00 AM	0	0	0	0	16	89	0	105	3	0	0	3	0	0	3	3	111
08:15 AM	0	0	0	0	2	13	0	15	3	0	0	3	0	0	1	1	19
08:30 AM	0	0	0	0	2	1	0	3	1	0	0	1	0	0	1	1	5
08:45 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	1	4
Total	0	0	0	0	20	103	0	123	10	0	0	10	0	0	6	6	139
09:00 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3
09:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	59	274	0	333	18	0	0	18	0	2	14	16	367
Apprch %	0	0	0		17.7	82.3	0		100	0	0		0	12.5	87.5		
Total %	0	0	0	0	16.1	74.7	0	90.7	4.9	0	0	4.9	0	0.5	3.8	4.4	

	Project Driveway Southbound				Cortez Elementary School Driveway Westbound				Murchinson Avenue Northbound				Murchinson Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	1	18	0	19	0	0	0	0	0	0	0	0	19
07:30 AM	0	0	0	0	18	59	0	77	1	0	0	1	0	0	1	1	79
07:45 AM	0	0	0	0	**19**	82	0	101	**3**	0	0	**3**	0	**1**	**5**	**6**	110
08:00 AM	0	0	0	0	16	**89**	0	**105**	3	0	0	3	0	0	3	3	**111**
Total Volume	0	0	0	0	54	248	0	302	7	0	0	7	0	1	9	10	319
% App. Total	0	0	0		17.9	82.1	0		100	0	0		0	10	90		
PHF	.000	.000	.000	.000	.711	.697	.000	.719	.583	.000	.000	.583	.000	.250	.450	.417	.718

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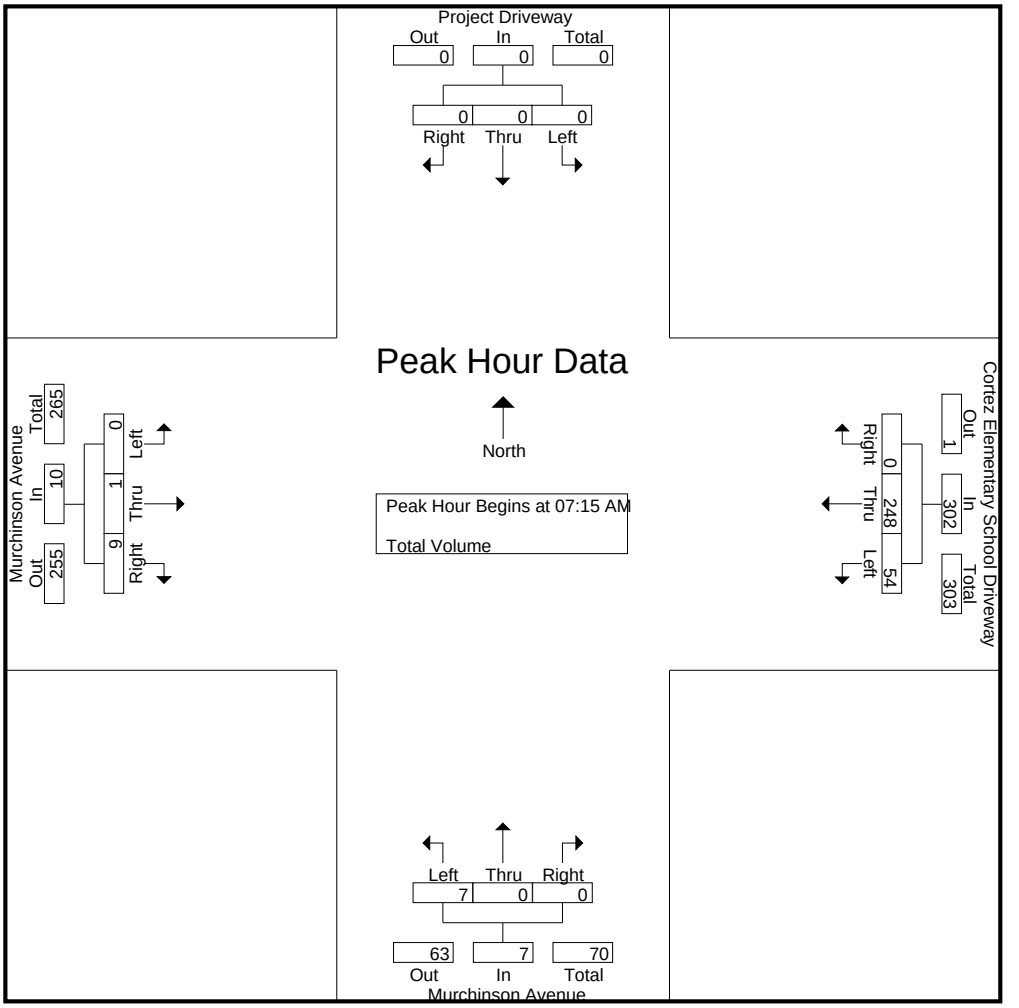

Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	06:30 AM				07:15 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	1	18	0	19	1	0	0	1	0	0	1	1
+15 mins.	0	0	0	0	18	59	0	77	**3**	0	0	**3**	0	**1**	**5**	**6**
+30 mins.	0	0	0	0	**19**	82	0	101	3	0	0	3	0	0	3	3
+45 mins.	0	0	0	0	16	**89**	0	**105**	3	0	0	3	0	0	1	1
Total Volume	0	0	0	0	54	248	0	302	10	0	0	10	0	1	10	11
% App. Total	0	0	0		17.9	82.1	0		100	0	0		0	9.1	90.9	
PHF	.000	.000	.000	.000	.711	.697	.000	.719	.833	.000	.000	.833	.000	.250	.500	.458

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File Name : 04_POM_Project DW_Murchinson MD
Site Code : 05119790
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Groups Printed- Total Volume

	Project Driveway Southbound					Cortez Elementary School Driveway Westbound					Murchinson Avenue Northbound					Murchinson Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
12:00 PM	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	0	0	2	0	2	0	8	8
12:15 PM	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	0	1	0	0	1	0	8	8
12:30 PM	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	0	0	1	0	1	0	5	5
12:45 PM	0	0	0	0	0	0	2	0	0	2	3	0	0	0	3	0	0	1	0	1	0	6	6
Total	0	0	0	0	0	0	16	0	0	16	6	0	0	0	6	0	1	4	0	5	0	27	27
01:00 PM	0	0	0	0	0	2	1	0	0	3	2	0	0	0	2	0	1	1	0	2	0	7	7
01:15 PM	0	0	0	0	0	3	7	0	0	10	0	0	0	0	0	0	0	0	0	0	0	10	10
01:30 PM	0	0	0	0	0	3	4	0	0	7	1	0	0	0	1	0	0	0	0	0	0	8	8
01:45 PM	0	0	0	0	0	3	7	0	0	10	1	0	0	0	1	0	1	1	0	2	0	13	13
Total	0	0	0	0	0	11	19	0	0	30	4	0	0	0	4	0	2	2	0	4	0	38	38
02:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
02:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	3	0	3	0	6	6
02:30 PM	0	0	0	0	0	0	46	0	0	46	1	0	0	0	1	0	0	1	0	1	0	48	48
02:45 PM	0	0	0	0	0	2	16	0	0	18	3	0	0	0	3	0	1	0	0	1	0	22	22
Total	0	0	0	0	0	2	67	0	0	69	4	0	0	0	4	0	1	4	0	5	0	78	78
Grand Total	0	0	0	0	0	13	102	0	0	115	14	0	0	0	14	0	4	10	0	14	0	143	143
Apprch %	0	0	0			11.3	88.7	0			100	0	0			0	28.6	71.4					
Total %	0	0	0		0	9.1	71.3	0		80.4	9.8	0	0		9.8	0	2.8	7		9.8	0	100	

	Project Driveway Southbound				Cortez Elementary School Driveway Westbound				Murchinson Avenue Northbound				Murchinson Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 02:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
02:15 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	**3**	**3**	6
02:30 PM	0	0	0	0	0	**46**	0	**46**	1	0	0	1	0	0	1	1	**48**
02:45 PM	0	0	0	0	**2**	16	0	18	**3**	0	0	**3**	0	**1**	0	1	22
Total Volume	0	0	0	0	2	67	0	69	4	0	0	4	0	1	4	5	78
% App. Total	0	0	0		2.9	97.1	0		100	0	0		0	20	80		
PHF	.000	.000	.000	.000	.250	.364	.000	.375	.333	.000	.000	.333	.000	.250	.333	.417	.406

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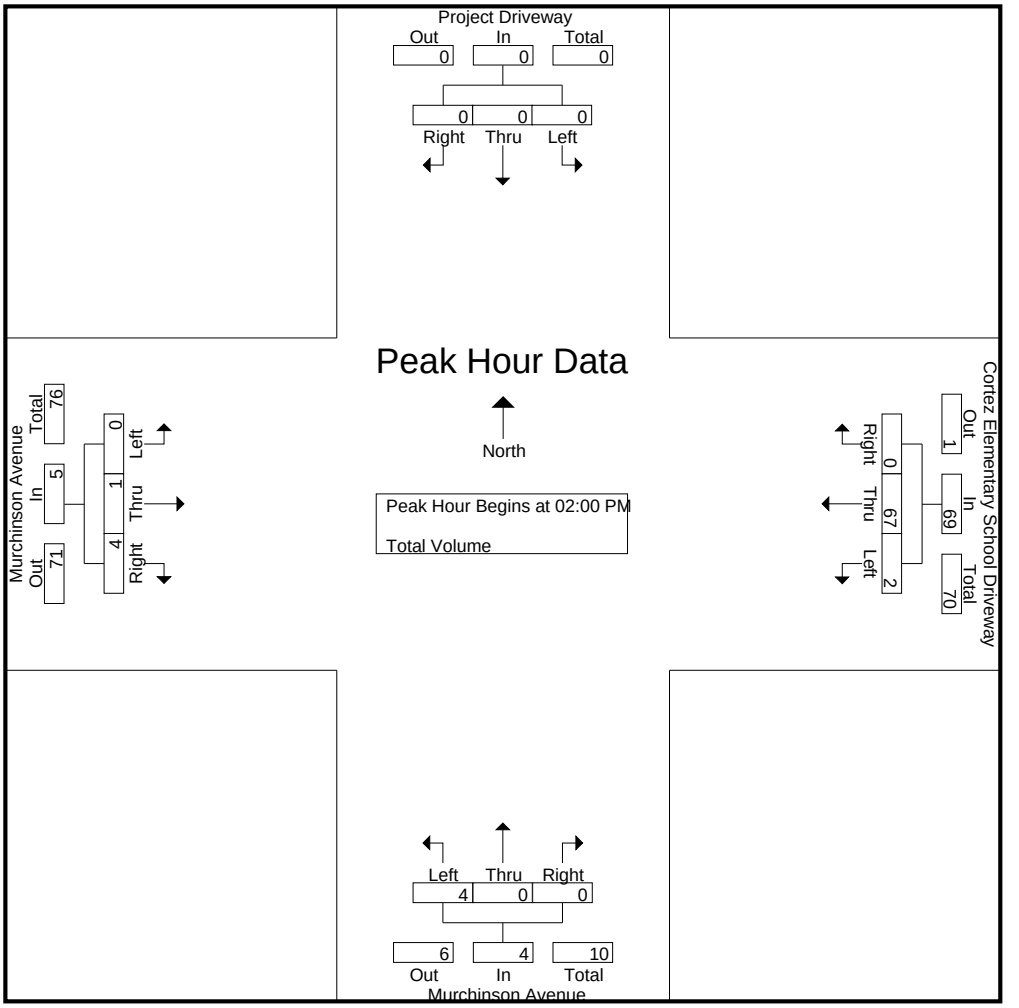

Peak Hour Analysis From 12:00 PM to 02:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM				02:00 PM				12:15 PM				01:45 PM			
+0 mins.	0	0	0	0	0	2	0	2	1	0	0	1	0	**1**	1	2
+15 mins.	0	0	0	0	0	3	0	3	1	0	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	**46**	0	**46**	**3**	0	0	**3**	0	0	**3**	**3**
+45 mins.	0	0	0	0	**2**	16	0	18	2	0	0	2	0	0	1	1
Total Volume	0	0	0	0	2	67	0	69	7	0	0	7	0	1	5	6
% App. Total	0	0	0		2.9	97.1	0		100	0	0		0	16.7	83.3	
PHF	.000	.000	.000	.000	.250	.364	.000	.375	.583	.000	.000	.583	.000	.250	.417	.500

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Site Code : 05119790
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Groups Printed- Total Volume

	Project Driveway Southbound				Cortez Elementary School Driveway Westbound				Murchinson Avenue Northbound				Murchinson Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	0	0	0	7	63	0	70	4	0	0	4	0	2	1	3	77
03:15 PM	0	0	0	0	3	39	0	42	3	0	0	3	0	1	2	3	48
03:30 PM	0	0	0	0	0	18	0	18	1	0	0	1	0	0	0	0	19
03:45 PM	0	0	0	0	0	5	0	5	1	0	0	1	0	0	1	1	7
Total	0	0	0	0	10	125	0	135	9	0	0	9	0	3	4	7	151
04:00 PM	0	0	0	0	6	30	0	36	1	0	0	1	0	1	1	2	39
04:15 PM	0	0	0	0	2	9	0	11	1	0	0	1	0	1	1	2	14
04:30 PM	0	0	0	0	0	12	0	12	1	0	0	1	0	0	2	2	15
04:45 PM	0	0	0	0	2	2	0	4	2	0	0	2	0	1	1	2	8
Total	0	0	0	0	10	53	0	63	5	0	0	5	0	3	5	8	76
05:00 PM	0	0	0	0	0	5	0	5	2	0	0	2	0	0	2	2	9
05:15 PM	0	0	0	0	2	6	0	8	0	0	0	0	0	0	3	3	11
05:30 PM	0	0	0	0	1	8	0	9	1	0	0	1	0	1	2	3	13
05:45 PM	0	0	0	0	4	18	0	22	0	0	0	0	0	0	0	0	22
Total	0	0	0	0	7	37	0	44	3	0	0	3	0	1	7	8	55
Grand Total	0	0	0	0	27	215	0	242	17	0	0	17	0	7	16	23	282
Apprch %	0	0	0		11.2	88.8	0		100	0	0		0	30.4	69.6		
Total %	0	0	0	0	9.6	76.2	0	85.8	6	0	0	6	0	2.5	5.7	8.2	

	Project Driveway Southbound				Cortez Elementary School Driveway Westbound				Murchinson Avenue Northbound				Murchinson Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	0	0	0	**7**	**63**	0	**70**	**4**	0	0	**4**	0	**2**	1	**3**	**77**
03:15 PM	0	0	0	0	3	39	0	42	3	0	0	3	0	1	**2**	3	48
03:30 PM	0	0	0	0	0	18	0	18	1	0	0	1	0	0	0	0	19
03:45 PM	0	0	0	0	0	5	0	5	1	0	0	1	0	0	1	1	7
Total Volume	0	0	0	0	10	125	0	135	9	0	0	9	0	3	4	7	151
% App. Total	0	0	0		7.4	92.6	0		100	0	0		0	42.9	57.1		
PHF	.000	.000	.000	.000	.357	.496	.000	.482	.563	.000	.000	.563	.000	.375	.500	.583	.490

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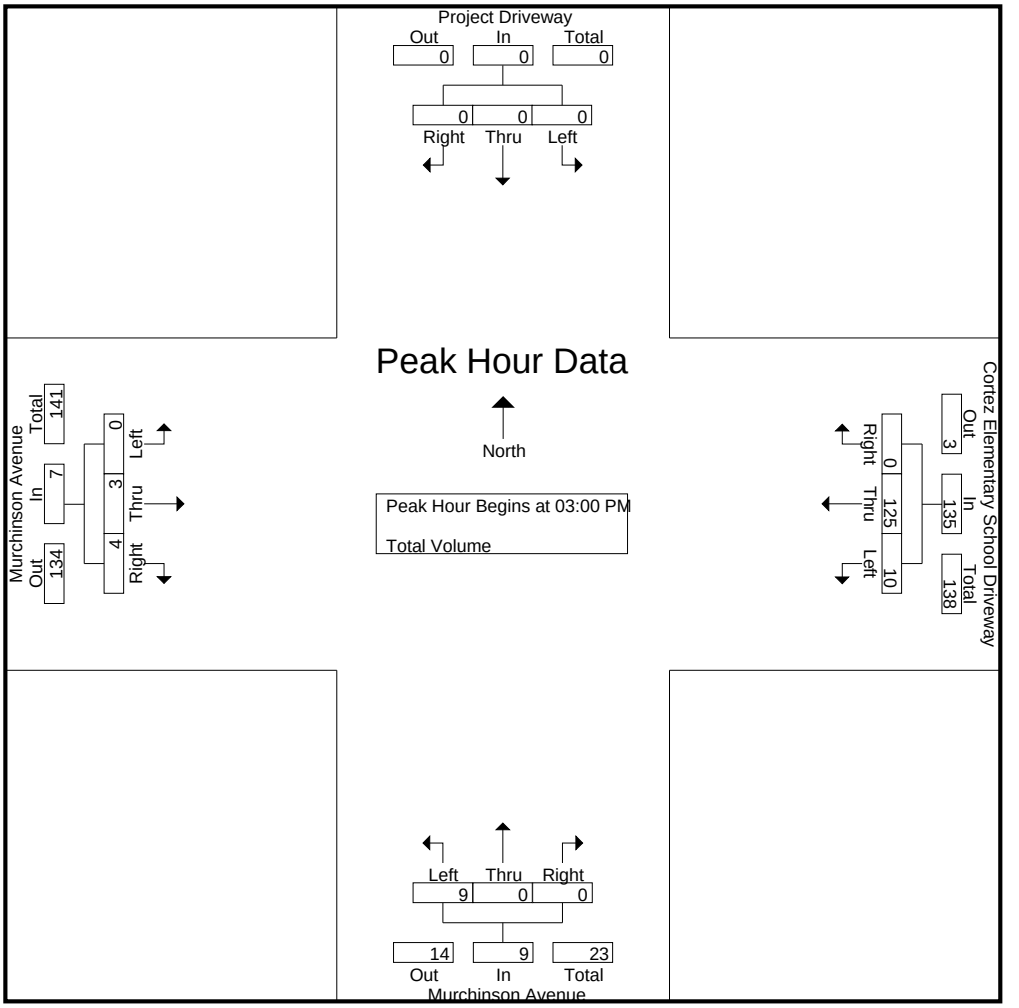

Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				03:00 PM				04:45 PM			
+0 mins.	0	0	0	0	**7**	**63**	0	**70**	**4**	0	0	**4**	0	**1**	1	2
+15 mins.	0	0	0	0	3	39	0	42	3	0	0	3	0	0	2	2
+30 mins.	0	0	0	0	0	18	0	18	1	0	0	1	0	0	**3**	**3**
+45 mins.	0	0	0	0	0	5	0	5	1	0	0	1	0	1	2	3
Total Volume	0	0	0	0	10	125	0	135	9	0	0	9	0	2	8	10
% App. Total	0	0	0		7.4	92.6	0		100	0	0		0	20	80	
PHF	.000	.000	.000	.000	.357	.496	.000	.482	.563	.000	.000	.563	.000	.500	.667	.833

Location: Pomona
N/S: Project DW/Murchinson Ave
E/W: Murchinson Avenue

Date: 11/14/2019
Day: Thursday

PEDESTRIANS

	North Leg Project Driveway	East Leg Murchinson Avenue	South Leg Murchinson Avenue	West Leg Elementary Driveway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:30 AM	0	1	0	0	1
6:45 AM	0	0	0	0	0
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	1	1	2
7:45 AM	0	5	0	0	5
8:00 AM	0	1	0	0	1
8:15 AM	0	0	1	0	1
8:30 AM	0	4	0	0	4
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
TOTAL VOLUMES:	0	11	2	1	14

	North Leg Project Driveway	East Leg Murchinson Avenue	South Leg Murchinson Avenue	West Leg Elementary Driveway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
12:00 PM	0	0	0	0	0
12:15 PM	0	0	0	0	0
12:30 PM	0	0	0	0	0
12:45 PM	0	0	0	0	0
1:00 PM	0	0	0	0	0
1:15 PM	0	0	0	0	0
1:30 PM	0	0	0	0	0
1:45 PM	0	0	0	0	0
2:00 PM	0	0	0	0	0
2:15 PM	0	1	0	0	1
2:30 PM	0	2	0	0	2
2:45 PM	0	3	0	0	3
TOTAL VOLUMES:	0	6	0	0	6

	North Leg Project Driveway	East Leg Murchinson Avenue	South Leg Murchinson Avenue	West Leg Elementary Driveway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
3:00 PM	0	3	0	0	3
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	3	0	0	3

Location: Pomona
N/S: Project DW/Murchinson Ave
E/W: Murchinson Avenue

Date: 11/14/2019
Day: Thursday

BICYCLES

	Southbound Project Driveway			Westbound Murchinson Avenue			Northbound Murchinson Avenue			Eastbound Elementary Driveway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	1	0	0	0	0	0	0	0	0	0	1

	Southbound Project Driveway			Westbound Murchinson Avenue			Northbound Murchinson Avenue			Eastbound Elementary Driveway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	1	0	0	0	2	0	3
TOTAL VOLUMES:	0	0	0	0	0	0	1	0	0	0	2	0	3

	Southbound Project Driveway			Westbound Murchinson Avenue			Northbound Murchinson Avenue			Eastbound Elementary Driveway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
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City of Pomona
Dudley Street
B/ Gillette Road - Interstate 10 Eastbound
24 Hour Directional Volume Count

POM001
Site Code: 051-19790

Start Time	14-Nov-19 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		17	45			12	45				
12:15		16	39			10	49				
12:30		9	53			13	42				
12:45		4	37	46	174	7	36	42	172	88	346
01:00		4	48			16	45				
01:15		7	28			5	37				
01:30		4	55			13	55				
01:45		8	50	23	181	11	41	45	178	68	359
02:00		4	57			6	57				
02:15		7	49			6	63				
02:30		16	53			3	64				
02:45		7	**59**	34	218	4	59	19	243	53	461
03:00		6	**76**			3	**76**				
03:15		10	**75**			7	**75**				
03:30		12	**78**			7	**61**				
03:45		17	59	45	288	9	**71**	26	283	71	571
04:00		17	55			13	66				
04:15		27	59			18	66				
04:30		33	47			28	69				
04:45		39	52	116	213	24	72	83	273	199	486
05:00		51	61			16	60				
05:15		46	63			20	57				
05:30		40	55			18	68				
05:45		38	54	175	233	18	75	72	260	247	493
06:00		39	60			20	55				
06:15		43	57			20	56				
06:30		60	53			41	45				
06:45		48	42	190	212	48	45	129	201	319	413
07:00		46	41			38	66				
07:15		59	44			**43**	56				
07:30		**87**	37			**63**	39				
07:45		**91**	54	283	176	**94**	41	238	202	521	378
08:00		**85**	40			**46**	21				
08:15		**71**	34			28	37				
08:30		63	26			26	39				
08:45		41	35	260	135	36	29	136	126	396	261
09:00		29	31			34	32				
09:15		33	35			45	30				
09:30		46	32			36	34				
09:45		46	24	154	122	34	29	149	125	303	247
10:00		37	30			33	20				
10:15		37	24			34	26				
10:30		48	22			20	28				
10:45		32	12	154	88	41	5	128	79	282	167
11:00		35	22			42	17				
11:15		35	18			30	19				
11:30		32	20			40	11				
11:45		42	9	144	69	42	14	154	61	298	130
Total		1624	2109	1624	2109	1221	2203	1221	2203	2845	4312
Combined Total		3733		3733		3424		3424		7157	
AM Peak	-	07:30	-	-	-	07:15	-	-	-	-	-
Vol.	-	334	-	-	-	246	-	-	-	-	-
P.H.F.		0.918				0.654					
PM Peak	-	-	02:45	-	-	-	03:00	-	-	-	-
Vol.	-	-	288	-	-	-	283	-	-	-	-
P.H.F.			0.923				0.931				
Percentage		43.5%	56.5%			35.7%	64.3%				
ADT/AADT		ADT 7,157		AADT 7,157							

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City of Pomona
Murchison Avenue
B/ Dudley Street - Project Driveway
24 Hour Directional Volume Count

POM002
Site Code: 051-19790

Start Time	14-Nov-19 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		2	2			0	6				
12:15		1	1			1	7				
12:30		2	1			0	5				
12:45		0	1	5	5	2	5	3	23	8	28
01:00		1	2			1	3				
01:15		0	0			0	7				
01:30		0	0			0	6				
01:45		0	1	1	3	0	3	1	19	2	22
02:00		0	0			0	2				
02:15		0	3			0	2				
02:30		1	0			0	**48**				
02:45		0	1	1	4	0	**17**	0	69	1	73
03:00		0	3			0	**70**				
03:15		1	2			0	**42**				
03:30		0	0			1	22				
03:45		1	0	2	5	0	8	1	142	3	147
04:00		0	2			0	30				
04:15		0	2			0	11				
04:30		0	1			1	12				
04:45		0	**2**	0	7	1	4	2	57	2	64
05:00		0	**2**			1	7				
05:15		2	**2**			1	6				
05:30		0	**2**			3	9				
05:45		0	0	2	6	0	18	5	40	7	46
06:00		0	0			0	8				
06:15		2	1			2	5				
06:30		0	0			2	2				
06:45		2	1	4	2	4	4	8	19	12	21
07:00		1	2			5	1				
07:15		0	2			**17**	21				
07:30		**1**	0			**56**	2				
07:45		**4**	0	6	4	**88**	1	166	25	172	29
08:00		**3**	0			**95**	0				
08:15		**1**	0			16	0				
08:30		1	0			4	2				
08:45		1	0	6	0	3	0	118	2	124	2
09:00		0	0			3	0				
09:15		0	0			2	0				
09:30		0	1			1	2				
09:45		2	0	2	1	3	0	9	2	11	3
10:00		0	0			2	1				
10:15		0	2			2	2				
10:30		1	0			5	1				
10:45		0	1	1	3	5	0	14	4	15	7
11:00		0	0			12	0				
11:15		1	0			3	1				
11:30		0	0			1	0				
11:45		2	0	3	0	12	0	28	1	31	1
Total		33	40	33	40	355	403	355	403	388	443
Combined Total		73		73		758		758		831	
AM Peak	-	07:30	-	-	-	07:15	-	-	-	-	-
Vol.	-	9	-	-	-	256	-	-	-	-	-
P.H.F.		0.563				0.674					
PM Peak	-	-	04:45	-	-	-	02:30	-	-	-	-
Vol.	-	-	8	-	-	-	177	-	-	-	-
P.H.F.			0.667				0.632				
Percentage		45.2%	54.8%			46.8%	53.2%				
ADT/AADT		ADT 831		AADT 831							

APPENDIX 3.2:

EXISTING (2019) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	165	243	78	80	110
Future Vol, veh/h	19	165	243	78	80	110
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	212	312	100	103	141
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.8	13.7	11.1
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	42%
Vol Right, %	0%	0%	0%	100%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	243	78	19	165	190
LT Vol	243	0	19	0	0
Through Vol	0	78	0	0	80
RT Vol	0	0	0	165	110
Lane Flow Rate	312	100	24	212	244
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.52	0.153	0.046	0.326	0.355
Departure Headway (Hd)	6.013	5.508	6.764	5.549	5.25
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	601	653	531	649	687
Service Time	3.733	3.228	4.49	3.275	3.272
HCM Lane V/C Ratio	0.519	0.153	0.045	0.327	0.355
HCM Control Delay	15.1	9.2	9.8	10.9	11.1
HCM Lane LOS	C	A	A	B	B
HCM 95th-tile Q	3	0.5	0.1	1.4	1.6

Intersection	
Int Delay, s/veh	65

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	3	127	125	60	70	149	219	0	6	205	34
Future Vol, veh/h	32	3	127	125	60	70	149	219	0	6	205	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	4	167	164	79	92	196	288	0	8	270	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1052	968	270	1054	968	290	270	0	0	290	0	0
Stage 1	286	286	-	682	682	-	-	-	-	-	-	-
Stage 2	766	682	-	372	286	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	204	254	769	204	254	749	1293	-	-	1272	-	-
Stage 1	721	675	-	440	450	-	-	-	-	-	-	-
Stage 2	395	450	-	648	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	113	214	769	~ 138	214	748	1293	-	-	1270	-	-
Mov Cap-2 Maneuver	113	214	-	~ 138	214	-	-	-	-	-	-	-
Stage 1	611	671	-	373	381	-	-	-	-	-	-	-
Stage 2	233	381	-	501	671	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.2	244.7	3.4	0.2
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1293	-	-	118	769	156	748	1270	-	-
HCM Lane V/C Ratio	0.152	-	-	0.39	0.217	1.56	0.123	0.006	-	-
HCM Control Delay (s)	8.3	-	-	53.8	11$	333.3	10.5	7.9	-	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	1.6	0.8	16.5	0.4	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	15	353	12	20	437
Future Vol, veh/h	21	15	353	12	20	437
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	18	430	15	24	533

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1011	430	0	0	445	0
Stage 1	430	-	-	-	-	-
Stage 2	581	-	-	-	-	-
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	265	625	-	-	1115	-
Stage 1	656	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	259	625	-	-	1115	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	656	-	-	-	-	-
Stage 2	547	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	259	625	1115	-
HCM Lane V/C Ratio	-	-	0.099	0.029	0.022	-
HCM Control Delay (s)	-	-	20.4	10.9	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	0.1	-

4: Murchison Av. & Driveway Performance by movement

Movement	EBR	WBL	WBT	NBL	NBT	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.0	0.0	0.2
Total Del/Veh (s)	0.6	4.5	9.2	0.6	0.4	7.8

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	199	149	91	54	60
Future Vol, veh/h	29	199	149	91	54	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	209	157	96	57	63
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.4	9.8	9
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	47%
Vol Right, %	0%	0%	0%	100%	53%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	91	29	199	114
LT Vol	149	0	29	0	0
Through Vol	0	91	0	0	54
RT Vol	0	0	0	199	60
Lane Flow Rate	157	96	31	209	120
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.25	0.139	0.051	0.278	0.164
Departure Headway (Hd)	5.739	5.236	5.988	4.78	4.924
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	624	682	598	750	725
Service Time	3.49	2.987	3.728	2.52	2.978
HCM Lane V/C Ratio	0.252	0.141	0.052	0.279	0.166
HCM Control Delay	10.4	8.8	9.1	9.4	9
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1	0.5	0.2	1.1	0.6

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	2	109	58	12	19	157	163	0	2	206	45
Future Vol, veh/h	58	2	109	58	12	19	157	163	0	2	206	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	2	122	65	13	21	176	183	0	2	231	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	787	770	231	832	770	183	231	0	0	183	0	0
Stage 1	235	235	-	535	535	-	-	-	-	-	-	-
Stage 2	552	535	-	297	235	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	309	331	808	288	331	859	1337	-	-	1392	-	-
Stage 1	768	710	-	529	524	-	-	-	-	-	-	-
Stage 2	518	524	-	712	710	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	261	287	808	218	287	859	1337	-	-	1392	-	-
Mov Cap-2 Maneuver	261	287	-	218	287	-	-	-	-	-	-	-
Stage 1	667	709	-	459	455	-	-	-	-	-	-	-
Stage 2	426	455	-	601	709	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	24.8	4	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1337	-	-	262	808	227	859	1392	-	-
HCM Lane V/C Ratio	0.132	-	-	0.257	0.152	0.346	0.025	0.002	-	-
HCM Control Delay (s)	8.1	-	-	23.4	10.3	29	9.3	7.6	-	-
HCM Lane LOS	A	-	-	C	B	D	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	1	0.5	1.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	21	299	23	24	349
Future Vol, veh/h	30	21	299	23	24	349
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	26	374	29	30	436

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	870	374	0	0	403	0
Stage 1	374	-	-	-	-	-
Stage 2	496	-	-	-	-	-
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	322	672	-	-	1156	-
Stage 1	696	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	314	672	-	-	1156	-
Mov Cap-2 Maneuver	314	-	-	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	596	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	314	672	1156	-
HCM Lane V/C Ratio	-	-	0.119	0.039	0.026	-
HCM Control Delay (s)	-	-	18	10.6	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0.1	-

4: Murchison Av. & Driveway Performance by movement

Movement	EBR	WBL	WBT	NBL	NBT	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0	0.0	0.1
Total Del/Veh (s)	0.6	5.0	5.3	0.6	0.2	4.0

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	248	157	144	39	0
Future Vol, veh/h	52	248	157	144	39	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	261	165	152	41	0
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.9	10.3	8.9
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	157	144	52	248	39
LT Vol	157	0	52	0	0
Through Vol	0	144	0	0	39
RT Vol	0	0	0	248	0
Lane Flow Rate	165	152	55	261	41
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.268	0.225	0.091	0.346	0.063
Departure Headway (Hd)	5.844	5.341	5.982	4.775	5.494
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	611	668	598	752	647
Service Time	3.608	3.104	3.725	2.517	3.57
HCM Lane V/C Ratio	0.27	0.228	0.092	0.347	0.063
HCM Control Delay	10.8	9.7	9.3	10	8.9
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1.1	0.9	0.3	1.5	0.2

Intersection	
Int Delay, s/veh	12.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1	121	77	26	31	161	208	1	4	223	60
Future Vol, veh/h	62	1	121	77	26	31	161	208	1	4	223	60
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	6	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	1	144	92	31	37	192	248	1	5	265	71

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	949	921	273	987	920	254	272	0	0	255	0	0
Stage 1	282	282	-	638	638	-	-	-	-	-	-	-
Stage 2	667	639	-	349	282	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	240	270	766	226	271	785	1291	-	-	1310	-	-
Stage 1	725	678	-	465	471	-	-	-	-	-	-	-
Stage 2	448	470	-	667	678	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	180	226	760	160	227	781	1282	-	-	1303	-	-
Mov Cap-2 Maneuver	180	226	-	160	227	-	-	-	-	-	-	-
Stage 1	613	671	-	393	398	-	-	-	-	-	-	-
Stage 2	335	397	-	537	671	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.2	52.1	3.6	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1282	-	-	181	760	173	781	1303	-	-
HCM Lane V/C Ratio	0.15	-	-	0.414	0.19	0.709	0.047	0.004	-	-
HCM Control Delay (s)	8.3	-	-	38.3	10.8	64.8	9.8	7.8	-	-
HCM Lane LOS	A	-	-	E	B	F	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	1.9	0.7	4.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	30	340	23	20	401
Future Vol, veh/h	41	30	340	23	20	401
Conflicting Peds, #/hr	0	0	0	3	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	32	362	24	21	427

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	834	365	0	0	389	0
Stage 1	365	-	-	-	-	-
Stage 2	469	-	-	-	-	-
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	338	680	-	-	1170	-
Stage 1	702	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	331	678	-	-	1167	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	331	678	1167	-
HCM Lane V/C Ratio	-	-	0.132	0.047	0.018	-
HCM Control Delay (s)	-	-	17.5	10.6	8.1	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

4: Murchison Av. & Driveway Performance by movement

Movement	EBR	WBL	WBT	NBL	NBT	All
Denied Del/Veh (s)	0.0	0.1	0.2	0.0	0.0	0.1
Total Del/Veh (s)	0.2	4.4	5.2	0.1	0.2	3.9

APPENDIX 3.3:

EXISTING (2019) CONDITIONS TRAFFIC SIGNAL WARRANT WORKSHEETS

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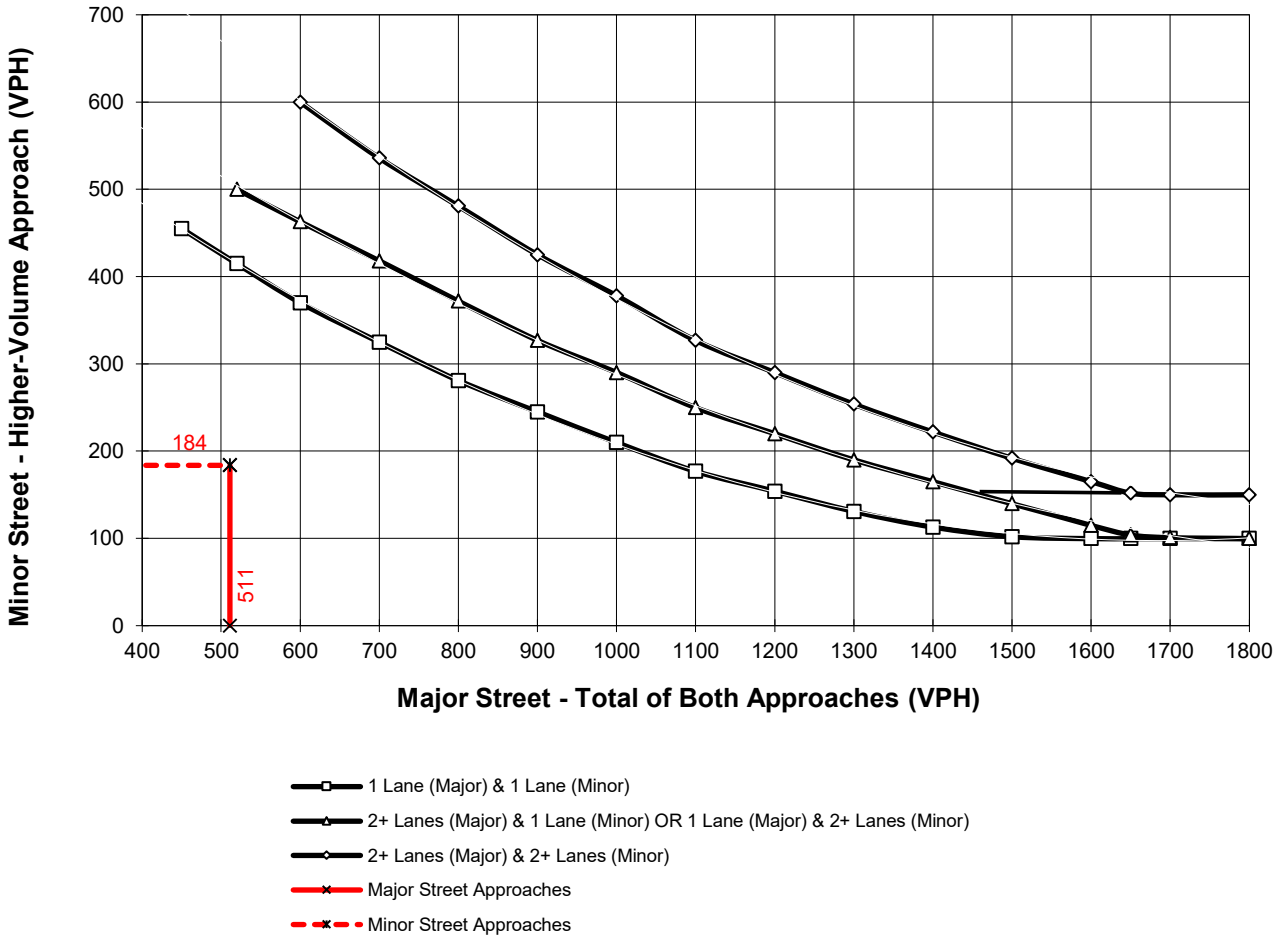
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing (2019) Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **511**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Gillette Rd.**
High Volume Approach (VPH) = **184**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

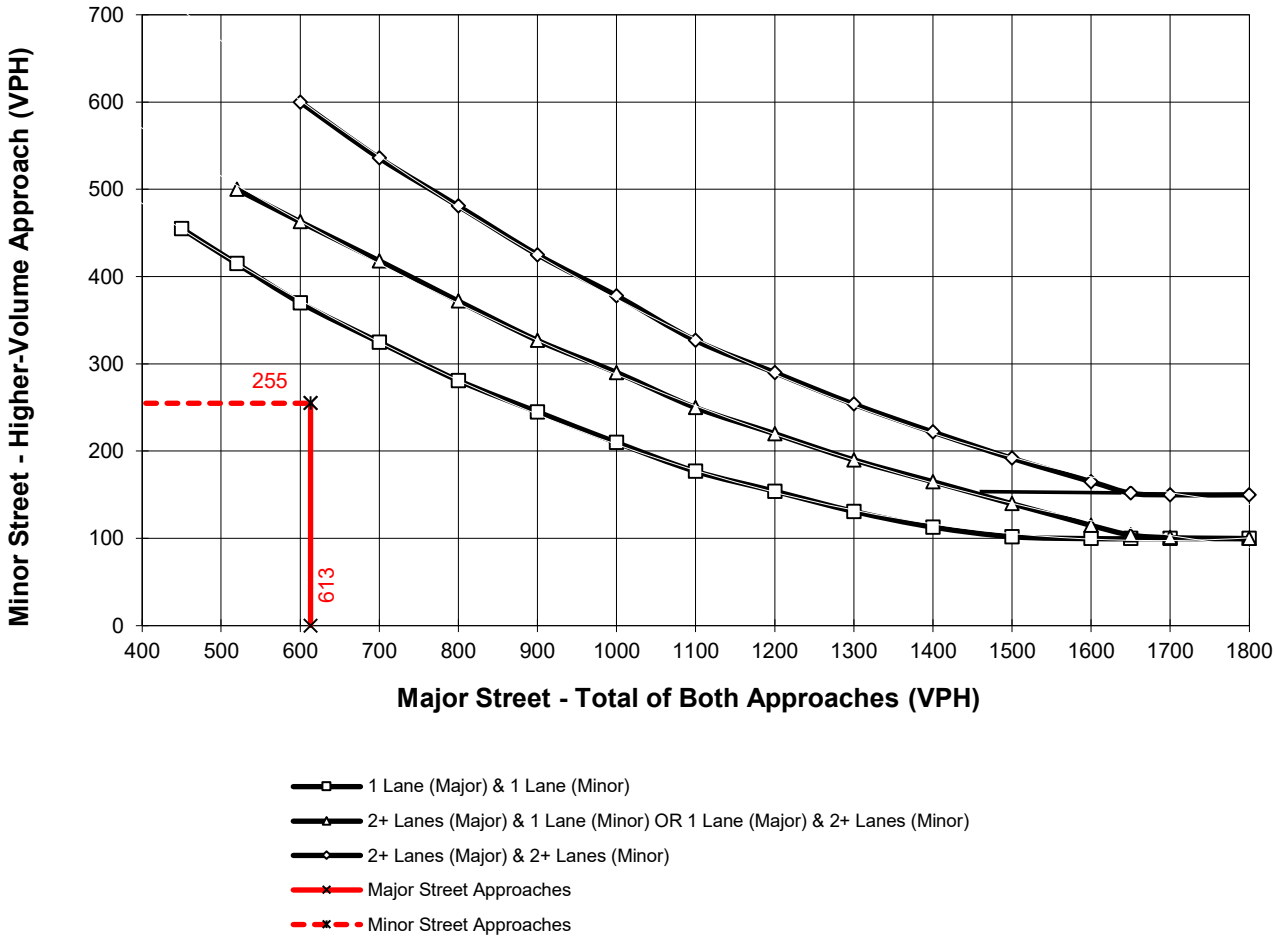
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing (2019) Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **613**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **I-10 EB Ramps/Murchison Av.**
High Volume Approach (VPH) = **255**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

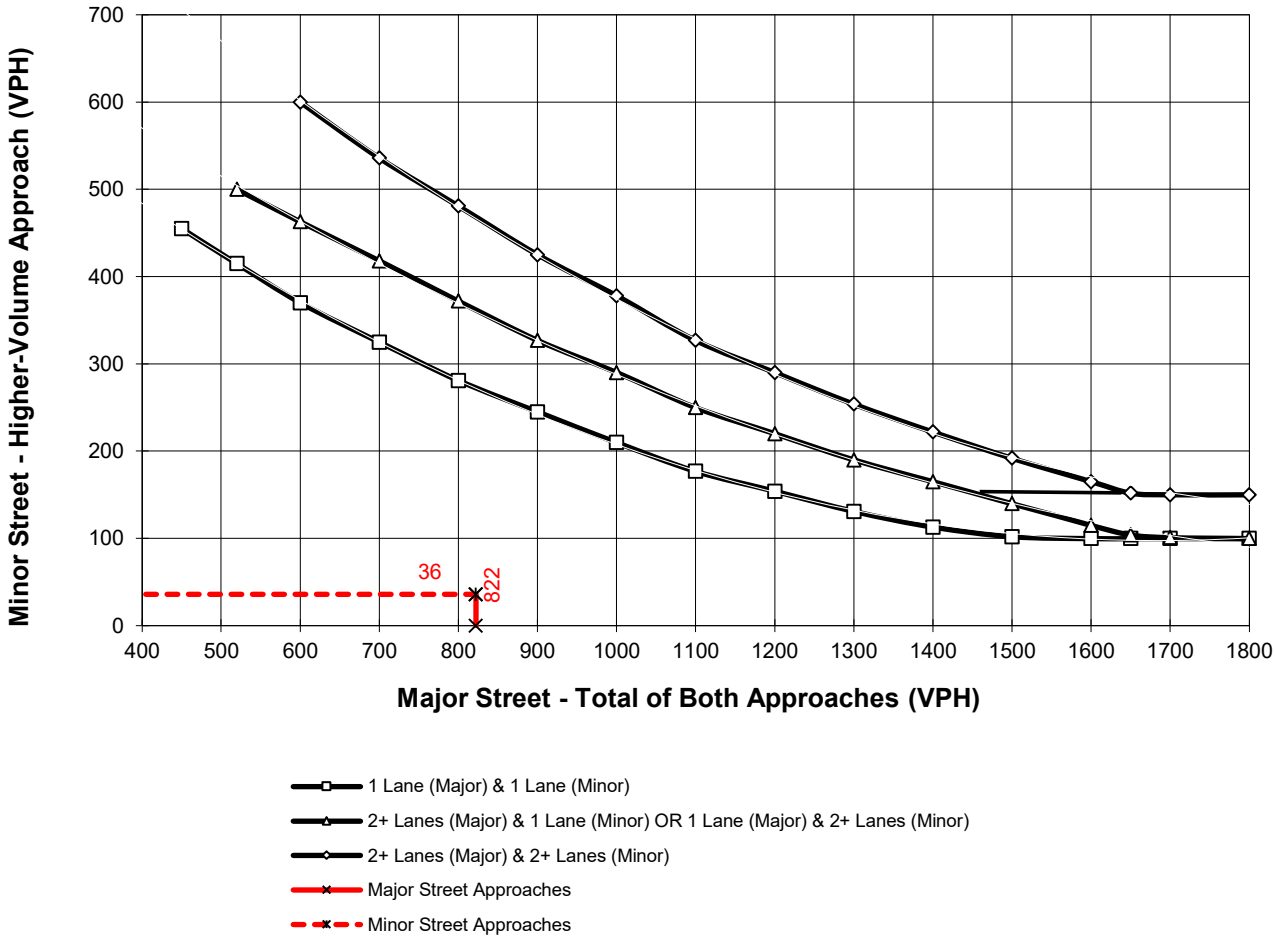
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing (2019) Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **822**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Murchison Av.**
High Volume Approach (VPH) = **36**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

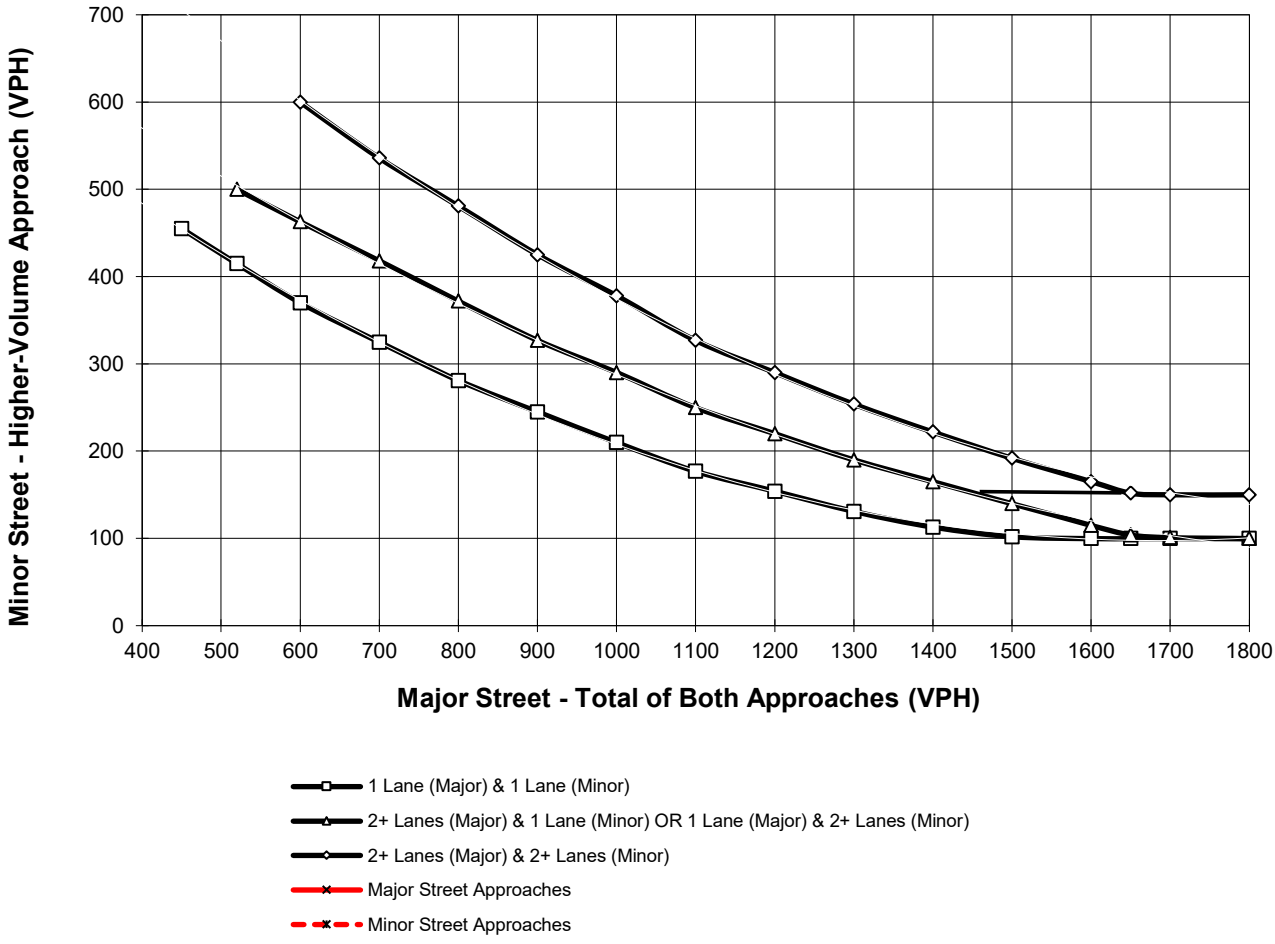
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing (2019) Conditions - Weekday AM Peak Hour**

Major Street Name = **Murchison Av.**
Total of Both Approaches (VPH) = **311**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Project Driveway**
High Volume Approach (VPH) = **7**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 5.1:

E+P CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	169	253	82	81	110
Future Vol, veh/h	19	169	253	82	81	110
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	217	324	105	104	141
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	11.1	14.2	11.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	42%
Vol Right, %	0%	0%	0%	100%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	253	82	19	169	191
LT Vol	253	0	19	0	0
Through Vol	0	82	0	0	81
RT Vol	0	0	0	169	110
Lane Flow Rate	324	105	24	217	245
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.544	0.162	0.046	0.337	0.36
Departure Headway (Hd)	6.041	5.536	6.814	5.599	5.297
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	600	650	526	643	681
Service Time	3.761	3.256	4.545	3.329	3.322
HCM Lane V/C Ratio	0.54	0.162	0.046	0.337	0.36
HCM Control Delay	15.8	9.3	9.9	11.2	11.3
HCM Lane LOS	C	A	A	B	B
HCM 95th-tile Q	3.3	0.6	0.1	1.5	1.6

Intersection	
Int Delay, s/veh	83.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	7	127	131	70	84	149	219	2	11	205	34
Future Vol, veh/h	32	7	127	131	70	84	149	219	2	11	205	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	9	167	172	92	111	196	288	3	14	270	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1081	983	270	1068	980	290	270	0	0	293	0	0
Stage 1	298	298	-	682	682	-	-	-	-	-	-	-
Stage 2	783	685	-	386	298	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	195	249	769	199	250	749	1293	-	-	1269	-	-
Stage 1	711	667	-	440	450	-	-	-	-	-	-	-
Stage 2	387	448	-	637	667	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	97	208	769	~ 132	209	748	1293	-	-	1267	-	-
Mov Cap-2 Maneuver	97	208	-	~ 132	209	-	-	-	-	-	-	-
Stage 1	603	660	-	373	381	-	-	-	-	-	-	-
Stage 2	212	379	-	486	660	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24	296.2	3.3	0.3
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1293	-	-	107	769	151	748	1267	-	-
HCM Lane V/C Ratio	0.152	-	-	0.48	0.217	1.751	0.148	0.011	-	-
HCM Control Delay (s)	8.3	-	-	66.4	11$	415.6	10.6	7.9	-	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	2.1	0.8	19.3	0.5	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	15	355	14	20	443
Future Vol, veh/h	27	15	355	14	20	443
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	18	433	17	24	540

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1021	433	0	0	450	0
Stage 1	433	-	-	-	-	-
Stage 2	588	-	-	-	-	-
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	262	623	-	-	1110	-
Stage 1	654	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	256	623	-	-	1110	-
Mov Cap-2 Maneuver	256	-	-	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	543	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.5	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	256	623	1110	-
HCM Lane V/C Ratio	-	-	0.129	0.029	0.022	-
HCM Control Delay (s)	-	-	21.1	11	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0.1	-

4: Murchison Av. & Driveway & Project Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.1	0.2
Total Del/Veh (s)	0.5	0.7	4.5	9.6	5.6	0.3	6.6	5.0	7.5

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	209	156	94	58	60
Future Vol, veh/h	29	209	156	94	58	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	220	164	99	61	63
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.5	10	9.1
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	49%
Vol Right, %	0%	0%	0%	100%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	156	94	29	209	118
LT Vol	156	0	29	0	0
Through Vol	0	94	0	0	58
RT Vol	0	0	0	209	60
Lane Flow Rate	164	99	31	220	124
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.263	0.145	0.051	0.295	0.172
Departure Headway (Hd)	5.773	5.27	6.028	4.82	4.977
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	619	677	593	744	717
Service Time	3.531	3.027	3.772	2.564	3.039
HCM Lane V/C Ratio	0.265	0.146	0.052	0.296	0.173
HCM Control Delay	10.6	8.9	9.1	9.6	9.1
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1.1	0.5	0.2	1.2	0.6

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	12	109	62	19	28	157	163	6	16	206	45
Future Vol, veh/h	58	12	109	62	19	28	157	163	6	16	206	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	13	122	70	21	31	176	183	7	18	231	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	832	809	231	870	802	183	231	0	0	190	0	0
Stage 1	267	267	-	535	535	-	-	-	-	-	-	-
Stage 2	565	542	-	335	267	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	288	314	808	272	317	859	1337	-	-	1384	-	-
Stage 1	738	688	-	529	524	-	-	-	-	-	-	-
Stage 2	510	520	-	679	688	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	232	269	808	198	272	859	1337	-	-	1384	-	-
Mov Cap-2 Maneuver	232	269	-	198	272	-	-	-	-	-	-	-
Stage 1	641	679	-	459	455	-	-	-	-	-	-	-
Stage 2	407	451	-	557	679	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17	28	3.9	0.5
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1337	-	-	238	808	211	859	1384	-	-
HCM Lane V/C Ratio	0.132	-	-	0.33	0.152	0.431	0.037	0.013	-	-
HCM Control Delay (s)	8.1	-	-	27.4	10.3	34.4	9.4	7.6	-	-
HCM Lane LOS	A	-	-	D	B	D	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	1.4	0.5	2	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	21	305	29	24	353
Future Vol, veh/h	34	21	305	29	24	353
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	26	381	36	30	441

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	882	381	0	0	417	0
Stage 1	381	-	-	-	-	-
Stage 2	501	-	-	-	-	-
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	317	666	-	-	1142	-
Stage 1	691	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	309	666	-	-	1142	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	593	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	309	666	1142	-
HCM Lane V/C Ratio	-	-	0.138	0.039	0.026	-
HCM Control Delay (s)	-	-	18.5	10.6	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

4: Murchison Av. & Driveway & Project Driveway Performance by movement

Movement	EBL	EBR	WBT	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.1
Total Del/Veh (s)	0.8	1.3	5.5	4.5	0.8	4.8	3.2	3.3

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	258	164	147	43	0
Future Vol, veh/h	52	258	164	147	43	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	272	173	155	45	0
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.1	10.4	9
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	164	147	52	258	43
LT Vol	164	0	52	0	0
Through Vol	0	147	0	0	43
RT Vol	0	0	0	258	0
Lane Flow Rate	173	155	55	272	45
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.282	0.231	0.092	0.363	0.07
Departure Headway (Hd)	5.88	5.377	6.021	4.814	5.538
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	608	664	594	744	641
Service Time	3.647	3.144	3.768	2.561	3.621
HCM Lane V/C Ratio	0.285	0.233	0.093	0.366	0.07
HCM Control Delay	11	9.8	9.4	10.3	9
HCM Lane LOS	B	A	A	B	A
HCM 95th-tile Q	1.2	0.9	0.3	1.7	0.2

Intersection	
Int Delay, s/veh	17.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	11	121	81	33	40	161	208	7	18	223	60
Future Vol, veh/h	62	11	121	81	33	40	161	208	7	18	223	60
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	6	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	13	144	96	39	48	192	248	8	21	265	71

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	994	960	273	1025	952	254	272	0	0	262	0	0
Stage 1	314	314	-	638	638	-	-	-	-	-	-	-
Stage 2	680	646	-	387	314	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	224	257	766	213	259	785	1291	-	-	1302	-	-
Stage 1	697	656	-	465	471	-	-	-	-	-	-	-
Stage 2	441	467	-	637	656	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	158	212	760	143	214	781	1282	-	-	1295	-	-
Mov Cap-2 Maneuver	158	212	-	143	214	-	-	-	-	-	-	-
Stage 1	589	641	-	393	398	-	-	-	-	-	-	-
Stage 2	317	395	-	497	641	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.3	73	3.6	0.5
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1282	-	-	164	760	158	781	1295	-	-
HCM Lane V/C Ratio	0.15	-	-	0.53	0.19	0.859	0.061	0.017	-	-
HCM Control Delay (s)	8.3	-	-	49.3	10.8	95.1	9.9	7.8	-	-
HCM Lane LOS	A	-	-	E	B	F	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	2.7	0.7	5.9	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	30	346	29	20	405
Future Vol, veh/h	45	30	346	29	20	405
Conflicting Peds, #/hr	0	0	0	3	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	32	368	31	21	431

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	844	371	0	0	402	0
Stage 1	371	-	-	-	-	-
Stage 2	473	-	-	-	-	-
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	334	675	-	-	1157	-
Stage 1	698	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	327	673	-	-	1154	-
Mov Cap-2 Maneuver	327	-	-	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	616	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	327	673	1154	-
HCM Lane V/C Ratio	-	-	0.146	0.047	0.018	-
HCM Control Delay (s)	-	-	17.9	10.6	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

4: Murchison Av. & Driveway & Project Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	0.6	0.6	4.4	5.8	4.7	0.6	5.1	2.8	3.7

APPENDIX 5.2:

E+P CONDITIONS TRAFFIC SIGNAL WARRANT WORKSHEETS

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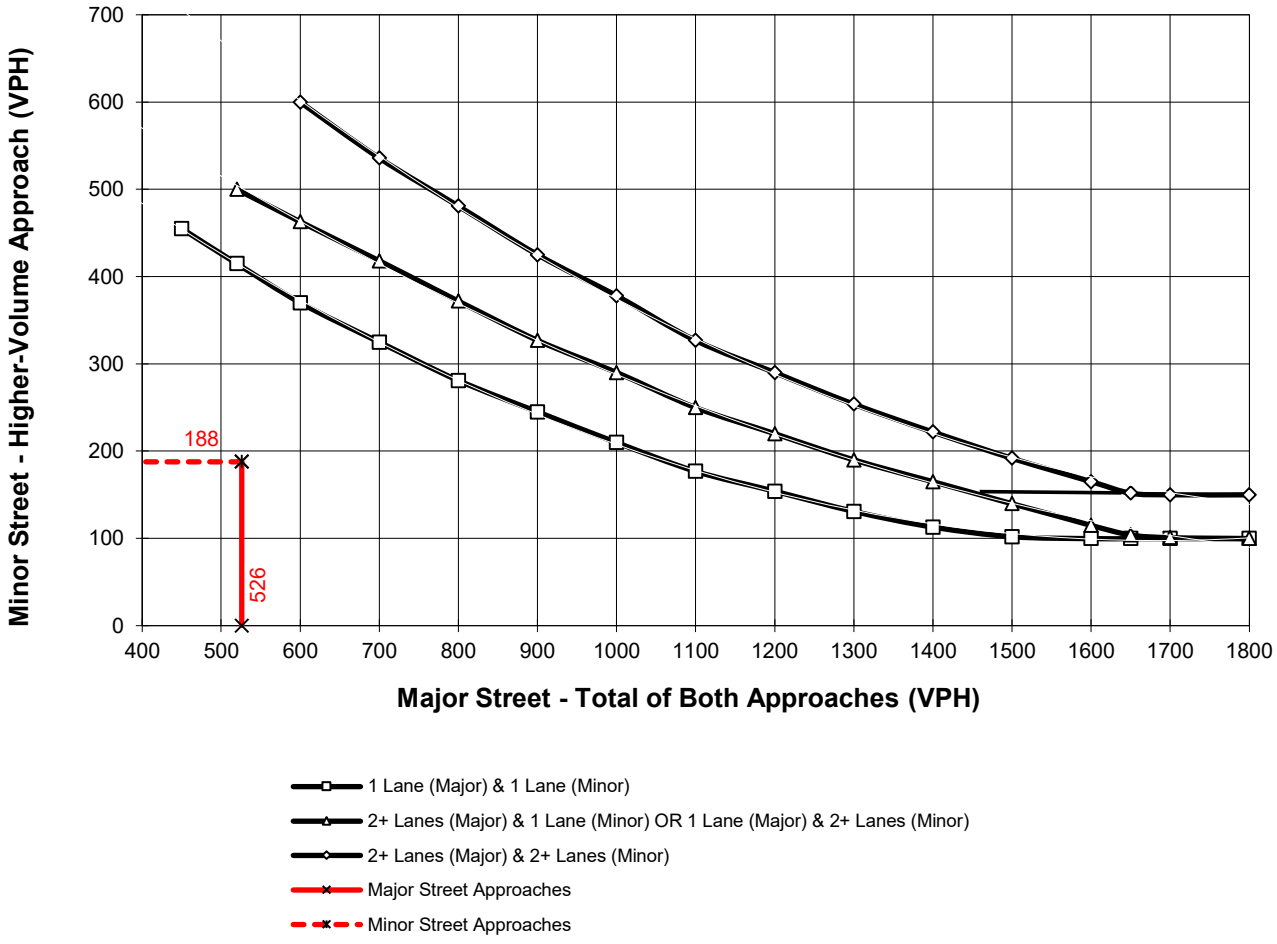
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **E+P Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **526**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Gillette Rd.**
High Volume Approach (VPH) = **188**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

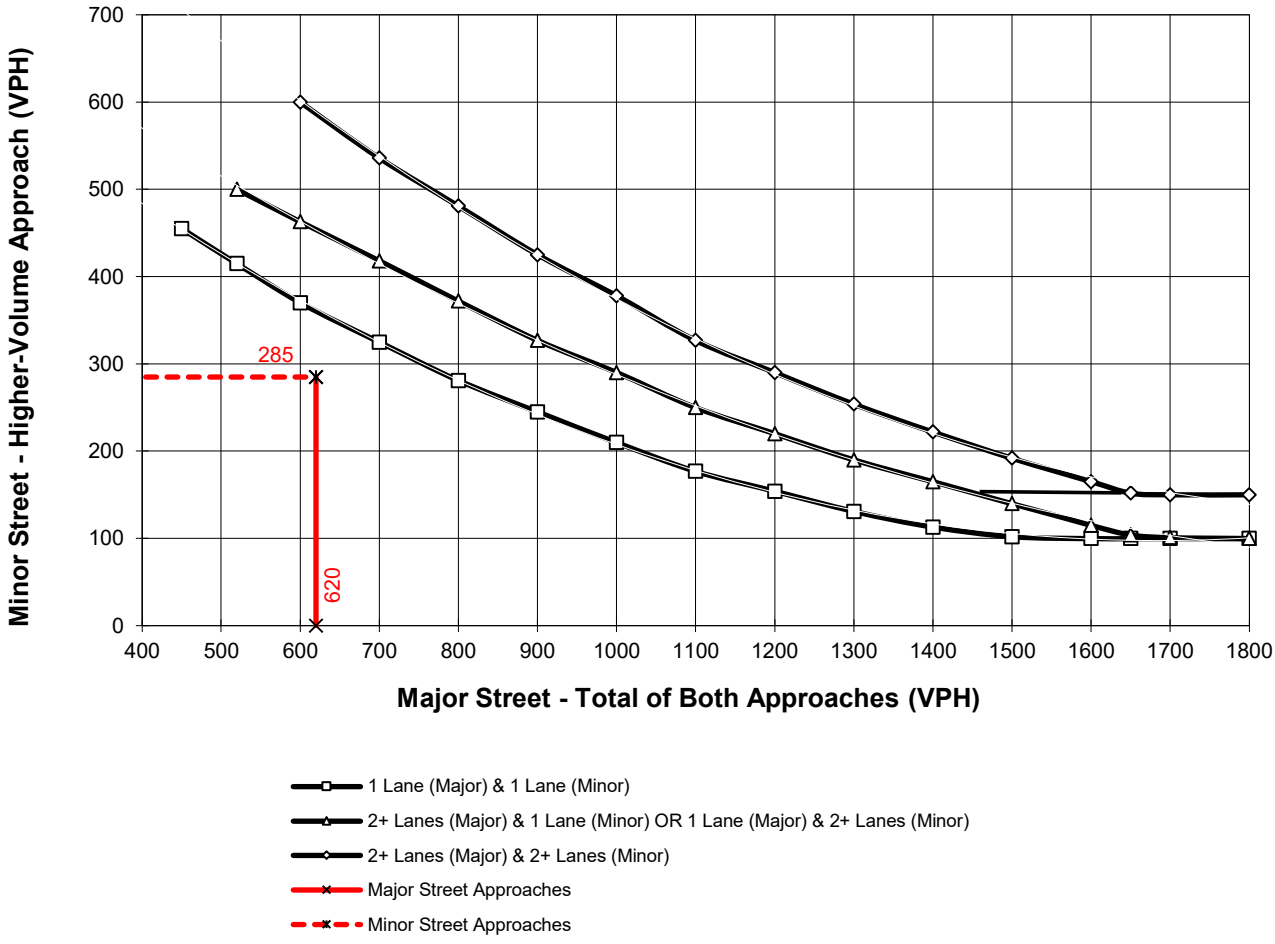
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **E+P Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.** Total of Both Approaches (VPH) = **620**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **I-10 EB Ramps/Murchison Av.** High Volume Approach (VPH) = **285**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

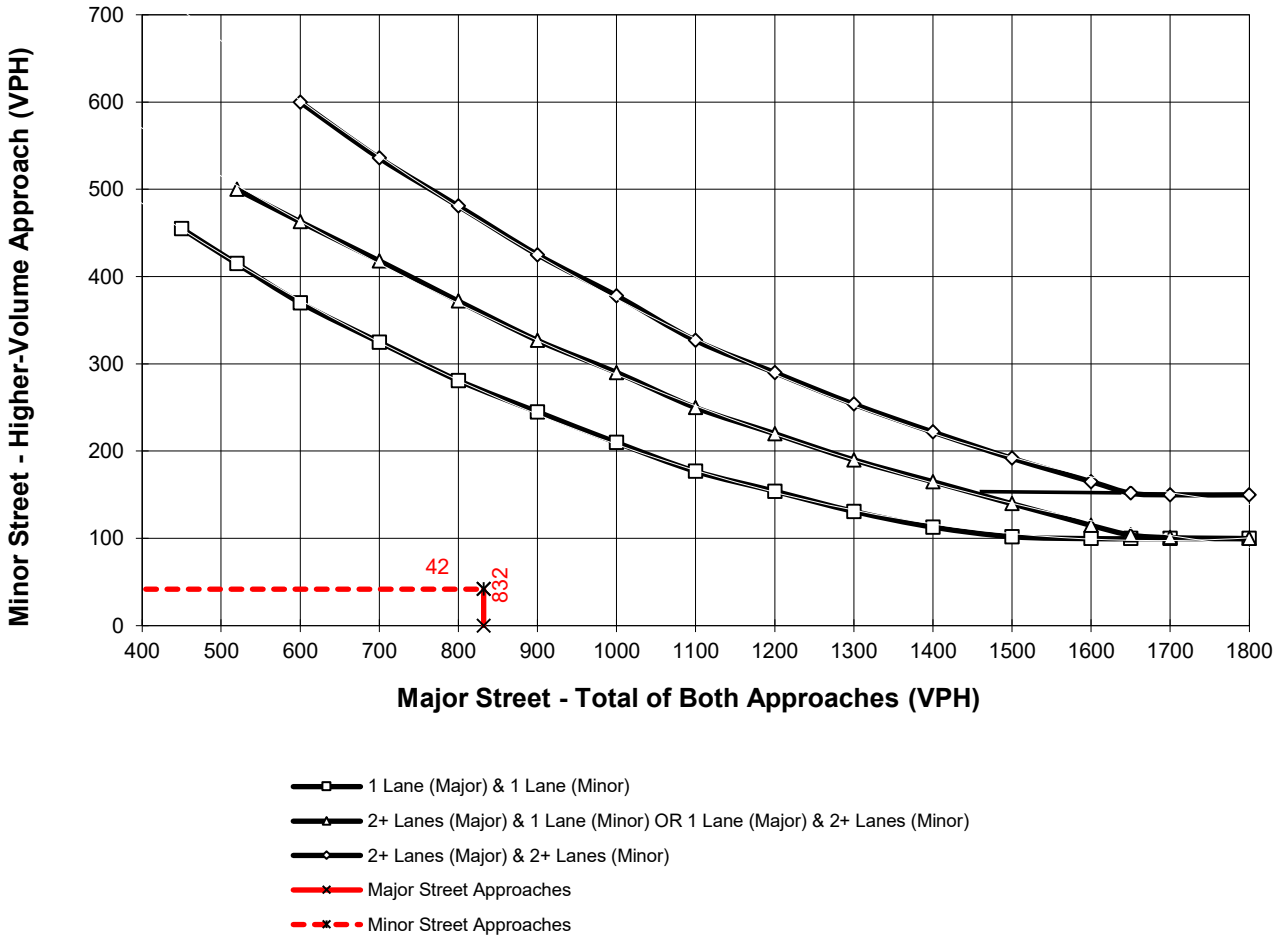
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **E+P Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **832**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Murchison Av.**
High Volume Approach (VPH) = **42**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

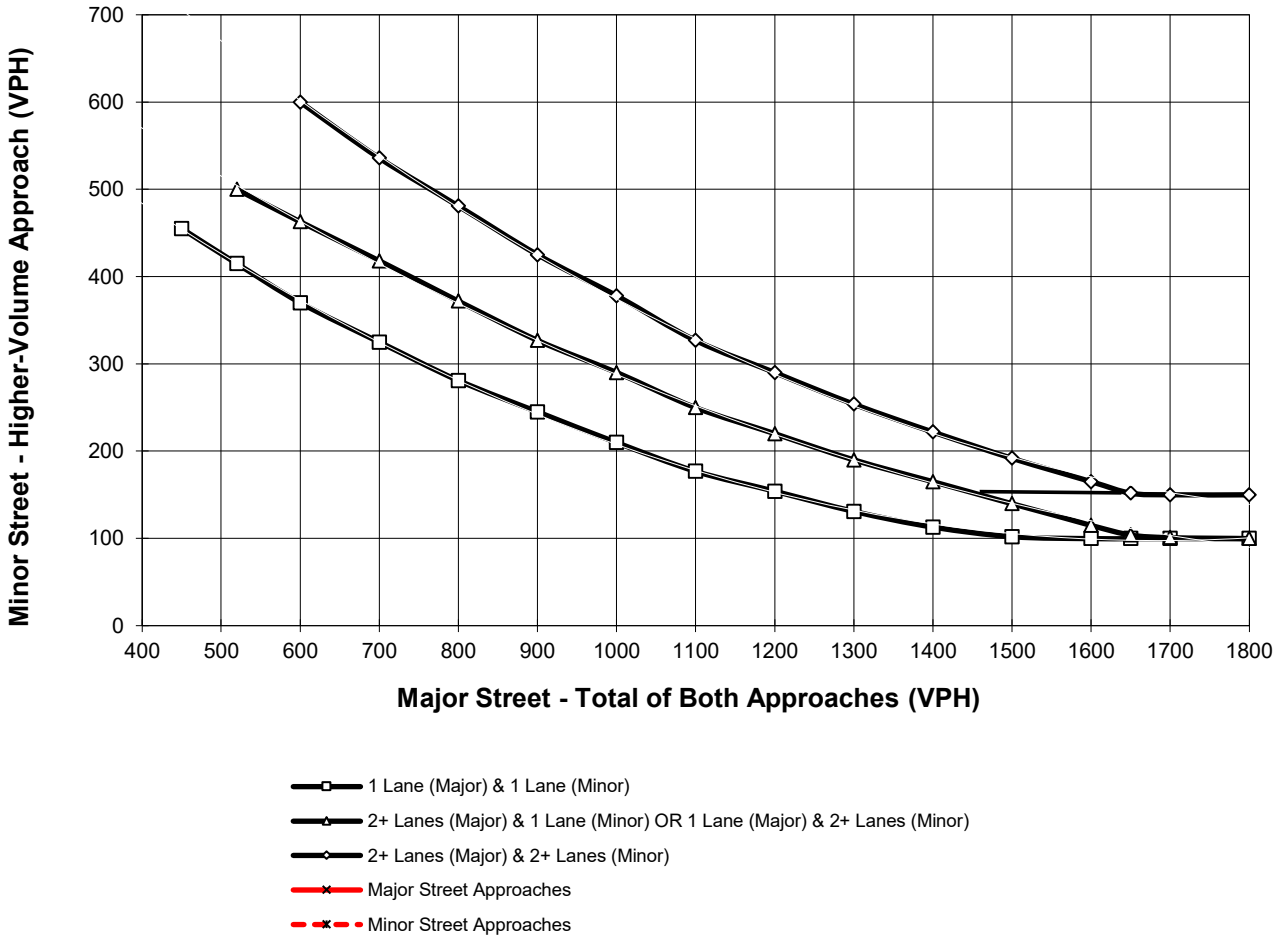
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **E+P Conditions - Weekday AM Peak Hour**

Major Street Name = **Murchison Av.**
Total of Both Approaches (VPH) = **322**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Project Driveway**
High Volume Approach (VPH) = **36**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 5.3:

E+P CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS, WITH IMPROVEMENTS

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Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	7	127	131	70	84	149	219	2	11	205	34
Future Vol, veh/h	32	7	127	131	70	84	149	219	2	11	205	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	8	138	142	76	91	162	238	2	12	223	37
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	12.4	15.4	15.8	15.8
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	82%	0%	65%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	18%	0%	35%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	219	2	39	127	201	84	11	205	34
LT Vol	149	0	0	32	0	131	0	11	0	0
Through Vol	0	219	0	7	0	70	0	0	205	0
RT Vol	0	0	2	0	127	0	84	0	0	34
Lane Flow Rate	162	238	2	42	138	218	91	12	223	37
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.351	0.481	0.004	0.097	0.274	0.471	0.171	0.027	0.471	0.071
Departure Headway (Hd)	7.793	7.281	6.566	8.257	7.135	7.765	6.732	8.117	7.605	6.888
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	462	495	544	433	502	463	531	440	472	519
Service Time	5.549	5.037	4.321	6.02	4.897	5.522	4.488	5.876	5.363	4.646
HCM Lane V/C Ratio	0.351	0.481	0.004	0.097	0.275	0.471	0.171	0.027	0.472	0.071
HCM Control Delay	14.7	16.6	9.3	11.9	12.6	17.3	10.9	11.1	17	10.2
HCM Lane LOS	B	C	A	B	B	C	B	B	C	B
HCM 95th-tile Q	1.6	2.6	0	0.3	1.1	2.5	0.6	0.1	2.5	0.2

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	12	109	62	19	28	157	163	6	16	206	45
Future Vol, veh/h	58	12	109	62	19	28	157	163	6	16	206	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	13	118	67	21	30	171	177	7	17	224	49
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	10.9	11.2	12.5	12.8
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	83%	0%	77%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	17%	0%	23%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	157	163	6	70	109	81	28	16	206	45
LT Vol	157	0	0	58	0	62	0	16	0	0
Through Vol	0	163	0	12	0	19	0	0	206	0
RT Vol	0	0	6	0	109	0	28	0	0	45
Lane Flow Rate	171	177	7	76	118	88	30	17	224	49
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.328	0.315	0.01	0.154	0.202	0.181	0.053	0.034	0.408	0.079
Departure Headway (Hd)	6.915	6.409	5.699	7.271	6.153	7.413	6.325	7.067	6.56	5.851
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	519	558	624	492	581	482	562	505	546	609
Service Time	4.682	4.176	3.466	5.045	3.926	5.196	4.107	4.838	4.331	3.621
HCM Lane V/C Ratio	0.329	0.317	0.011	0.154	0.203	0.183	0.053	0.034	0.41	0.08
HCM Control Delay	13.1	12.1	8.5	11.4	10.5	11.8	9.5	10.1	13.8	9.1
HCM Lane LOS	B	B	A	B	B	B	A	B	B	A
HCM 95th-tile Q	1.4	1.3	0	0.5	0.7	0.7	0.2	0.1	2	0.3

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	11	121	81	33	40	161	208	7	18	223	60
Future Vol, veh/h	62	11	121	81	33	40	161	208	7	18	223	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	12	132	88	36	43	175	226	8	20	242	65
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	12	12.8	14.6	14.8
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	85%	0%	71%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	15%	0%	29%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	161	208	7	73	121	114	40	18	223	60
LT Vol	161	0	0	62	0	81	0	18	0	0
Through Vol	0	208	0	11	0	33	0	0	223	0
RT Vol	0	0	7	0	121	0	40	0	0	60
Lane Flow Rate	175	226	8	79	132	124	43	20	242	65
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.363	0.437	0.013	0.174	0.248	0.273	0.083	0.042	0.482	0.117
Departure Headway (Hd)	7.464	6.955	6.242	7.914	6.781	7.936	6.873	7.662	7.152	6.439
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	483	518	573	454	530	452	521	468	504	556
Service Time	5.203	4.694	3.981	5.658	4.525	5.682	4.618	5.403	4.893	4.179
HCM Lane V/C Ratio	0.362	0.436	0.014	0.174	0.249	0.274	0.083	0.043	0.48	0.117
HCM Control Delay	14.4	15	9.1	12.3	11.8	13.7	10.2	10.7	16.4	10
HCM Lane LOS	B	B	A	B	B	B	B	B	C	A
HCM 95th-tile Q	1.6	2.2	0	0.6	1	1.1	0.3	0.1	2.6	0.4

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APPENDIX 6.1:

OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	175	258	83	85	117
Future Vol, veh/h	20	175	258	83	85	117
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	224	331	106	109	150
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	11.3	14.6	11.7
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	42%
Vol Right, %	0%	0%	0%	100%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	258	83	20	175	202
LT Vol	258	0	20	0	0
Through Vol	0	83	0	0	85
RT Vol	0	0	0	175	117
Lane Flow Rate	331	106	26	224	259
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.56	0.165	0.049	0.353	0.385
Departure Headway (Hd)	6.097	5.592	6.876	5.66	5.346
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	592	643	521	635	673
Service Time	3.821	3.316	4.61	3.393	3.373
HCM Lane V/C Ratio	0.559	0.165	0.05	0.353	0.385
HCM Control Delay	16.3	9.4	10	11.5	11.7
HCM Lane LOS	C	A	A	B	B
HCM 95th-tile Q	3.5	0.6	0.2	1.6	1.8

Intersection	
Int Delay, s/veh	91.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	3	135	133	64	74	158	232	0	6	218	36
Future Vol, veh/h	34	3	135	133	64	74	158	232	0	6	218	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	4	178	175	84	97	208	305	0	8	287	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1115	1026	287	1117	1026	307	287	0	0	307	0	0
Stage 1	303	303	-	723	723	-	-	-	-	-	-	-
Stage 2	812	723	-	394	303	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	185	235	752	185	235	733	1275	-	-	1254	-	-
Stage 1	706	664	-	417	431	-	-	-	-	-	-	-
Stage 2	373	431	-	631	664	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	94	195	752	~ 121	195	732	1275	-	-	1252	-	-
Mov Cap-2 Maneuver	94	195	-	~ 121	195	-	-	-	-	-	-	-
Stage 1	591	660	-	348	360	-	-	-	-	-	-	-
Stage 2	207	360	-	476	660	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.7	$ 348.9	3.4	0.2
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1275	-	-	98	752	138	732	1252	-	-
HCM Lane V/C Ratio	0.163	-	-	0.497	0.236	1.878	0.133	0.006	-	-
HCM Control Delay (s)	8.4	-	-	73.5	11.3	$ 475.9	10.7	7.9	-	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	2.2	0.9	20	0.5	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	16	375	13	21	464
Future Vol, veh/h	22	16	375	13	21	464
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	20	457	16	26	566

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1075	457	0	0	473	0
Stage 1	457	-	-	-	-	-
Stage 2	618	-	-	-	-	-
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	243	604	-	-	1089	-
Stage 1	638	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	237	604	-	-	1089	-
Mov Cap-2 Maneuver	237	-	-	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	525	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.5	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	237	604	1089	-
HCM Lane V/C Ratio	-	-	0.113	0.032	0.024	-
HCM Control Delay (s)	-	-	22.1	11.2	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0.1	-

4: Murchison Av. & Driveway Performance by movement

Movement	EBR	WBL	WBT	NBL	NBT	All
Denied Del/Veh (s)	0.0	0.1	0.2	0.0	0.0	0.2
Total Del/Veh (s)	0.7	4.6	7.4	2.0	0.2	6.3

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	211	158	97	57	64
Future Vol, veh/h	31	211	158	97	57	64
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	222	166	102	60	67
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.5	10.1	9.1
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	47%
Vol Right, %	0%	0%	0%	100%	53%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	158	97	31	211	121
LT Vol	158	0	31	0	0
Through Vol	0	97	0	0	57
RT Vol	0	0	0	211	64
Lane Flow Rate	166	102	33	222	127
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.267	0.15	0.055	0.298	0.176
Departure Headway (Hd)	5.789	5.285	6.046	4.838	4.982
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	619	675	591	740	716
Service Time	3.547	3.043	3.793	2.585	3.045
HCM Lane V/C Ratio	0.268	0.151	0.056	0.3	0.177
HCM Control Delay	10.7	9	9.1	9.6	9.1
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1.1	0.5	0.2	1.2	0.6

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	2	116	62	13	20	167	173	0	2	219	48
Future Vol, veh/h	62	2	116	62	13	20	167	173	0	2	219	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	2	130	70	15	22	188	194	0	2	246	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	839	820	246	886	820	194	246	0	0	194	0	0
Stage 1	250	250	-	570	570	-	-	-	-	-	-	-
Stage 2	589	570	-	316	250	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	285	310	793	265	310	847	1320	-	-	1379	-	-
Stage 1	754	700	-	506	505	-	-	-	-	-	-	-
Stage 2	494	505	-	695	700	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	237	266	793	196	266	847	1320	-	-	1379	-	-
Mov Cap-2 Maneuver	237	266	-	196	266	-	-	-	-	-	-	-
Stage 1	647	699	-	434	433	-	-	-	-	-	-	-
Stage 2	398	433	-	578	699	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.1	29.1	4	0.1
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1320	-	-	238	793	205	847	1379	-	-
HCM Lane V/C Ratio	0.142	-	-	0.302	0.164	0.411	0.027	0.002	-	-
HCM Control Delay (s)	8.2	-	-	26.5	10.4	34.3	9.4	7.6	-	-
HCM Lane LOS	A	-	-	D	B	D	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	1.2	0.6	1.9	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	22	317	24	25	370
Future Vol, veh/h	32	22	317	24	25	370
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	28	396	30	31	463

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	921	396	0	0	426	0
Stage 1	396	-	-	-	-	-
Stage 2	525	-	-	-	-	-
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	300	653	-	-	1133	-
Stage 1	680	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	292	653	-	-	1133	-
Mov Cap-2 Maneuver	292	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	577	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	292	653	1133	-
HCM Lane V/C Ratio	-	-	0.137	0.042	0.028	-
HCM Control Delay (s)	-	-	19.3	10.8	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

4: Murchison Av. & Driveway Performance by movement

Movement	EBR	WBT	NBL	NBT	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.1
Total Del/Veh (s)	0.9	5.5	0.7	0.4	3.4

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	263	167	153	41	0
Future Vol, veh/h	55	263	167	153	41	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	277	176	161	43	0
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.2	10.5	9.1
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	167	153	55	263	41
LT Vol	167	0	55	0	0
Through Vol	0	153	0	0	41
RT Vol	0	0	0	263	0
Lane Flow Rate	176	161	58	277	43
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.288	0.241	0.097	0.372	0.067
Departure Headway (Hd)	5.899	5.396	6.041	4.834	5.571
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	606	660	592	742	637
Service Time	3.67	3.166	3.789	2.582	3.657
HCM Lane V/C Ratio	0.29	0.244	0.098	0.373	0.068
HCM Control Delay	11.1	9.9	9.4	10.4	9.1
HCM Lane LOS	B	A	A	B	A
HCM 95th-tile Q	1.2	0.9	0.3	1.7	0.2

Intersection	
Int Delay, s/veh	16.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	1	128	82	28	33	171	221	1	4	237	64
Future Vol, veh/h	66	1	128	82	28	33	171	221	1	4	237	64
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	6	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	1	152	98	33	39	204	263	1	5	282	76

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1007	977	290	1047	976	269	289	0	0	270	0	0
Stage 1	299	299	-	677	677	-	-	-	-	-	-	-
Stage 2	708	678	-	370	299	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	219	251	749	206	251	770	1273	-	-	1293	-	-
Stage 1	710	666	-	443	452	-	-	-	-	-	-	-
Stage 2	426	452	-	650	666	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	159	207	743	142	207	766	1265	-	-	1286	-	-
Mov Cap-2 Maneuver	159	207	-	142	207	-	-	-	-	-	-	-
Stage 1	591	659	-	369	377	-	-	-	-	-	-	-
Stage 2	309	377	-	513	659	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.8	75.5	3.7	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1265	-	-	160	743	154	766	1286	-	-
HCM Lane V/C Ratio	0.161	-	-	0.499	0.205	0.85	0.051	0.004	-	-
HCM Control Delay (s)	8.4	-	-	48	11.1	95.1	10	7.8	-	-
HCM Lane LOS	A	-	-	E	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	2.4	0.8	5.7	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	32	361	24	21	426
Future Vol, veh/h	44	32	361	24	21	426
Conflicting Peds, #/hr	0	0	0	3	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	34	384	26	22	453

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	884	387	0	0	413	0
Stage 1	387	-	-	-	-	-
Stage 2	497	-	-	-	-	-
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	316	661	-	-	1146	-
Stage 1	686	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	309	659	-	-	1143	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	599	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	309	659	1143	-
HCM Lane V/C Ratio	-	-	0.151	0.052	0.02	-
HCM Control Delay (s)	-	-	18.7	10.8	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.2	0.1	-

4: Murchison Av. & Driveway Performance by movement

Movement	EBR	WBL	WBT	NBL	NBT	All
Denied Del/Veh (s)	0.0	0.4	0.1	0.0	0.0	0.1
Total Del/Veh (s)	0.0	4.5	5.2	0.4	0.3	4.0

APPENDIX 6.2:

OPENING YEAR CUMULATIVE (2022) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	179	268	87	86	117
Future Vol, veh/h	20	179	268	87	86	117
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	229	344	112	110	150
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	11.5	15.2	11.8
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	42%
Vol Right, %	0%	0%	0%	100%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	268	87	20	179	203
LT Vol	268	0	20	0	0
Through Vol	0	87	0	0	86
RT Vol	0	0	0	179	117
Lane Flow Rate	344	112	26	229	260
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.585	0.174	0.049	0.364	0.39
Departure Headway (Hd)	6.127	5.621	6.929	5.712	5.396
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	591	639	517	629	669
Service Time	3.849	3.344	4.664	3.447	3.423
HCM Lane V/C Ratio	0.582	0.175	0.05	0.364	0.389
HCM Control Delay	17.1	9.5	10	11.7	11.8
HCM Lane LOS	C	A	A	B	B
HCM 95th-tile Q	3.8	0.6	0.2	1.7	1.9

Intersection	
Int Delay, s/veh	115.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	7	135	139	74	88	158	232	2	11	218	36
Future Vol, veh/h	34	7	135	139	74	88	158	232	2	11	218	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	9	178	183	97	116	208	305	3	14	287	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1144	1041	287	1132	1038	307	287	0	0	310	0	0
Stage 1	315	315	-	723	723	-	-	-	-	-	-	-
Stage 2	829	726	-	409	315	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	177	230	752	~ 180	231	733	1275	-	-	1250	-	-
Stage 1	696	656	-	417	431	-	-	-	-	-	-	-
Stage 2	365	430	-	619	656	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	78	190	752	~ 115	191	732	1275	-	-	1248	-	-
Mov Cap-2 Maneuver	78	190	-	~ 115	191	-	-	-	-	-	-	-
Stage 1	583	649	-	348	360	-	-	-	-	-	-	-
Stage 2	188	359	-	461	649	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.5	$ 411.7	3.4	0.3
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1275	-	-	87	752	133	732	1248	-	-
HCM Lane V/C Ratio	0.163	-	-	0.62	0.236	2.107	0.158	0.012	-	-
HCM Control Delay (s)	8.4	-	-	98.2	11.3	$ 577.4	10.8	7.9	-	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	2.9	0.9	23	0.6	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	16	377	15	21	470
Future Vol, veh/h	28	16	377	15	21	470
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	20	460	18	26	573

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1085	460	0	0	478	0
Stage 1	460	-	-	-	-	-
Stage 2	625	-	-	-	-	-
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	240	601	-	-	1084	-
Stage 1	636	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	234	601	-	-	1084	-
Mov Cap-2 Maneuver	234	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	521	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.7	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	234	601	1084	-
HCM Lane V/C Ratio	-	-	0.146	0.032	0.024	-
HCM Control Delay (s)	-	-	23	11.2	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

4: Murchison Av. & Driveway & Project Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.3	0.0	0.0	0.1	0.1	0.2
Total Del/Veh (s)	0.3	0.7	4.7	10.5	7.0	0.6	4.9	3.3	7.8

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	221	165	100	61	64
Future Vol, veh/h	31	221	165	100	61	64
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	233	174	105	64	67
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.8	10.2	9.3
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	49%
Vol Right, %	0%	0%	0%	100%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	165	100	31	221	125
LT Vol	165	0	31	0	0
Through Vol	0	100	0	0	61
RT Vol	0	0	0	221	64
Lane Flow Rate	174	105	33	233	132
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.281	0.156	0.055	0.315	0.184
Departure Headway (Hd)	5.824	5.321	6.087	4.879	5.037
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	615	671	587	733	707
Service Time	3.588	3.084	3.839	2.63	3.106
HCM Lane V/C Ratio	0.283	0.156	0.056	0.318	0.187
HCM Control Delay	10.9	9.1	9.2	9.9	9.3
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1.1	0.6	0.2	1.4	0.7

Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	12	116	66	20	29	167	173	6	16	219	48
Future Vol, veh/h	62	12	116	66	20	29	167	173	6	16	219	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	13	130	74	22	33	188	194	7	18	246	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	883	859	246	924	852	194	246	0	0	201	0	0
Stage 1	282	282	-	570	570	-	-	-	-	-	-	-
Stage 2	601	577	-	354	282	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	266	294	793	250	297	847	1320	-	-	1371	-	-
Stage 1	725	678	-	506	505	-	-	-	-	-	-	-
Stage 2	487	502	-	663	678	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	211	249	793	177	252	847	1320	-	-	1371	-	-
Mov Cap-2 Maneuver	211	249	-	177	252	-	-	-	-	-	-	-
Stage 1	622	669	-	434	433	-	-	-	-	-	-	-
Stage 2	381	431	-	536	669	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.7	33.9	3.9	0.4
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1320	-	-	216	793	190	847	1371	-	-
HCM Lane V/C Ratio	0.142	-	-	0.385	0.164	0.509	0.038	0.013	-	-
HCM Control Delay (s)	8.2	-	-	31.7	10.4	42.1	9.4	7.7	-	-
HCM Lane LOS	A	-	-	D	B	E	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	1.7	0.6	2.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	22	323	30	25	374
Future Vol, veh/h	36	22	323	30	25	374
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	28	404	38	31	468

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	934	404	0	0	442	0
Stage 1	404	-	-	-	-	-
Stage 2	530	-	-	-	-	-
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	295	647	-	-	1118	-
Stage 1	674	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	287	647	-	-	1118	-
Mov Cap-2 Maneuver	287	-	-	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	573	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	287	647	1118	-
HCM Lane V/C Ratio	-	-	0.157	0.043	0.028	-
HCM Control Delay (s)	-	-	19.9	10.8	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

4: Murchison Av. & Driveway & Project Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	0.8	1.2	4.4	5.0	4.8	0.5	5.4	2.8	2.9

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	273	174	156	45	0
Future Vol, veh/h	55	273	174	156	45	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	287	183	164	47	0
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.5	10.7	9.2
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	174	156	55	273	45
LT Vol	174	0	55	0	0
Through Vol	0	156	0	0	45
RT Vol	0	0	0	273	0
Lane Flow Rate	183	164	58	287	47
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.302	0.248	0.098	0.389	0.074
Departure Headway (Hd)	5.933	5.429	6.081	4.874	5.615
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	603	657	588	736	631
Service Time	3.709	3.205	3.834	2.626	3.708
HCM Lane V/C Ratio	0.303	0.25	0.099	0.39	0.074
HCM Control Delay	11.3	10	9.5	10.7	9.2
HCM Lane LOS	B	A	A	B	A
HCM 95th-tile Q	1.3	1	0.3	1.8	0.2

Intersection	
Int Delay, s/veh	23.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	11	128	86	35	42	171	221	7	18	237	64
Future Vol, veh/h	66	11	128	86	35	42	171	221	7	18	237	64
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	6	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	13	152	102	42	50	204	263	8	21	282	76

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1052	1016	290	1085	1008	269	289	0	0	277	0	0
Stage 1	331	331	-	677	677	-	-	-	-	-	-	-
Stage 2	721	685	-	408	331	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	204	238	749	194	240	770	1273	-	-	1286	-	-
Stage 1	682	645	-	443	452	-	-	-	-	-	-	-
Stage 2	419	448	-	620	645	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	138	194	743	126	196	766	1265	-	-	1279	-	-
Mov Cap-2 Maneuver	138	194	-	126	196	-	-	-	-	-	-	-
Stage 1	568	630	-	369	377	-	-	-	-	-	-	-
Stage 2	292	374	-	474	630	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.7	109.3	3.6	0.4
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1265	-	-	144	743	141	766	1279	-	-
HCM Lane V/C Ratio	0.161	-	-	0.637	0.205	1.022	0.065	0.017	-	-
HCM Control Delay (s)	8.4	-	-	65.9	11.1	143.8	10	7.9	-	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	3.4	0.8	7.5	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	48	32	367	30	21	430
Future Vol, veh/h	48	32	367	30	21	430
Conflicting Peds, #/hr	0	0	0	3	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	34	390	32	22	457

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	894	393	0	0	425	0
Stage 1	393	-	-	-	-	-
Stage 2	501	-	-	-	-	-
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	312	656	-	-	1134	-
Stage 1	682	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	305	654	-	-	1131	-
Mov Cap-2 Maneuver	305	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	597	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	305	654	1131	-
HCM Lane V/C Ratio	-	-	0.167	0.052	0.02	-
HCM Control Delay (s)	-	-	19.2	10.8	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.2	0.1	-

4: Murchison Av. & Driveway & Project Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	0.7	0.6	4.3	5.5	4.9	0.9	4.5	3.4	4.0

APPENDIX 6.3:

OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT WORKSHEETS

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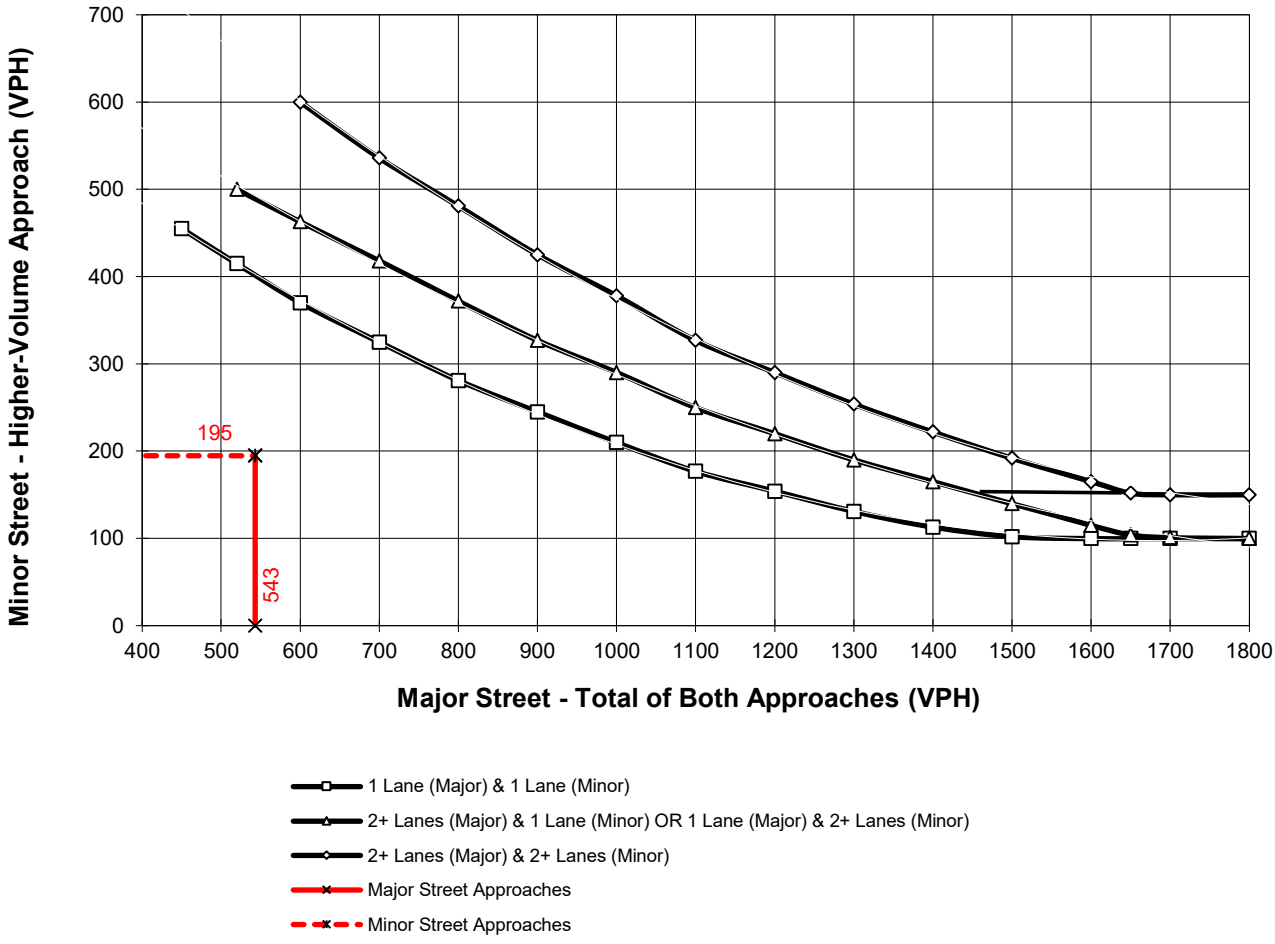
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Opening Year Cumulative (2022) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **543**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Gillette Rd.**
High Volume Approach (VPH) = **195**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

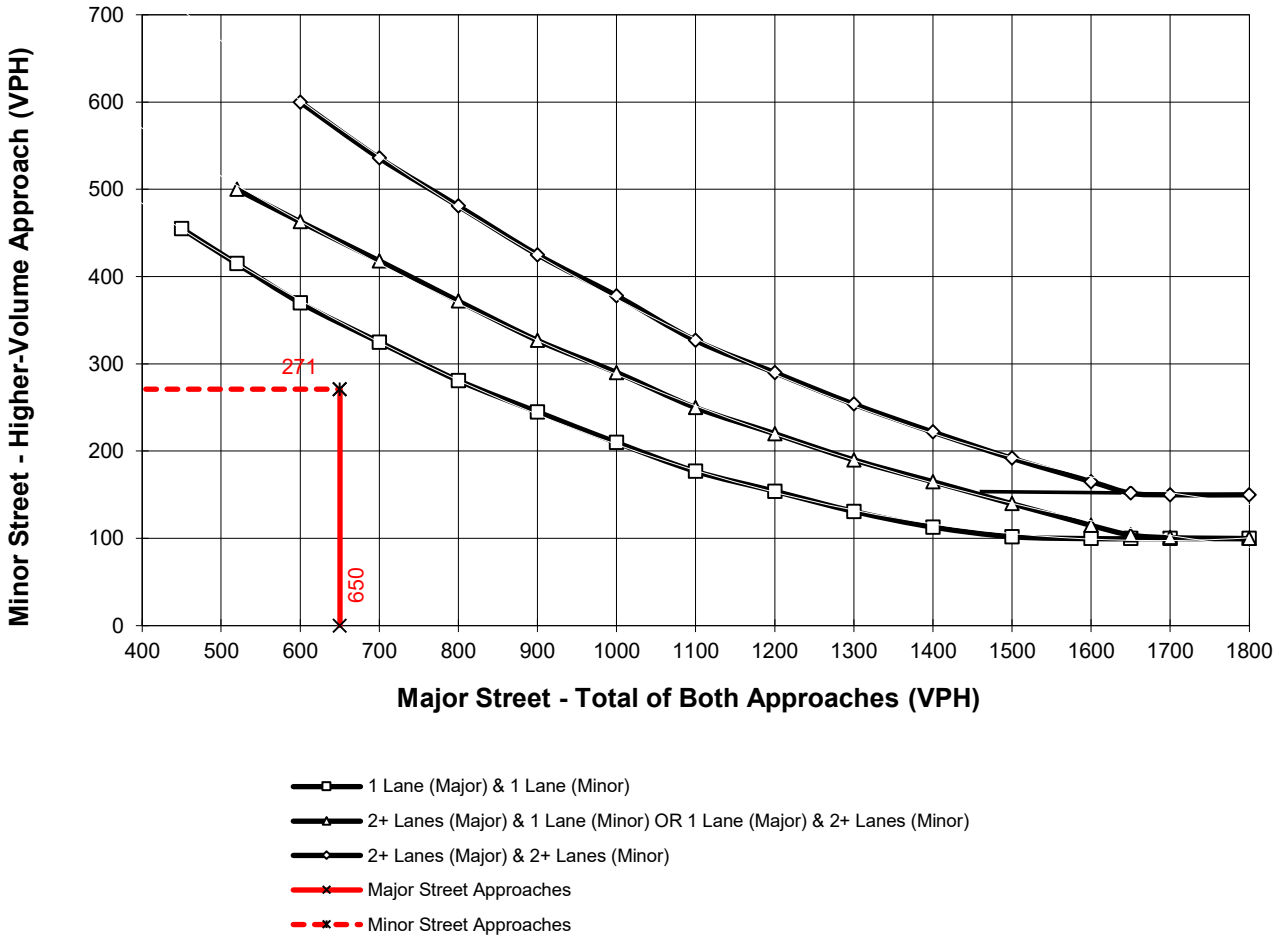
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Opening Year Cumulative (2022) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Dudley St.** Total of Both Approaches (VPH) = **650**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **I-10 EB Ramps/Murchison Av.** High Volume Approach (VPH) = **271**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

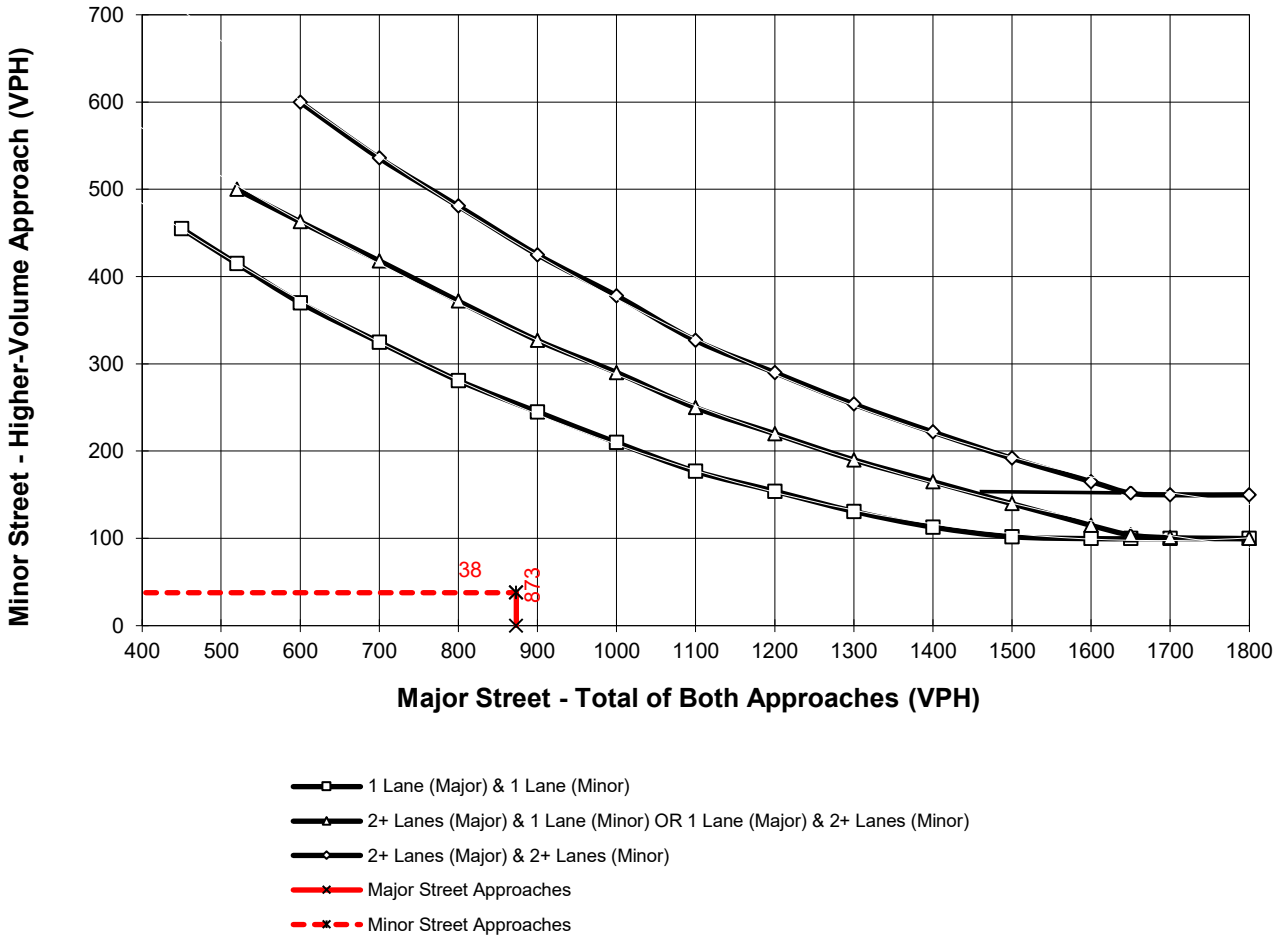
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Opening Year Cumulative (2022) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **873**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Murchison Av.**
High Volume Approach (VPH) = **38**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

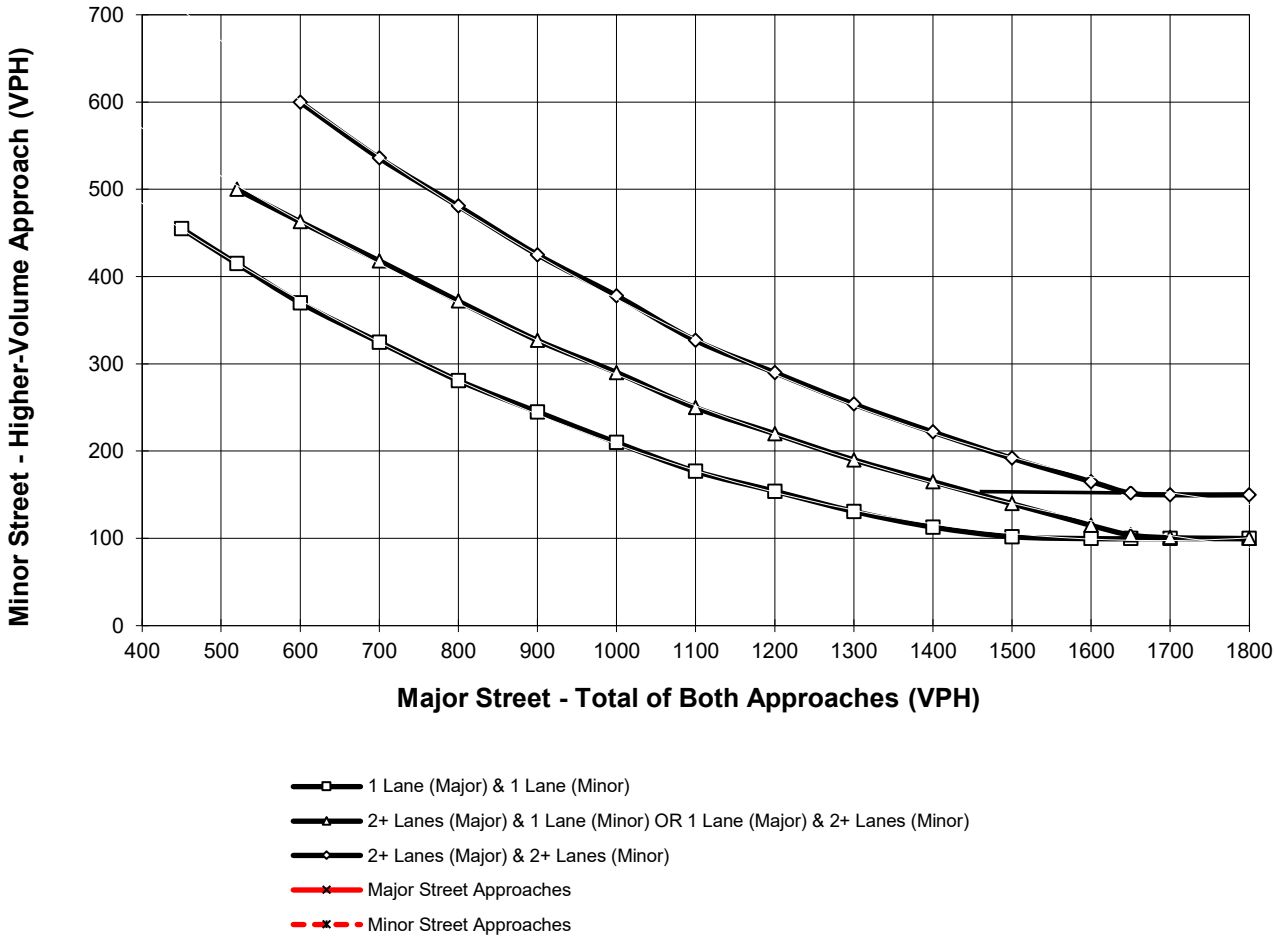
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Opening Year Cumulative (2022) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Murchison Av.**
Total of Both Approaches (VPH) = **330**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Project Driveway**
High Volume Approach (VPH) = **7**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 6.4:

OPENING YEAR CUMULATIVE (2022) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT WORKSHEETS

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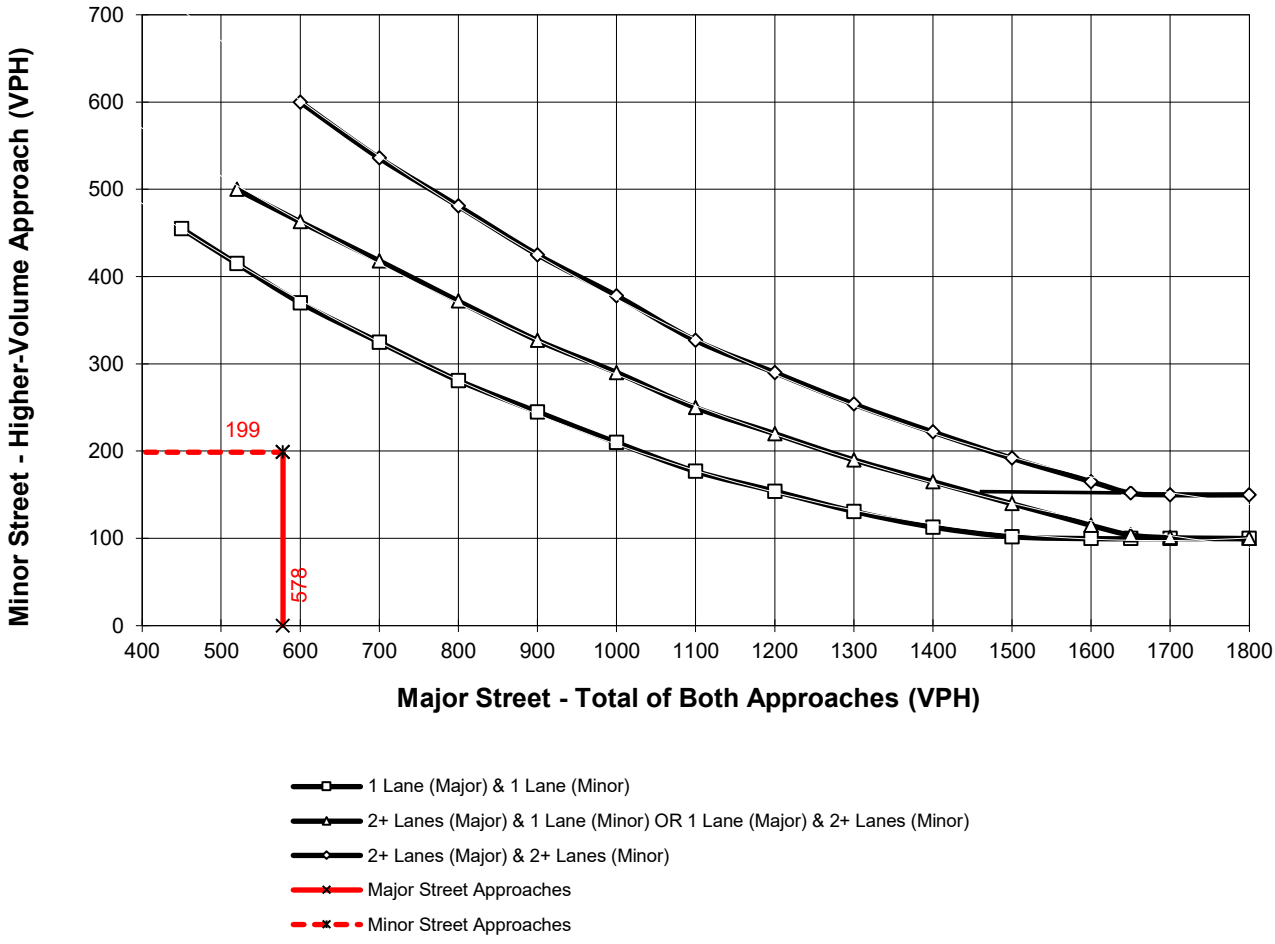
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Opening Year Cumulative (2022) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **578**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Gillette Rd.**
High Volume Approach (VPH) = **199**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

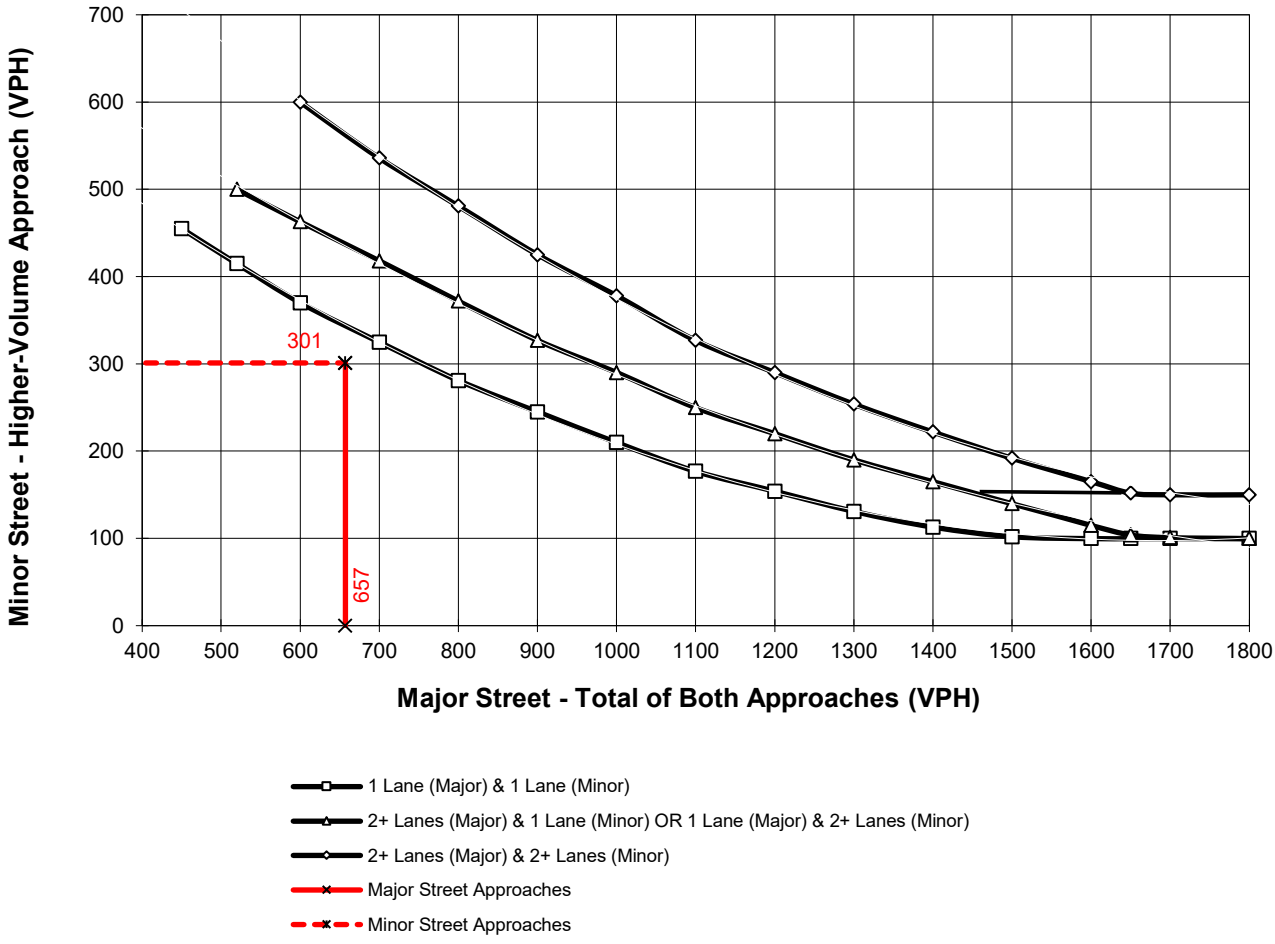
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Opening Year Cumulative (2022) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.** Total of Both Approaches (VPH) = **657**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **I-10 EB Ramps/Murchison Av.** High Volume Approach (VPH) = **301**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

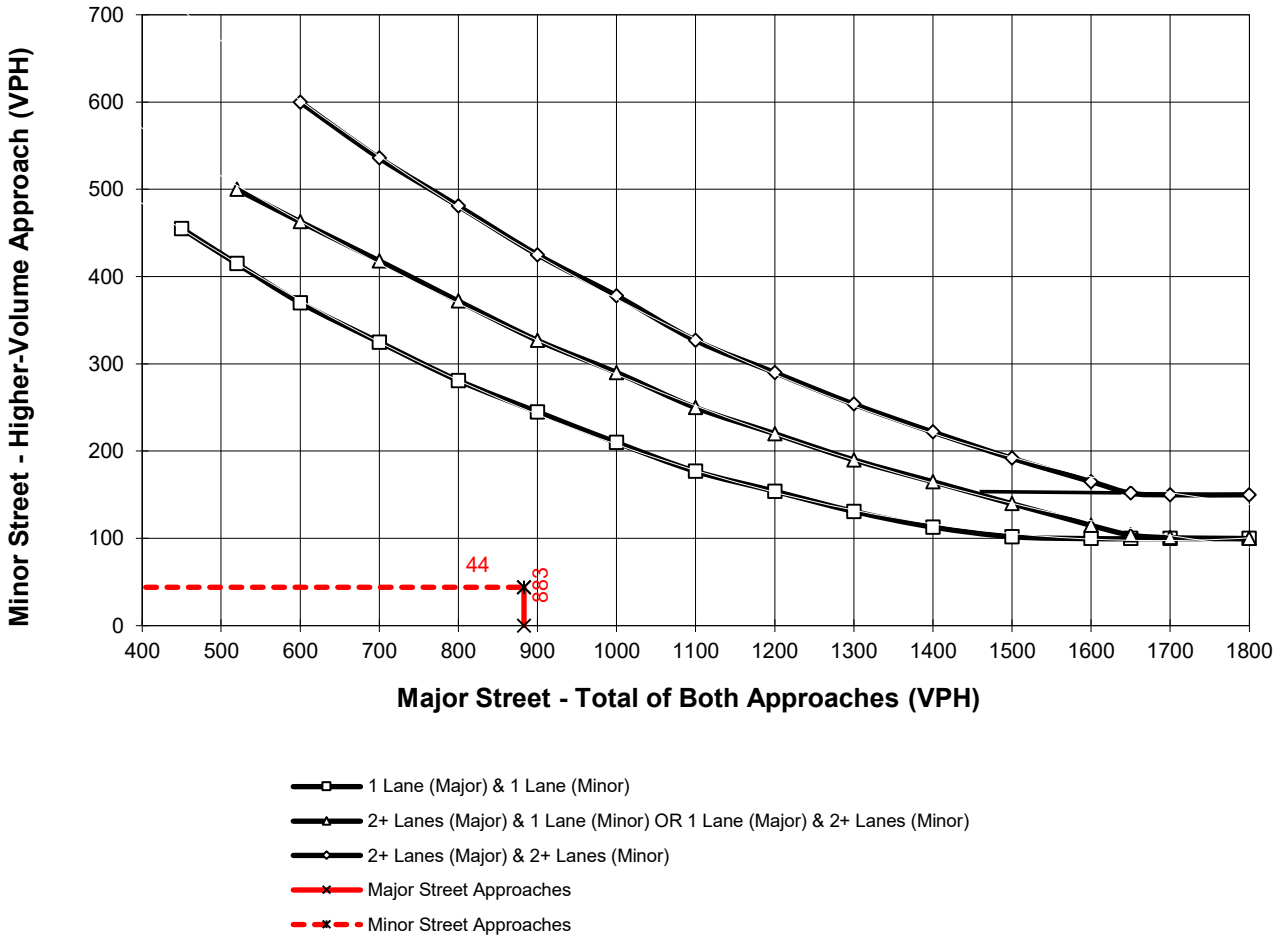
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Opening Year Cumulative (2022) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **883**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Murchison Av.**
High Volume Approach (VPH) = **44**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

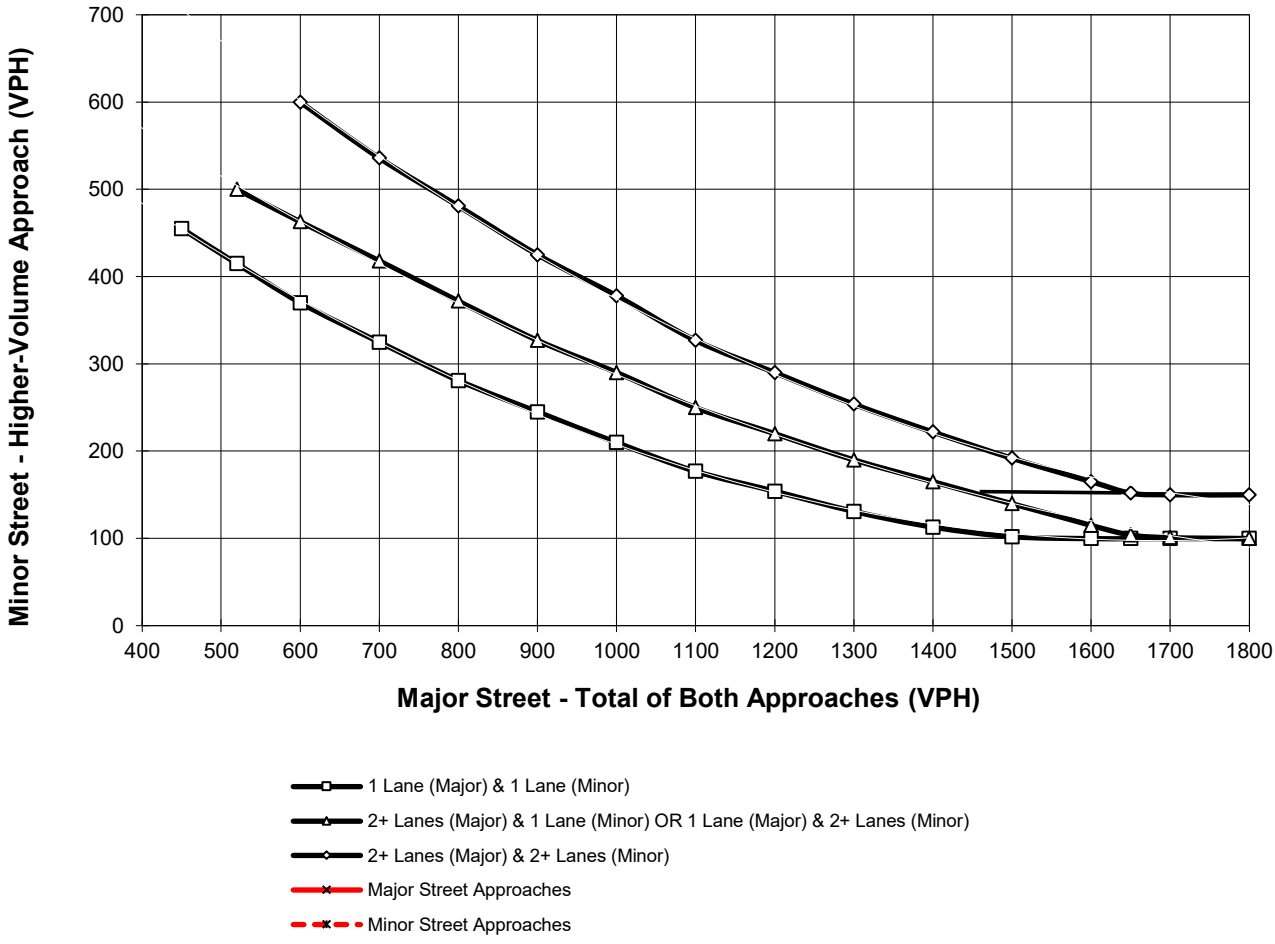
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Opening Year Cumulative (2022) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Murchison Av.**
Total of Both Approaches (VPH) = **341**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Project Driveway**
High Volume Approach (VPH) = **36**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 6.5:

OPENING YEAR CUMULATIVE (2022) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS, WITH IMPROVEMENTS

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Intersection	
Intersection Delay, s/veh	16.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	7	135	139	74	88	158	232	2	11	218	36
Future Vol, veh/h	34	7	135	139	74	88	158	232	2	11	218	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	8	147	151	80	96	172	252	2	12	237	39
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	13.1	16.7	17.3	17.4
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	83%	0%	65%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	17%	0%	35%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	158	232	2	41	135	213	88	11	218	36
LT Vol	158	0	0	34	0	139	0	11	0	0
Through Vol	0	232	0	7	0	74	0	0	218	0
RT Vol	0	0	2	0	135	0	88	0	0	36
Lane Flow Rate	172	252	2	45	147	232	96	12	237	39
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.383	0.527	0.004	0.106	0.302	0.515	0.185	0.028	0.517	0.078
Departure Headway (Hd)	8.031	7.518	6.801	8.537	7.408	8.007	6.972	8.375	7.862	7.143
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	447	479	524	418	483	449	513	426	457	500
Service Time	5.799	5.286	4.568	6.313	5.183	5.775	4.74	6.147	5.633	4.914
HCM Lane V/C Ratio	0.385	0.526	0.004	0.108	0.304	0.517	0.187	0.028	0.519	0.078
HCM Control Delay	15.7	18.4	9.6	12.3	13.4	19	11.3	11.4	18.8	10.5
HCM Lane LOS	C	C	A	B	B	C	B	B	C	B
HCM 95th-tile Q	1.8	3	0	0.4	1.3	2.9	0.7	0.1	2.9	0.3

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	12	116	66	20	29	167	173	6	16	219	48
Future Vol, veh/h	62	12	116	66	20	29	167	173	6	16	219	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	13	126	72	22	32	182	188	7	17	238	52
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	11.2	11.6	13.1	13.6
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	84%	0%	77%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	16%	0%	23%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	167	173	6	74	116	86	29	16	219	48
LT Vol	167	0	0	62	0	66	0	16	0	0
Through Vol	0	173	0	12	0	20	0	0	219	0
RT Vol	0	0	6	0	116	0	29	0	0	48
Lane Flow Rate	182	188	7	80	126	93	32	17	238	52
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.356	0.342	0.011	0.166	0.221	0.197	0.057	0.035	0.444	0.087
Departure Headway (Hd)	7.063	6.556	5.846	7.443	6.319	7.601	6.511	7.223	6.716	6.005
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	506	545	608	479	564	469	545	493	533	592
Service Time	4.843	4.335	3.625	5.233	4.109	5.398	4.307	5.007	4.499	3.788
HCM Lane V/C Ratio	0.36	0.345	0.012	0.167	0.223	0.198	0.059	0.034	0.447	0.088
HCM Control Delay	13.7	12.7	8.7	11.7	10.9	12.3	9.7	10.3	14.8	9.4
HCM Lane LOS	B	B	A	B	B	B	A	B	B	A
HCM 95th-tile Q	1.6	1.5	0	0.6	0.8	0.7	0.2	0.1	2.3	0.3

Intersection	
Intersection Delay, s/veh	15
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	11	128	86	35	42	171	221	7	18	237	64
Future Vol, veh/h	66	11	128	86	35	42	171	221	7	18	237	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	12	139	93	38	46	186	240	8	20	258	70
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	12.6	13.4	15.8	16.2
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	86%	0%	71%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	14%	0%	29%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	171	221	7	77	128	121	42	18	237	64
LT Vol	171	0	0	66	0	86	0	18	0	0
Through Vol	0	221	0	11	0	35	0	0	237	0
RT Vol	0	0	7	0	128	0	42	0	0	64
Lane Flow Rate	186	240	8	84	139	132	46	20	258	70
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.396	0.477	0.014	0.189	0.271	0.299	0.09	0.043	0.527	0.129
Departure Headway (Hd)	7.665	7.155	6.441	8.15	7.012	8.176	7.11	7.876	7.366	6.651
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	470	502	555	440	512	439	503	455	489	538
Service Time	5.416	4.906	4.191	5.905	4.766	5.932	4.866	5.627	5.117	4.401
HCM Lane V/C Ratio	0.396	0.478	0.014	0.191	0.271	0.301	0.091	0.044	0.528	0.13
HCM Control Delay	15.4	16.3	9.3	12.8	12.4	14.4	10.6	11	18.1	10.4
HCM Lane LOS	C	C	A	B	B	B	B	B	C	B
HCM 95th-tile Q	1.9	2.5	0	0.7	1.1	1.2	0.3	0.1	3	0.4

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APPENDIX 7.1:

HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Intersection Delay, s/veh	15.4
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	203	293	91	99	136
Future Vol, veh/h	23	203	293	91	99	136
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	260	376	117	127	174
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	12.8	18.1	13.5
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	42%
Vol Right, %	0%	0%	0%	100%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	293	91	23	203	235
LT Vol	293	0	23	0	0
Through Vol	0	91	0	0	99
RT Vol	0	0	0	203	136
Lane Flow Rate	376	117	29	260	301
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.661	0.189	0.059	0.429	0.469
Departure Headway (Hd)	6.336	5.83	7.156	5.936	5.602
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	571	615	500	606	642
Service Time	4.076	3.569	4.905	3.685	3.645
HCM Lane V/C Ratio	0.658	0.19	0.058	0.429	0.469
HCM Control Delay	20.6	9.9	10.4	13.1	13.5
HCM Lane LOS	C	A	B	B	B
HCM 95th-tile Q	4.9	0.7	0.2	2.1	2.5

Intersection	
Int Delay, s/veh	151.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	4	157	133	64	75	184	270	0	7	253	42
Future Vol, veh/h	39	4	157	133	64	75	184	270	0	7	253	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	5	207	175	84	99	242	355	0	9	333	55

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1282	1192	333	1298	1192	357	333	0	0	357	0	0
Stage 1	351	351	-	841	841	-	-	-	-	-	-	-
Stage 2	931	841	-	457	351	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	142	187	709	~ 139	187	687	1226	-	-	1202	-	-
Stage 1	666	632	-	359	380	-	-	-	-	-	-	-
Stage 2	320	380	-	583	632	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	58	149	709	~ 81	149	686	1226	-	-	1200	-	-
Mov Cap-2 Maneuver	58	149	-	~ 81	149	-	-	-	-	-	-	-
Stage 1	535	628	-	288	304	-	-	-	-	-	-	-
Stage 2	159	304	-	407	628	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	53.8	$ 637.9	3.5	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1226	-	-	61	709	95	686	1200	-	-
HCM Lane V/C Ratio	0.197	-	-	0.928	0.291	2.729	0.144	0.008	-	-
HCM Control Delay (s)	8.7	-	-	205.5	12.2	$ 876.5	11.1	8	-	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	4.3	1.2	24.5	0.5	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	18	435	15	23	520
Future Vol, veh/h	26	18	435	15	23	520
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	22	530	18	28	634

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1220	530	0	0	548	0
Stage 1	530	-	-	-	-	-
Stage 2	690	-	-	-	-	-
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	199	549	-	-	1021	-
Stage 1	590	-	-	-	-	-
Stage 2	498	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	194	549	-	-	1021	-
Mov Cap-2 Maneuver	194	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	485	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.8	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	194	549	1021	-
HCM Lane V/C Ratio	-	-	0.163	0.04	0.027	-
HCM Control Delay (s)	-	-	27.1	11.8	8.6	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0.1	-

4: Murchison Av. & Driveway Performance by movement

Movement	EBR	WBL	WBT	NBL	NBT	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.0	0.0	0.2
Total Del/Veh (s)	0.4	4.6	10.4	7.6	0.3	8.2

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	36	245	183	110	67	74
Future Vol, veh/h	36	245	183	110	67	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	258	193	116	71	78
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.4	10.7	9.7
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	48%
Vol Right, %	0%	0%	0%	100%	52%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	110	36	245	141
LT Vol	183	0	36	0	0
Through Vol	0	110	0	0	67
RT Vol	0	0	0	245	74
Lane Flow Rate	193	116	38	258	148
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.318	0.175	0.065	0.358	0.213
Departure Headway (Hd)	5.934	5.43	6.207	4.997	5.157
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	601	655	574	714	689
Service Time	3.715	3.211	3.975	2.765	3.244
HCM Lane V/C Ratio	0.321	0.177	0.066	0.361	0.215
HCM Control Delay	11.5	9.4	9.4	10.6	9.7
HCM Lane LOS	B	A	A	B	A
HCM 95th-tile Q	1.4	0.6	0.2	1.6	0.8

Intersection	
Int Delay, s/veh	9.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	2	134	62	13	20	193	201	0	2	254	55
Future Vol, veh/h	71	2	134	62	13	20	193	201	0	2	254	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	2	151	70	15	22	217	226	0	2	285	62

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	968	949	285	1026	949	226	285	0	0	226	0	0
Stage 1	289	289	-	660	660	-	-	-	-	-	-	-
Stage 2	679	660	-	366	289	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	233	260	754	213	260	813	1277	-	-	1342	-	-
Stage 1	719	673	-	452	460	-	-	-	-	-	-	-
Stage 2	441	460	-	653	673	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	216	754	147	216	813	1277	-	-	1342	-	-
Mov Cap-2 Maneuver	187	216	-	147	216	-	-	-	-	-	-	-
Stage 1	597	672	-	375	382	-	-	-	-	-	-	-
Stage 2	342	382	-	520	672	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.6	43.3	4.1	0
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1277	-	-	188	754	156	813	1342	-	-
HCM Lane V/C Ratio	0.17	-	-	0.436	0.2	0.54	0.028	0.002	-	-
HCM Control Delay (s)	8.4	-	-	38.2	11	52.3	9.6	7.7	-	-
HCM Lane LOS	A	-	-	E	B	F	A	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	2	0.7	2.7	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	26	368	28	28	423
Future Vol, veh/h	37	26	368	28	28	423
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	33	460	35	35	529

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1059	460	0	0	495	0
Stage 1	460	-	-	-	-	-
Stage 2	599	-	-	-	-	-
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	249	601	-	-	1069	-
Stage 1	636	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	241	601	-	-	1069	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	531	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.5	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	241	601	1069	-
HCM Lane V/C Ratio	-	-	0.192	0.054	0.033	-
HCM Control Delay (s)	-	-	23.5	11.3	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.2	0.1	-

4: Murchison Av. & Driveway Performance by movement

Movement	EBR	WBL	WBT	NBL	NBT	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0	0.0	0.1
Total Del/Veh (s)	1.1	4.2	4.7	0.2	0.3	2.7

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	64	306	193	177	48	0
Future Vol, veh/h	64	306	193	177	48	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	322	203	186	51	0
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	11.5	11.3	9.4
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	193	177	64	306	48
LT Vol	193	0	64	0	0
Through Vol	0	177	0	0	48
RT Vol	0	0	0	306	0
Lane Flow Rate	203	186	67	322	51
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.342	0.287	0.116	0.447	0.083
Departure Headway (Hd)	6.058	5.554	6.201	4.993	5.904
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	587	641	575	715	610
Service Time	3.854	3.349	3.971	2.762	3.904
HCM Lane V/C Ratio	0.346	0.29	0.117	0.45	0.084
HCM Control Delay	12	10.6	9.8	11.8	9.4
HCM Lane LOS	B	B	A	B	A
HCM 95th-tile Q	1.5	1.2	0.4	2.3	0.3

Intersection	
Int Delay, s/veh	30.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	1	149	83	28	33	198	256	1	5	275	74
Future Vol, veh/h	76	1	149	83	28	33	198	256	1	5	275	74
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	6	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	1	177	99	33	39	236	305	1	6	327	88

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1160	1130	335	1212	1129	311	334	0	0	312	0	0
Stage 1	346	346	-	783	783	-	-	-	-	-	-	-
Stage 2	814	784	-	429	346	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	172	204	707	159	204	729	1225	-	-	1248	-	-
Stage 1	670	635	-	387	404	-	-	-	-	-	-	-
Stage 2	372	404	-	604	635	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	116	162	702	100	162	725	1217	-	-	1241	-	-
Mov Cap-2 Maneuver	116	162	-	100	162	-	-	-	-	-	-	-
Stage 1	537	627	-	310	324	-	-	-	-	-	-	-
Stage 2	254	324	-	448	627	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43.3	171.1	3.8	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1217	-	-	116	702	111	725	1241	-	-
HCM Lane V/C Ratio	0.194	-	-	0.79	0.253	1.19	0.054	0.005	-	-
HCM Control Delay (s)	8.7	-	-	104	11.9	218.9	10.3	7.9	-	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	4.5	1	8.5	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	51	37	419	28	23	484
Future Vol, veh/h	51	37	419	28	23	484
Conflicting Peds, #/hr	0	0	0	3	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	39	446	30	24	515

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1012	449	0	0	479	0
Stage 1	449	-	-	-	-	-
Stage 2	563	-	-	-	-	-
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	265	610	-	-	1083	-
Stage 1	643	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	258	608	-	-	1080	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	557	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.8	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	258	608	1080	-
HCM Lane V/C Ratio	-	-	0.21	0.065	0.023	-
HCM Control Delay (s)	-	-	22.6	11.3	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.2	0.1	-

4: Murchison Av. & Driveway Performance by movement

Movement	EBR	WBL	WBT	NBL	NBT	All
Denied Del/Veh (s)	0.0	0.1	0.2	0.0	0.0	0.1
Total Del/Veh (s)	0.0	4.4	6.2	0.6	0.3	4.7

APPENDIX 7.2:

HORIZON YEAR (2040) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	207	303	95	100	136
Future Vol, veh/h	23	207	303	95	100	136
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	265	388	122	128	174
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	13.1	19.2	13.7
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	42%
Vol Right, %	0%	0%	0%	100%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	303	95	23	207	236
LT Vol	303	0	23	0	0
Through Vol	0	95	0	0	100
RT Vol	0	0	0	207	136
Lane Flow Rate	388	122	29	265	303
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.687	0.198	0.059	0.441	0.475
Departure Headway (Hd)	6.37	5.863	7.208	5.989	5.655
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	567	611	497	600	635
Service Time	4.108	3.601	4.958	3.738	3.697
HCM Lane V/C Ratio	0.684	0.2	0.058	0.442	0.477
HCM Control Delay	22	10.1	10.4	13.4	13.7
HCM Lane LOS	C	B	B	B	B
HCM 95th-tile Q	5.3	0.7	0.2	2.2	2.6

Intersection	
Int Delay, s/veh	189.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	8	157	139	74	89	184	270	2	12	253	42
Future Vol, veh/h	39	8	157	139	74	89	184	270	2	12	253	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	11	207	183	97	117	242	355	3	16	333	55

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1313	1209	333	1315	1206	357	333	0	0	360	0	0
Stage 1	365	365	-	841	841	-	-	-	-	-	-	-
Stage 2	948	844	-	474	365	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	135	183	709	~ 135	184	687	1226	-	-	1199	-	-
Stage 1	654	623	-	359	380	-	-	-	-	-	-	-
Stage 2	313	379	-	571	623	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 45	145	709	~ 76	146	686	1226	-	-	1197	-	-
Mov Cap-2 Maneuver	~ 45	145	-	~ 76	146	-	-	-	-	-	-	-
Stage 1	525	615	-	288	304	-	-	-	-	-	-	-
Stage 2	142	304	-	392	615	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	84.4	$ 733.9	3.5	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1226	-	-	51	709	91	686	1197	-	-
HCM Lane V/C Ratio	0.197	-	-	1.213	0.291	3.08	0.171	0.013	-	-
HCM Control Delay (s)	8.7	-	-	$ 325.4	12.2	$ 1035.8	11.3	8	-	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	5.5	1.2	27.5	0.6	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	18	437	17	23	526
Future Vol, veh/h	32	18	437	17	23	526
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	22	533	21	28	641

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1230	533	0	0	554	0
Stage 1	533	-	-	-	-	-
Stage 2	697	-	-	-	-	-
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	196	547	-	-	1016	-
Stage 1	588	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	191	547	-	-	1016	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	480	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.6	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	191	547	1016	-
HCM Lane V/C Ratio	-	-	0.204	0.04	0.028	-
HCM Control Delay (s)	-	-	28.6	11.9	8.6	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	0.1	-

4: Murchison Av. & Driveway & Project Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.1	0.2
Total Del/Veh (s)	1.2	0.6	5.0	14.6	9.3	0.5	4.6	9.4	10.6

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	36	255	190	113	71	74
Future Vol, veh/h	36	255	190	113	71	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	268	200	119	75	78
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.6	10.9	9.8
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	49%
Vol Right, %	0%	0%	0%	100%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	190	113	36	255	145
LT Vol	190	0	36	0	0
Through Vol	0	113	0	0	71
RT Vol	0	0	0	255	74
Lane Flow Rate	200	119	38	268	153
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.332	0.181	0.066	0.375	0.221
Departure Headway (Hd)	5.97	5.466	6.245	5.036	5.21
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	598	651	570	709	681
Service Time	3.758	3.253	4.019	2.809	3.304
HCM Lane V/C Ratio	0.334	0.183	0.067	0.378	0.225
HCM Control Delay	11.7	9.5	9.5	10.8	9.8
HCM Lane LOS	B	A	A	B	A
HCM 95th-tile Q	1.4	0.7	0.2	1.7	0.8

Intersection	
Int Delay, s/veh	12.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	12	134	66	20	29	193	201	6	16	254	55
Future Vol, veh/h	71	12	134	66	20	29	193	201	6	16	254	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	13	151	74	22	33	217	226	7	18	285	62

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1012	988	285	1063	981	226	285	0	0	233	0	0
Stage 1	321	321	-	660	660	-	-	-	-	-	-	-
Stage 2	691	667	-	403	321	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	218	247	754	201	249	813	1277	-	-	1335	-	-
Stage 1	691	652	-	452	460	-	-	-	-	-	-	-
Stage 2	435	457	-	624	652	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	165	202	754	132	204	813	1277	-	-	1335	-	-
Mov Cap-2 Maneuver	165	202	-	132	204	-	-	-	-	-	-	-
Stage 1	574	644	-	375	382	-	-	-	-	-	-	-
Stage 2	326	379	-	482	644	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.8	54.8	4.1	0.4
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1277	-	-	169	754	144	813	1335	-	-
HCM Lane V/C Ratio	0.17	-	-	0.552	0.2	0.671	0.04	0.013	-	-
HCM Control Delay (s)	8.4	-	-	49.8	11	70.1	9.6	7.7	-	-
HCM Lane LOS	A	-	-	E	B	F	A	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	2.8	0.7	3.7	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	26	374	34	28	427
Future Vol, veh/h	41	26	374	34	28	427
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	33	468	43	35	534

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1072	468	0	0	511	0
Stage 1	468	-	-	-	-	-
Stage 2	604	-	-	-	-	-
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	244	595	-	-	1054	-
Stage 1	630	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	236	595	-	-	1054	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	528	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.4	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	236	595	1054	-
HCM Lane V/C Ratio	-	-	0.217	0.055	0.033	-
HCM Control Delay (s)	-	-	24.4	11.4	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.2	0.1	-

4: Murchison Av. & Driveway & Project Driveway Performance by movement

Movement	EBL	EBR	WBT	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	0.9	0.0	5.4	4.7	0.9	4.7	3.1	3.4

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	64	316	200	180	52	0
Future Vol, veh/h	64	316	200	180	52	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	333	211	189	55	0
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	11.8	11.6	9.6
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	200	180	64	316	52
LT Vol	200	0	64	0	0
Through Vol	0	180	0	0	52
RT Vol	0	0	0	316	0
Lane Flow Rate	211	189	67	333	55
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.362	0.299	0.117	0.465	0.091
Departure Headway (Hd)	6.194	5.69	6.242	5.033	5.956
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	583	635	569	709	604
Service Time	3.896	3.391	4.032	2.823	3.964
HCM Lane V/C Ratio	0.362	0.298	0.118	0.47	0.091
HCM Control Delay	12.4	10.8	9.9	12.2	9.6
HCM Lane LOS	B	B	A	B	A
HCM 95th-tile Q	1.6	1.3	0.4	2.5	0.3

Intersection	
Int Delay, s/veh	48

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	11	149	87	35	42	198	256	7	19	275	74
Future Vol, veh/h	76	11	149	87	35	42	198	256	7	19	275	74
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	6	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	0	-	-	0	60	-	0	80	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	13	177	104	42	50	236	305	8	23	327	88

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1207	1171	335	1252	1163	311	334	0	0	319	0	0
Stage 1	380	380	-	783	783	-	-	-	-	-	-	-
Stage 2	827	791	-	469	380	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	160	193	707	149	195	729	1225	-	-	1241	-	-
Stage 1	642	614	-	387	404	-	-	-	-	-	-	-
Stage 2	366	401	-	575	614	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	99	151	702	~ 87	152	725	1217	-	-	1234	-	-
Mov Cap-2 Maneuver	99	151	-	~ 87	152	-	-	-	-	-	-	-
Stage 1	514	598	-	310	324	-	-	-	-	-	-	-
Stage 2	239	321	-	412	598	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	67.7	250.9	3.7	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1217	-	-	104	702	99	725	1234	-	-
HCM Lane V/C Ratio	0.194	-	-	0.996	0.253	1.467	0.069	0.018	-	-
HCM Control Delay (s)	8.7	-	-	163.2	11.9	$ 333.7	10.3	8	-	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	6.2	1	10.8	0.2	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	37	425	34	23	488
Future Vol, veh/h	55	37	425	34	23	488
Conflicting Peds, #/hr	0	0	0	3	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	39	452	36	24	519

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1022	455	0	0	491	0
Stage 1	455	-	-	-	-	-
Stage 2	567	-	-	-	-	-
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	261	605	-	-	1072	-
Stage 1	639	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	254	603	-	-	1069	-
Mov Cap-2 Maneuver	254	-	-	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	556	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.6	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	254	603	1069	-
HCM Lane V/C Ratio	-	-	0.23	0.065	0.023	-
HCM Control Delay (s)	-	-	23.4	11.4	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.2	0.1	-

4: Murchison Av. & Driveway & Project Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	0.5	0.5	4.5	6.1	4.8	1.1	4.4	7.3	4.7

APPENDIX 7.3:

HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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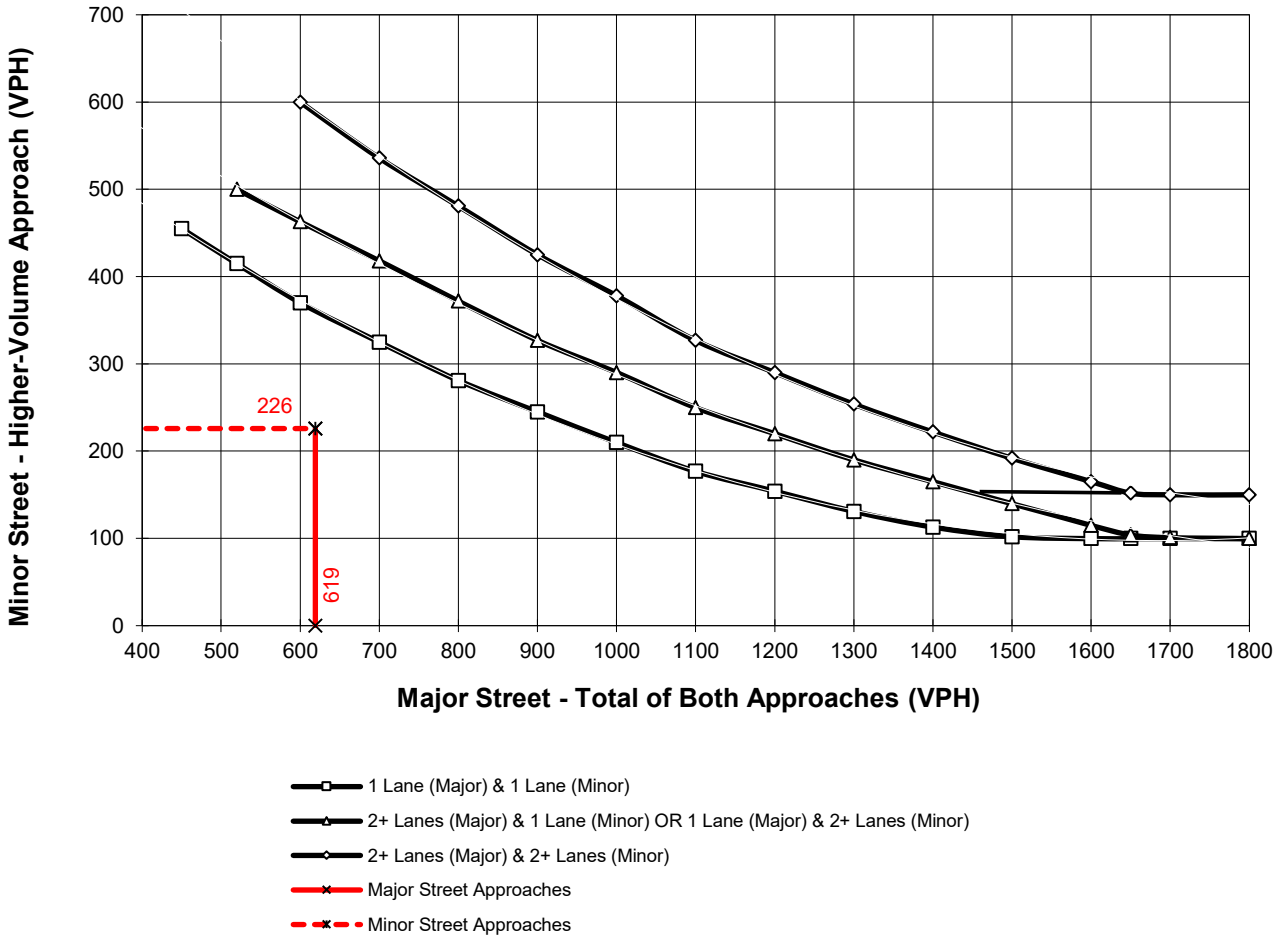
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Horizon Year (2040) Without Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **619**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Gillette Rd.**
High Volume Approach (VPH) = **226**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

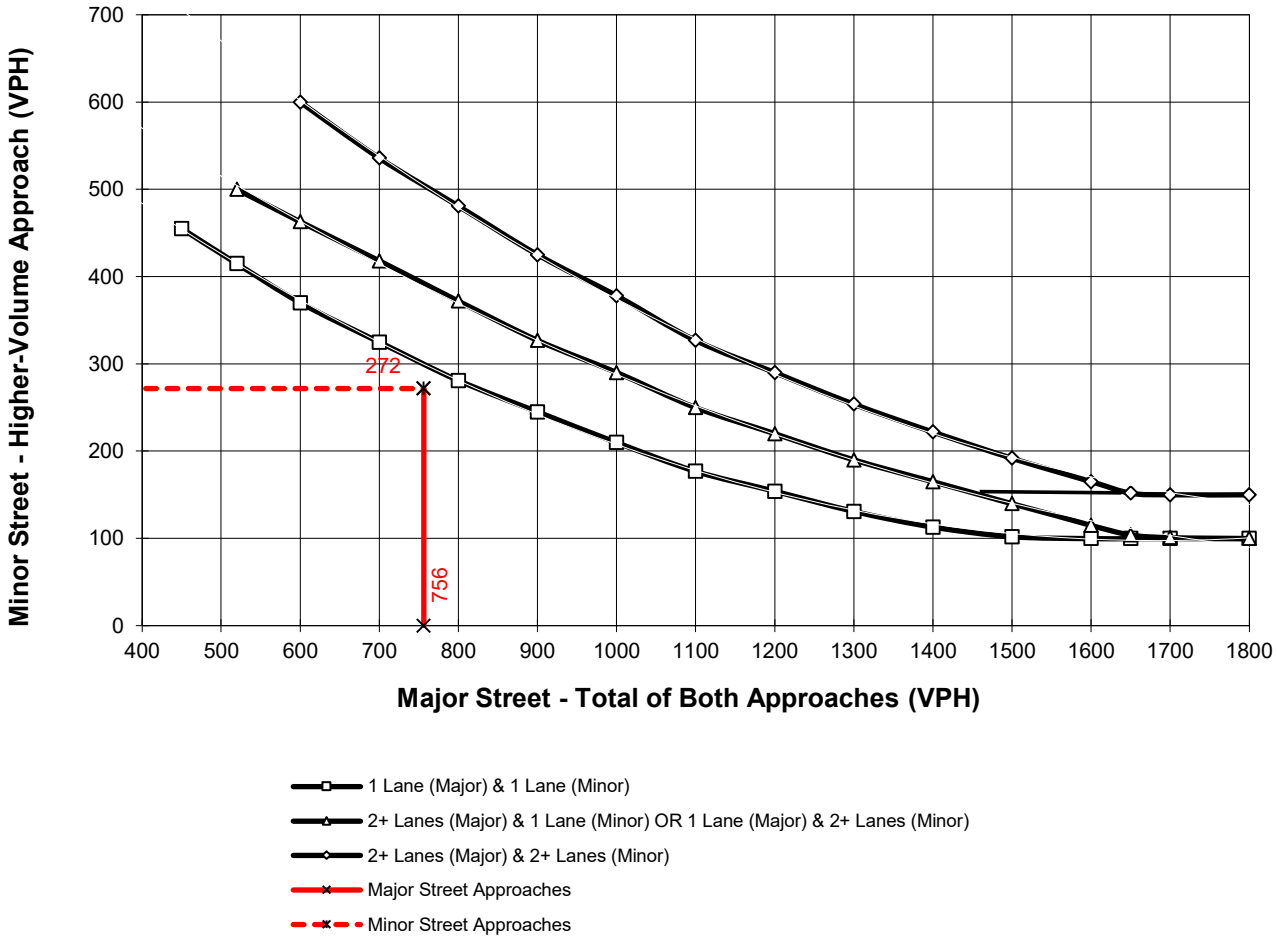
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Horizon Year (2040) Without Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.** Total of Both Approaches (VPH) = **756**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **I-10 EB Ramps/Murchison Av.** High Volume Approach (VPH) = **272**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

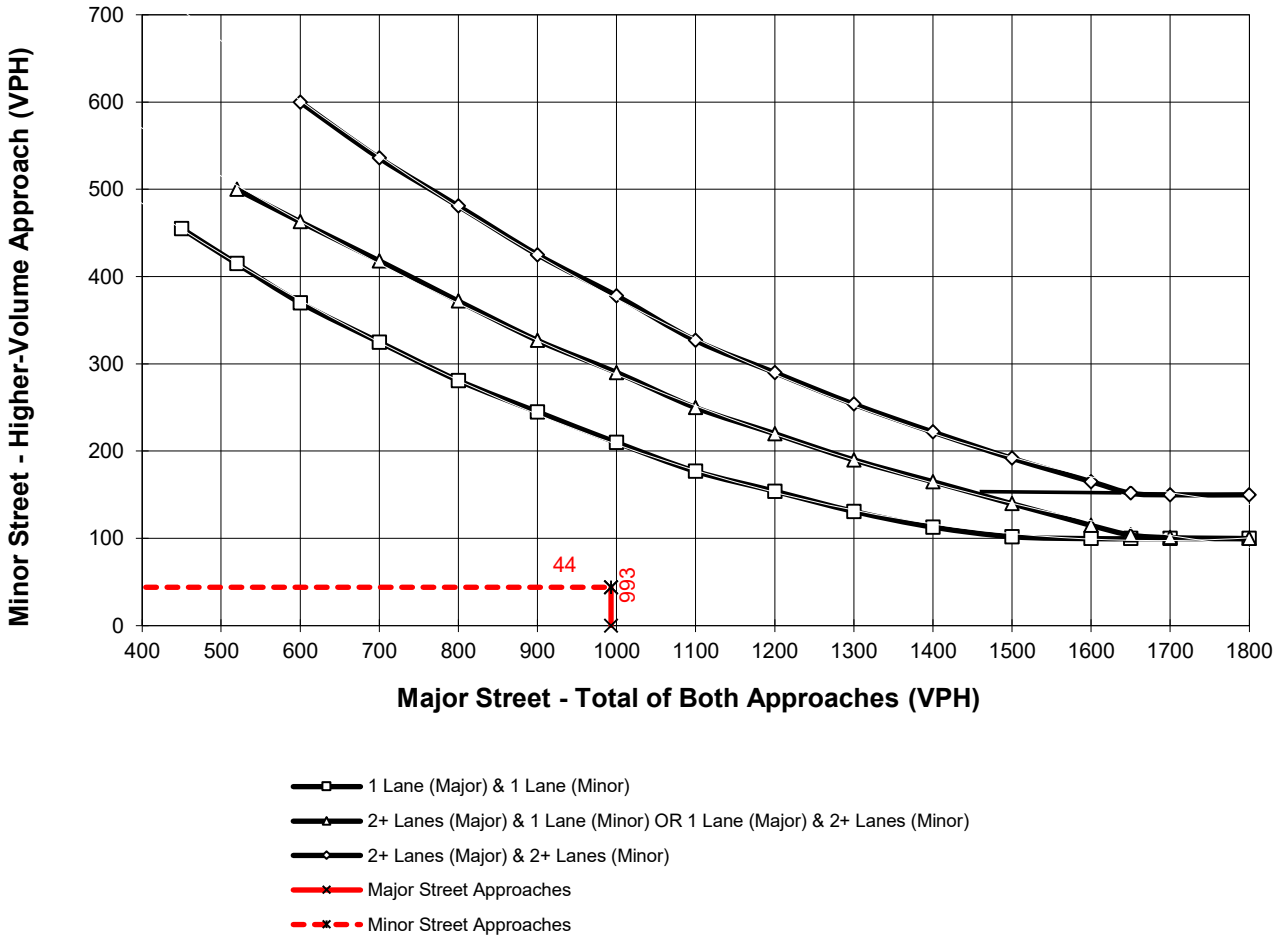
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Horizon Year (2040) Without Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **993**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Murchison Av.**
High Volume Approach (VPH) = **44**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

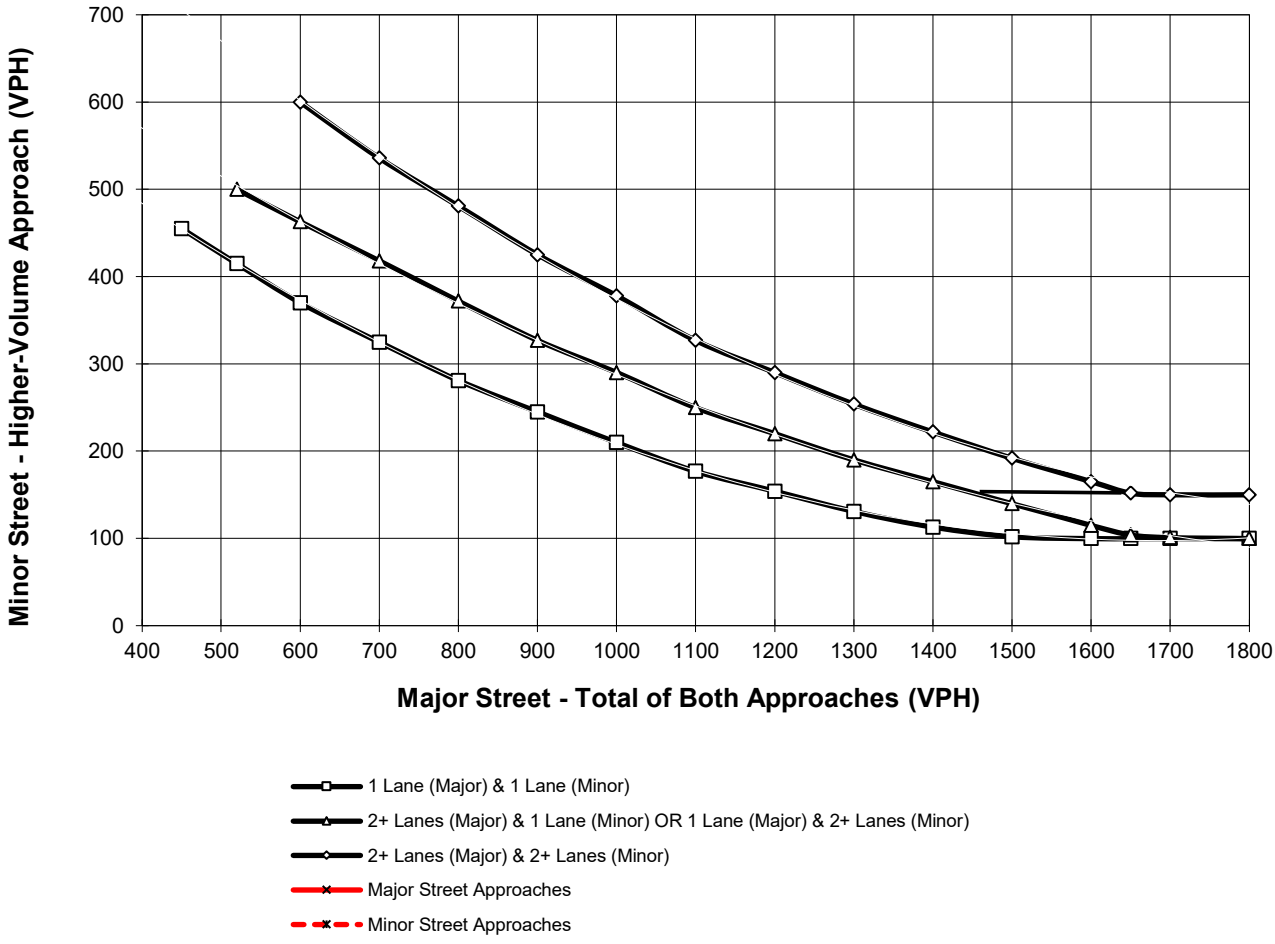
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Horizon Year (2040) Without Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Murchison Av.**
Total of Both Approaches (VPH) = **331**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Project Driveway**
High Volume Approach (VPH) = **9**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 7.4:

HORIZON YEAR (2040) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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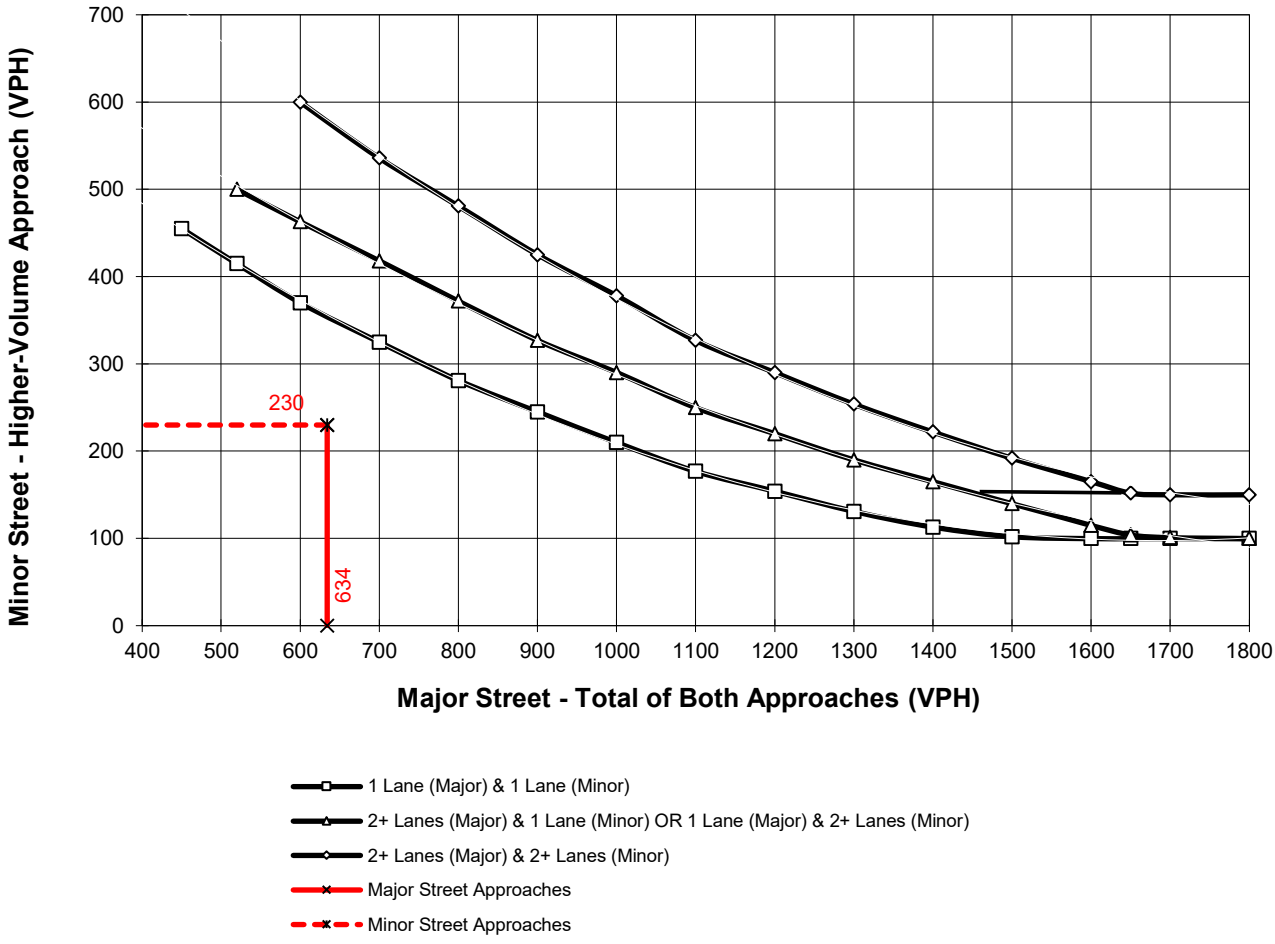
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Horizon Year (2040) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **634**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Gillette Rd.**
High Volume Approach (VPH) = **230**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

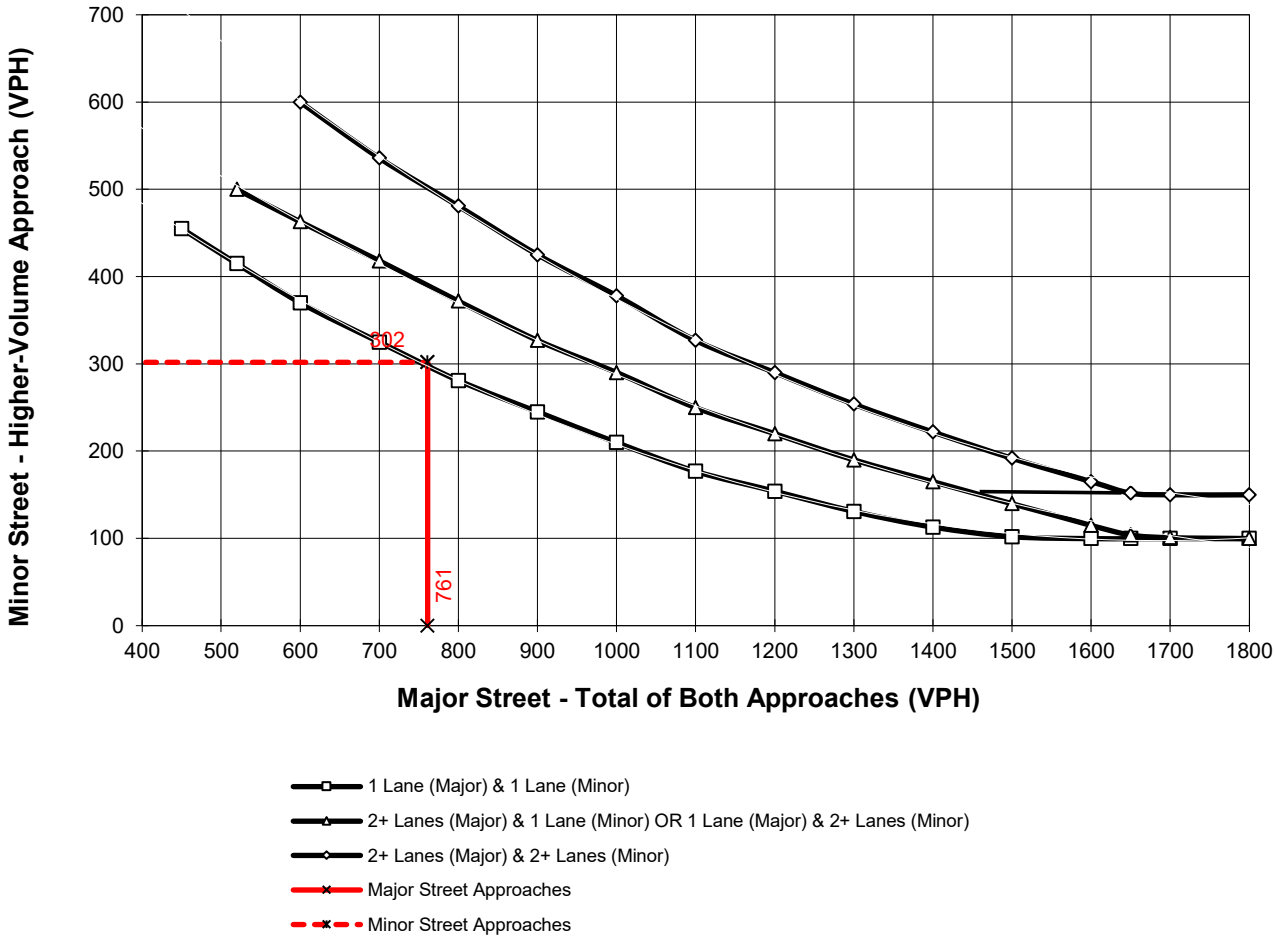
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Horizon Year (2040) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **761**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **I-10 EB Ramps/Murchison Av.**
High Volume Approach (VPH) = **302**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

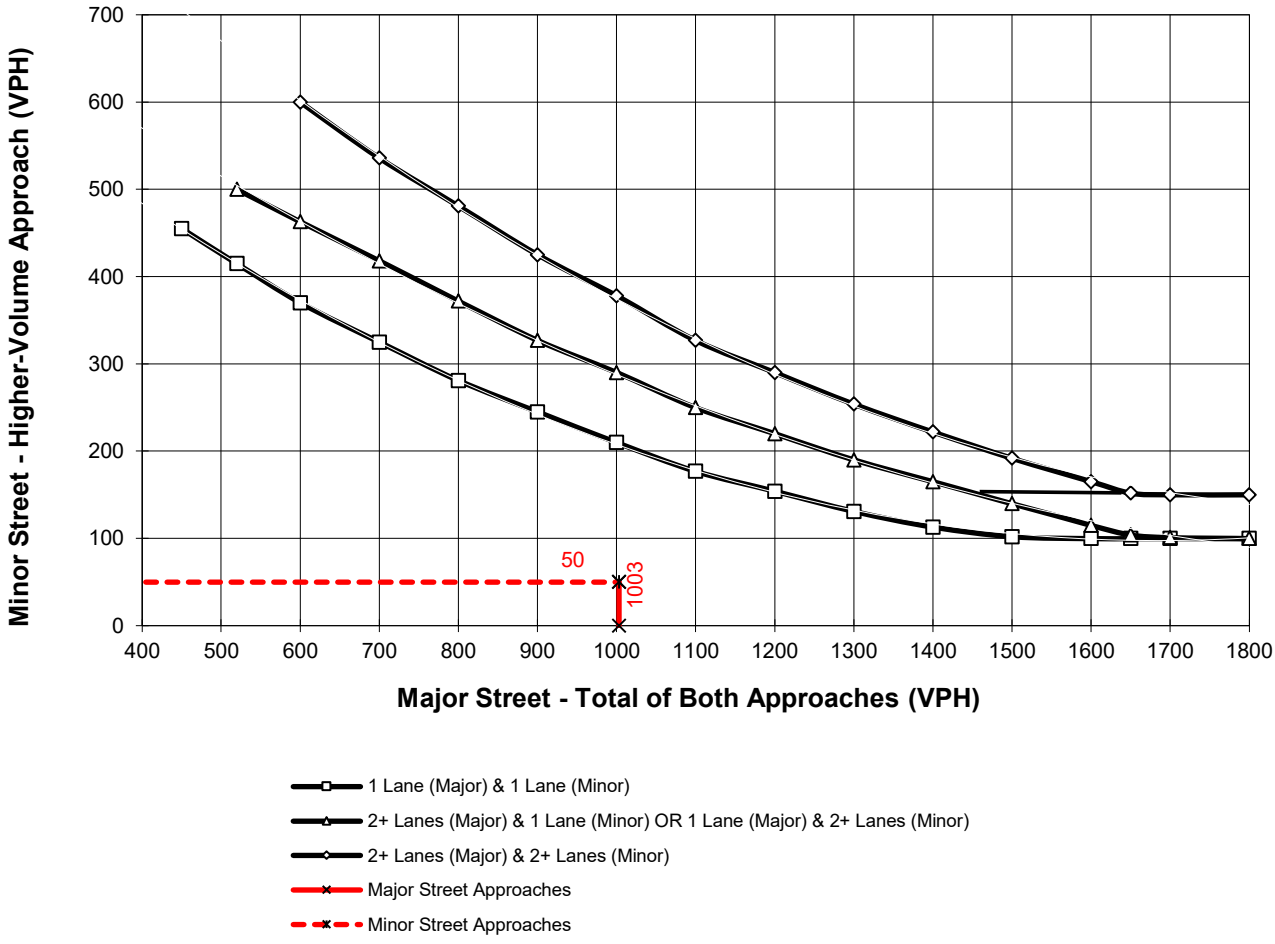
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Horizon Year (2040) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Dudley St.**
Total of Both Approaches (VPH) = **1003**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Murchison Av.**
High Volume Approach (VPH) = **50**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

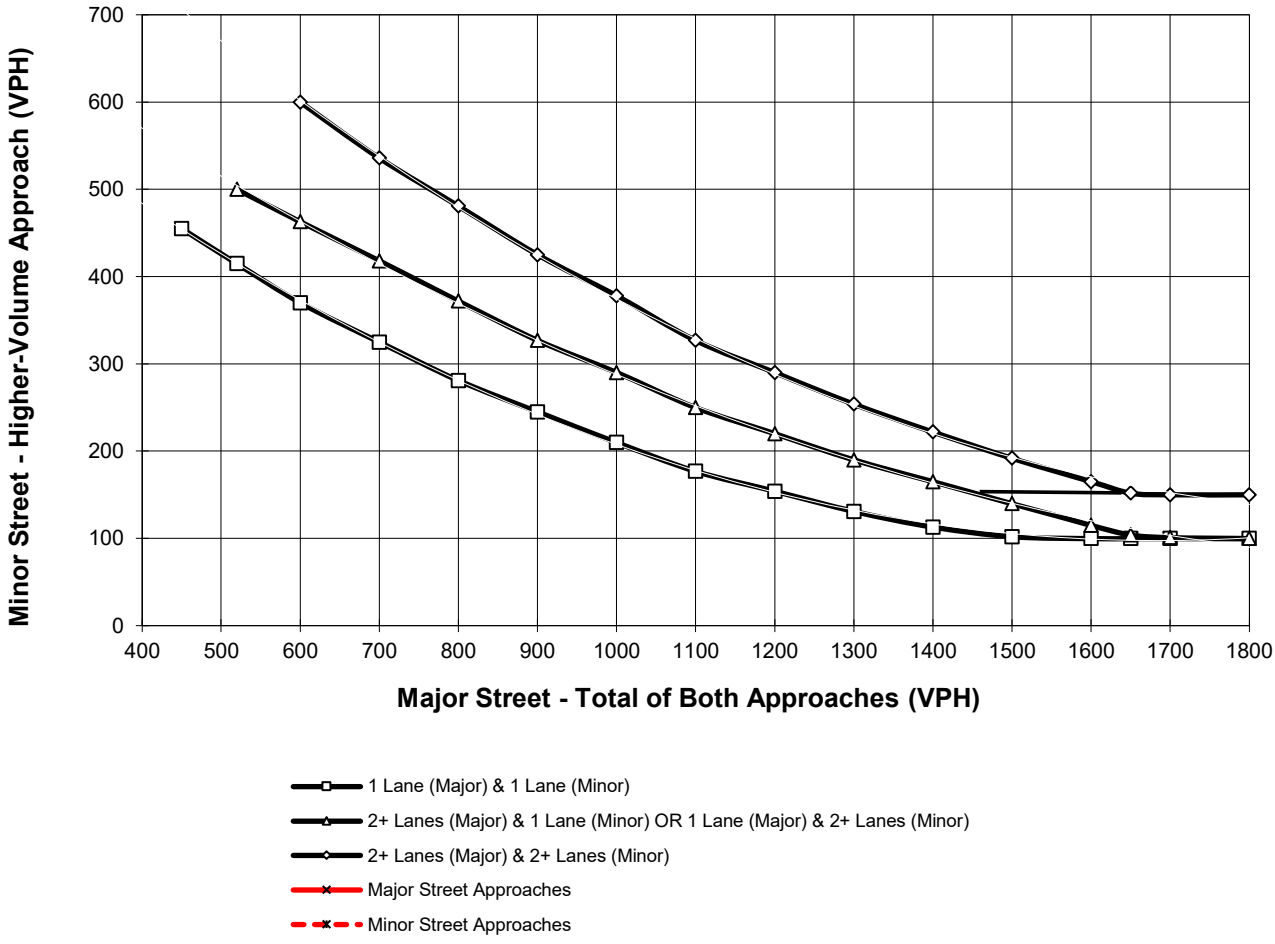
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Horizon Year (2040) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Murchison Av.**
Total of Both Approaches (VPH) = **342**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Project Driveway**
High Volume Approach (VPH) = **36**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 7.5:

HORIZON YEAR (2040) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS, WITH IMPROVEMENTS

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Intersection	
Intersection Delay, s/veh	20.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	8	157	139	74	89	184	270	2	12	253	42
Future Vol, veh/h	39	8	157	139	74	89	184	270	2	12	253	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	9	171	151	80	97	200	293	2	13	275	46
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	15.2	19.3	22.6	23.1
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	83%	0%	65%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	17%	0%	35%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	184	270	2	47	157	213	89	12	253	42
LT Vol	184	0	0	39	0	139	0	12	0	0
Through Vol	0	270	0	8	0	74	0	0	253	0
RT Vol	0	0	2	0	157	0	89	0	0	42
Lane Flow Rate	200	293	2	51	171	232	97	13	275	46
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.478	0.659	0.004	0.131	0.384	0.563	0.207	0.033	0.648	0.098
Departure Headway (Hd)	8.603	8.088	7.367	9.235	8.101	8.747	7.707	9	8.484	7.761
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	420	446	486	388	444	412	466	398	426	462
Service Time	6.348	5.832	5.11	6.985	5.85	6.492	5.451	6.747	6.23	5.507
HCM Lane V/C Ratio	0.476	0.657	0.004	0.131	0.385	0.563	0.208	0.033	0.646	0.1
HCM Control Delay	19	25.2	10.1	13.4	15.8	22.2	12.5	12.1	25.6	11.4
HCM Lane LOS	C	D	B	B	C	C	B	B	D	B
HCM 95th-tile Q	2.5	4.7	0	0.4	1.8	3.4	0.8	0.1	4.5	0.3

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	12	134	66	20	29	193	201	6	16	254	55
Future Vol, veh/h	71	12	134	66	20	29	193	201	6	16	254	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	77	13	146	72	22	32	210	218	7	17	276	60
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	12.4	12.5	15.2	16.5
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	86%	0%	77%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	14%	0%	23%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	193	201	6	83	134	86	29	16	254	55
LT Vol	193	0	0	71	0	66	0	16	0	0
Through Vol	0	201	0	12	0	20	0	0	254	0
RT Vol	0	0	6	0	134	0	29	0	0	55
Lane Flow Rate	210	218	7	90	146	93	32	17	276	60
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.436	0.423	0.011	0.199	0.276	0.213	0.062	0.037	0.549	0.107
Departure Headway (Hd)	7.485	6.976	6.264	7.953	6.817	8.212	7.118	7.671	7.162	6.449
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	482	516	571	452	527	437	503	467	505	556
Service Time	5.224	4.715	4.002	5.696	4.56	5.962	4.867	5.41	4.901	4.188
HCM Lane V/C Ratio	0.436	0.422	0.012	0.199	0.277	0.213	0.064	0.036	0.547	0.108
HCM Control Delay	15.9	14.8	9.1	12.7	12.2	13.2	10.3	10.7	18.3	10
HCM Lane LOS	C	B	A	B	B	B	B	B	C	A
HCM 95th-tile Q	2.2	2.1	0	0.7	1.1	0.8	0.2	0.1	3.3	0.4

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	11	149	87	35	42	198	256	7	19	275	74
Future Vol, veh/h	76	11	149	87	35	42	198	256	7	19	275	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	12	162	95	38	46	215	278	8	21	299	80
Number of Lanes	0	1	1	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	14.1	14.7	19.5	20.9
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	87%	0%	71%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	13%	0%	29%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	198	256	7	87	149	122	42	19	275	74
LT Vol	198	0	0	76	0	87	0	19	0	0
Through Vol	0	256	0	11	0	35	0	0	275	0
RT Vol	0	0	7	0	149	0	42	0	0	74
Lane Flow Rate	215	278	8	95	162	133	46	21	299	80
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.485	0.587	0.015	0.228	0.339	0.325	0.098	0.048	0.65	0.159
Departure Headway (Hd)	8.111	7.599	6.882	8.682	7.532	8.815	7.744	8.344	7.831	7.114
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	443	473	517	412	475	406	460	428	460	502
Service Time	5.889	5.376	4.659	6.465	5.314	6.603	5.531	6.124	5.611	4.893
HCM Lane V/C Ratio	0.485	0.588	0.015	0.231	0.341	0.328	0.1	0.049	0.65	0.159
HCM Control Delay	18.4	20.7	9.8	14	14.2	15.8	11.4	11.5	24.1	11.2
HCM Lane LOS	C	C	A	B	B	C	B	B	C	B
HCM 95th-tile Q	2.6	3.7	0	0.9	1.5	1.4	0.3	0.2	4.5	0.6

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BIOLOGICAL TECHNICAL REPORT

FOR

DUDLEY STREET PROJECT

LOCATED IN THE CITY OF POMONA, LOS ANGELES COUNTY, CALIFORNIA

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May 28, 2020 [Revised September 24, 2020]

INFORMATION SUMMARY

A. Report Date: May 15, 2020 [Revised September 24, 2020]

B. Report Title: Dudley Street Project

C. Project Site Location: Latitude 34.071829 and longitude -117.77728, immediately east of the intersection at North Dudley Street and Murchison Avenue, City of Pomona, Los Angeles County, California

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F. Report Summary:

A biological study was performed for the proposed Dudley Street Project (Project) located in the City of Pomona, Los Angeles County, California. The Project would result in construction of a new residential townhome development with associated street and sidewalks. The Project also includes additional offsite impacts for roadway infrastructure improvements and equipment access. This document provides the results of field studies to evaluate the potential occurrence of biological resources and evaluates impacts to biological resources associated with the proposed project in the context of the California Environmental Quality Act (CEQA), State and Federal Clean Water Act (CWA), and the California Fish and Game Code.

Habitat assessments were performed for special-status plants and animals, and evaluations were performed to determine the presence/absence of federal and/or state jurisdictional waters and wetlands. The Project site does not contain state or federal jurisdictional waters. The Project site does not support suitable habitat for special-status species nor does it support sensitive habitats. A focused habitat assessment was conducted for burrowing owl and the Project was determined to not support suitable habitat for this species. The Project does support suitable habitat for nesting birds. The Project supports several mature trees that are subject to the City of Pomona Tree Preservation Program.

G. Individuals Conducting Fieldwork:

Stephanie Cashin and Jeff Ahrens

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1.0 INTRODUCTION

1.1 Background and Scope of Work

This document provides the results of general biological surveys and habitat assessments for the approximately 7.66-acre Dudley Street Project (the Project), this acreage represents the 7.47-acre onsite portion of the Project and 0.19-acre offsite improvement area, located in the City of Pomona, Los Angeles county, California. This report identifies and evaluates impacts to biological resources associated with the proposed Project in the context of the California Environmental Quality Act (CEQA), and State and Federal regulations such as the Endangered Species Act (ESA), Clean Water Act (CWA), and the California Fish and Game Code.

The scope of this report includes a discussion of existing conditions for the approximately 7.66-acre Project site, all methods employed regarding the general biological surveys, the documentation of botanical and wildlife resources identified (including special-status species), and an analysis of impacts to biological resources. Methods of the study include a review of relevant literature, field surveys, and a Geographical Information System (GIS)-based analysis of vegetation communities. As appropriate, this report is consistent with accepted scientific and technical standards and survey guideline requirements issued by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), the California Native Plant Society (CNPS), and other applicable agencies/organizations.

The field study focused on a number of primary objectives that would comply with CEQA requirements, including (1) general biological survey and vegetation mapping; (2) habitat assessments for special-status plant species; (3) habitat assessments for special-status wildlife species; (4) assessment for the presence of wildlife migration and colonial nursery sites; and (5) assessments for areas subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) jurisdiction pursuant to Section 404 of the Clean Water Act, State Water Quality Control Board pursuant to Section 401 of the Clean Water Act, and CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600–1616 of the California Fish and Game Code. Observations of all plant and wildlife species were recorded during the biological studies and are included as Appendix A: Floral Compendium and Appendix B: Faunal Compendium.

1.2 Project Location

The Project site comprises approximately 7.66 acres in the City of Pomona, Los Angeles County, California [Exhibit 1 – Regional Map] and is located within an unsectioned portion of Township 1 South, Range 9 West, of the U.S. Geological Survey (USGS) 7.5" quadrangle map San Dimas (dated 1966 and photorevised in 1981)[Exhibit 2 – Vicinity Map]. Specifically, the Project is located at latitude 34.071829 and longitude -117.77728, immediately east of the intersection at North Dudley Street and Murchison Avenue. The Project site is generally bordered by Interstate 10 to the north, Cortez Elementary School and commercial property to the south, residential neighborhood to the east, and Dudley Street to the west.

1.3 Project Description

For this report, the term *Project site* is defined as the area proposed for direct permanent impact by the proposed Project and equaling 7.66 acres which includes the entire onsite property of 7.47 acres plus additional offsite areas associated with equipment access and road improvements equaling 0.19 acre [Exhibit 3 – Site Plan]. The proposed Project consists of a new residential townhome development including parking and a neighborhood pool area. The Project site is subject to the City of Pomona Oak Tree Preservation Program, for the removal of protected trees as defined by City municipal code Section 5809-23 – Oak tree preservation program [Appendix C - Tree Report].

2.0 METHODOLOGY

In order to adequately identify biological resources in accordance with the requirements of CEQA, Glenn Lukos Associates (GLA) assembled biological data consisting of the following main components:

- Jurisdictional Determination of aquatic resources (including wetlands and riparian habitat) subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), and CDFW;
- Performance of vegetation mapping for the Project site;
- Performance of habitat assessments, and site-specific biological surveys, to evaluate the presence/absence of special-status species in accordance with the requirements of CEQA.

The focus of the biological surveys was determined through initial site reconnaissance, a review of the CNDDB [CDFW 2020], CNPS 8th edition online inventory (CNPS 2020), Natural Resource Conservation Service soil data (NRCS 2020), other pertinent literature, and knowledge of the region. Site-specific general surveys within the Project site were conducted on foot in the proposed development areas for each target plant or animal species identified below. Table 2-1 provides a summary list of survey dates, survey types and personnel.

Table 2-1. Summary of Biological Surveys for the Project Site

Survey Type	2020 Survey Dates	Biologist(s)
General Biological Survey	3/26, 4/30	SC, JA
Vegetation Mapping	3/26	SC
Focused Plant Surveys	3/26, 4/30	SC, JA
Determination of Federal and State Jurisdictional Waters	3/26	SC

SC = Stephanie Cashin; JA = Jeff Ahrens

Individual plants and wildlife species were evaluated in this report based on their "special-status." For this report, plants were considered "special-status" based on one or more of the following criteria:

- Listing through the Federal and/or State Endangered Species Act (ESA); and/or
- CNPS Rare Plant Inventory Rank 1A, 1B, 2A, 2B, 3, or 4); and/or
- Occurrence in the CNDDB inventory.

Wildlife species were considered "special-status" based on one or more of the following criteria:

- Listing through the Federal and/or State ESA; and
- Designation by the State as a Species of Special Concern (SSC) or California Fully Protected (CFP) species.

Vegetation communities and habitats were considered "special-status" based on one or more of the following criteria:

- Global (G) and/or State (S) ranking of category 3 or less based on CDFW (see Section 3.2.2 below for further explanation); and
- Riparian/riverine habitat; and/or
- Occurrence in the CNDDB inventory.

2.1 Botanical Resources

A site-specific survey program was designed to accurately document the botanical resources within the Project site, and consisted of five components: (1) a literature search; (2) preparation of a list of target special-status plant species and sensitive vegetation communities that could occur within the Project site; (3) general field reconnaissance survey(s); (4) vegetation mapping according to the List of Vegetation Alliances and Associations; and (5) habitat assessments and focused surveys for special-status plants.

2.1.1 Literature Search

Prior to conducting fieldwork, pertinent literature on the flora of the region was examined. A thorough archival review was conducted using available literature and other historical records. These resources included the following:

- California Native Plant Society, Rare Plant Program. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39) (CNPS2020); and

- CNDDB for the USGS 7.5' quadrangle(s): San Dimas and eight surrounding quadrangles (CDFW 2020).

2.1.2 Vegetation Mapping

Vegetation communities within the Project site were mapped according to the List of Vegetation Alliances and Associations (or Natural Communities List). The list is based on A Manual of California Vegetation, Second Edition or MCVII, which is the California expression of the National Vegetation Classification. Where necessary, deviations were made when areas did not fit into exact vegetation descriptions. These vegetation communities were named based on the

dominant plant species present [Exhibit 4 – Vegetation Map]. Plant communities were mapped in the field directly onto a 200-scale (1"=200') aerial photograph.

2.1.3 Special-Status Plant Species and Habitats Evaluated for the Project Site

A literature search was conducted to obtain a list of special-status plants with the potential to occur within the Project site. The CNDDB was initially consulted to determine well-known occurrences of plants and habitats of special concern in the region. Other sources used to develop a list of target species for the survey program included the CNPS online inventory (2020).

Based on this information, vegetation profiles and a list of target sensitive plant species and habitats that could occur within the Project site were developed and incorporated into a mapping and survey program to achieve the following goals: (1) characterize the vegetation associations and land use; (2) prepare a detailed floristic compendium; (3) identify the potential for any special-status plants that may occur within the Project site; and (4) prepare a map showing the distribution of any sensitive botanical resources associated with the Project site, if applicable.

2.1.4 Botanical Surveys

GLA biologists (Stephanie Cashin and Jeff Ahrens) visited the site on March 26 and April 30, 2020, to conduct focused plant surveys. Surveys were conducted in accordance with accepted botanical survey guidelines (CDFG 2009, CNPS 2001, USFWS 2000). As applicable, survey(s) were conducted at appropriate times based on precipitation and flowering periods. An aerial photograph, a soil map, and/or a topographic map were used to determine the community types and other physical features that may support sensitive and uncommon taxa or communities within the Project site. Survey(s) were conducted by following meandering transects within target areas of suitable habitat. All plant species encountered during the field survey(s) were identified and recorded following the above-referenced guidelines adopted by CNPS (2010) and CDFW by Nelson (1984). A complete list of the plant species observed is provided in Appendix A. Scientific nomenclature and common names used in this report follow Baldwin et al (2012), and Munz (1974).

2.2 Wildlife Resources

Wildlife species were evaluated and detected during the field survey(s) by sight, call, tracks, and scat. Site reconnaissance was conducted in such a manner as to allow inspection of the entire Project site by direct observation, including the use of binoculars. Observations of physical evidence and direct sightings of wildlife were recorded in field notes during the visit(s). A complete list of wildlife species observed within the Project site is provided in Appendix B. Scientific nomenclature and common names for vertebrate species referred to in this report follow the Complete List of Amphibian, Reptile, Bird, and Mammal Species in California (CDFG 2008), Standard Common and Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians 6th Edition, Collins and Taggert (2009) for amphibians and reptiles, and the American Ornithologists' Union Checklist 7th Edition (2009) for birds. The

methodology (including any applicable survey protocols) utilized to conduct general survey(s), habitat assessment(s), and/or focused surveys for special-status animals are included below.

2.2.1 General Surveys

Birds

During the general biological and reconnaissance survey within the Project site, birds were identified incidentally within each habitat type. Birds were detected by both direct observation and by vocalizations and were recorded in field notes.

Mammals

During general biological and reconnaissance survey within the Project site, mammals were identified incidentally within each habitat type. Mammals were detected both by direct observations and by the presence of diagnostic sign (i.e. tracks, burrows, scat, etc.).

Reptiles and Amphibians

During general biological and reconnaissance surveys within the Project site, reptiles and amphibians were identified incidentally during surveys within each habitat type. Habitats were examined for diagnostic reptile sign, which include shed skins, scat, tracks, snake prints, and lizard tail drag marks. All reptiles and amphibian species observed, as well as diagnostic sign, were recorded in field notes.

2.2.2 Special-Status Animal Species Evaluated for the Project Site

A literature search was conducted to obtain a list of special-status wildlife species with the potential to occur within the Project site. Species were evaluated based on three factors, including: 1) species identified by the CNDDB as occurring (either currently or historically) on or in vicinity of the Project site and (2) any other special-status animals that are known to occur within the vicinity of the Project site, or for which potentially suitable habitat occurs on the Project site.

2.2.3 Habitat Assessment for Special-Status Animal Species

GLA biologist(s) (Stephanie Cashin and Jeff Ahrens) conducted habitat assessments for special-status animal species on March 26 and April 30, 2020. An aerial photograph, soil map and/or topographic map were used to determine the community types and other physical features that may support special-status and uncommon taxa within the Project site.

Burrowing Owl

GLA biologist(s) (Stephanie Cashin and Jeff Ahrens) conducted a habitat assessment for the burrowing owl (*Athene cunicularia*) for all suitable habitat areas within the Project site. On March 26, 2020, the habitat assessment was conducted by walking meandering transects

throughout the entire property to closely inspect all areas of potentially suitable habitat. Transects were spaced between 22 feet and 65 feet apart, adjusting for vegetation height and density, in order to provide adequate visual coverage of the survey areas. At the start of each transect, and at least every 320 feet along transects, the survey area was scanned for burrowing owls using binoculars. All suitable burrows were inspected for diagnostic owl sign (e.g., pellets, prey remains, whitewash, feathers, bones, and/or decoration) in order to identify potentially occupied burrows. The habitat assessment was conducted during weather that was conducive to observing owls outside their burrows and detecting burrowing owl sign and not during rain, high winds (> 20 mph), dense fog, or temperatures over 90 °F. Additionally, the habitat assessment was performed more than 5 days after a rain event.

The Project site is primarily undeveloped flat land vegetated with non-native weedy species, several mature trees, and an existing asphalt road along the north and west boundary and a portion of road in the southeast of the property. A concrete sidewalk extends the length of the southern boundary connecting the residential neighborhood to the east to the elementary school at the Project site southern boundary indicating the site is frequently utilized by humans. Land uses surrounding the Project site consist of urban development with Interstate highway I-10 to the north, Cortez Elementary school and commercial property to the south, single family residential to the east, and Dudley Street and residential development to the west.

As described above, the Project site is essentially an undeveloped "island" surrounded by primarily urban development. Non-native grasses dominate the site as a dense uniform thatch except where there is paved road and sidewalk. While walking meandering transects, several California ground squirrel (*Otospermophilus beecheyi*) burrows were detected under three mature oak trees near the center of the Project site. The burrows were concentrated at each tree trunk with a few satellite burrows just beyond the tree dripline. Burrowing owls are small ground dwelling raptors that are highly predated upon by larger raptors and select suitable burrows associated with sparsely vegetated habitat, sometimes with rocky outcrops or isolated posts, to allow for good visibility. As the burrows were detected under the mature trees, which would reduce visibility of predatory raptors, the burrows are not considered suitable for burrowing owl. Given the burrows were detected under mature trees and the site is covered in dense vegetation, averaging three feet high, the site has been determined to not support suitable burrowing owl habitat.

2.3 Jurisdictional Waters

The Project site was evaluated for the presence of jurisdictional waters, including waters of the U.S. (including wetlands) subject to the jurisdiction of the Corps and Regional Board, and waters of the State (including riparian vegetation) subject to the jurisdiction of CDFW.

3.0 REGULATORY SETTING

The proposed Project is subject to state and federal laws and regulations associated with a number of regulatory programs. These programs often overlap and were developed to protect natural resources, including: state- and federally-listed plants and animals; aquatic resources including rivers and creeks, ephemeral streambeds, wetlands, and areas of riparian habitat;

special-status species which are not listed as threatened or endangered by the state or federal governments; and special-status vegetation communities.

3.1 Endangered Species Acts

3.1.1 California Endangered Species Act

California's Endangered Species Act (CESA) defines an endangered species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." The State defines a threatened species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species." Candidate species are defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list." Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the Federal Endangered Species Act (FESA), CESA does not list invertebrate species.

Article 3, Sections 2080 through 2085, of the CESA addresses the taking of threatened, endangered, or candidate species by stating "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided." Under the CESA, "take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Exceptions authorized by the state to allow "take" require permits or memoranda of understanding and can be authorized for endangered species, threatened species, or candidate species for scientific, educational, or management purposes and for take incidental to otherwise lawful activities. Sections 1901 and 1913 of the California Fish and Game Code provide that notification is required prior to disturbance.

3.1.2 Federal Endangered Species Act

The FESA of 1973 defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under provisions of Section 9(a)(1)(B) of the FESA it is unlawful to "take" any listed species. "Take" is defined in Section 3(18) of FESA: "...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Further, the USFWS, through regulation, has interpreted the terms "harm" and "harass" to include certain types of habitat modification that result in injury to, or death of

species as forms of "take." These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a Federal agency for an action that could affect a federally listed plant and animal species, the property owner and agency are required to consult with USFWS. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants.

3.1.3 State and Federal Take Authorizations

Federal or state authorizations of impacts to or incidental take of a listed species by a private individual or other private entity would be granted in one of the following ways:

- Section 7 of the FESA stipulates that any federal action that may affect a species listed as threatened or endangered requires a formal consultation with USFWS to ensure that the action is not likely to jeopardize the continued existence of the listed species or result in destruction or adverse modification of designated critical habitat. 16 U.S.C. 1536(a)(2).
- In 1982, the FESA was amended to give private landowners the ability to develop Habitat Conservation Plans (HCP) pursuant to Section 10(a) of the FESA. Upon development of an HCP, the USFWS can issue incidental take permits for listed species where the HCP specifies at minimum, the following: (1) the level of impact that will result from the taking, (2) steps that will minimize and mitigate the impacts, (3) funding necessary to implement the plan, (4) alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5) such other measures that the Secretary of the Interior may require as being necessary or appropriate for the plan.
- Sections 2090-2097 of the CESA require that the state lead agency consult with CDFW on projects with potential impacts on state-listed species. These provisions also require CDFW to coordinate consultations with USFWS for actions involving federally listed as well as state-listed species. In certain circumstances, Section 2080.1 of the California Fish and Game Code allows CDFW to adopt the federal incidental take statement or the 10(a) permit as its own based on its findings that the federal permit adequately protects the species under state law.

3.2 California Environmental Quality Act

3.2.1 CEQA Guidelines Section 15380

CEQA requires evaluation of a project's impacts on biological resources and provides guidelines and thresholds for use by lead agencies for evaluating the significance of proposed impacts. Sections 5.1.1 and 5.2.2 below set forth these thresholds and guidelines. Furthermore, pursuant to the CEQA Guidelines Section 15380, CEQA provides protection for non-listed species that could potentially meet the criteria for state listing. For plants, CDFW recognizes that plants on Lists 1A, 1B, or 2 of the CNPS *Inventory of Rare and Endangered Plants in California* may meet the criteria for listing and should be considered under CEQA. CDFW also recommends protection of plants, which are regionally important, such as locally rare species, disjunct populations of more common plants, or plants CNPS Ranked 3 or 4.

3.2.2 Special-Status Plants, Wildlife and Vegetation Communities Evaluated Under CEQA

Federally Designated Special-Status Species

Within recent years, the USFWS instituted changes in the listing status of candidate species. Former C1 (candidate) species are now referred to simply as candidate species and represent the only candidates for listing. Former C2 species (for which the USFWS had insufficient evidence to warrant listing) and C3 species (either extinct, no longer a valid taxon or more abundant than was formerly believed) are no longer considered as candidate species. Therefore, these species are no longer maintained in list form by the USFWS, nor are they formally protected. This term is employed in this document, but carries no official protections. All references to federally protected species in this report (whether listed, proposed for listing, or candidate) include the most current published status or candidate category to which each species has been assigned by USFWS.

For this report the following acronyms are used for federal special-status species:

- FE Federally listed as Endangered
- FT Federally listed as Threatened
- FPE Federally proposed for listing as Endangered
- FPT Federally proposed for listing as Threatened
- FC Federal Candidate Species (former C1 species)

State-Designated Special-Status Species

Some mammals and birds are protected by the state as Fully Protected (SFP) Mammals or Fully Protected Birds, as described in the California Fish and Game Code, Sections 4700 and 3511, respectively. California SSC are designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. This list is primarily a working document for the CDFW's CNDDB project. Informally listed taxa are not protected, but warrant consideration in the preparation of biotic assessments. For some species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nest sites.

For this report the following acronyms are used for State special-status species:

- SE State-listed as Endangered
- ST State-listed as Threatened
- SR State-listed as Rare
- SCE State Candidate for listing as Endangered
- SCT State Candidate for listing as Threatened
- SFP State Fully Protected
- SP State Protected
- SSC State Species of Special Concern

CNDDB Global/State Rankings

The CNDDB provides global and state rankings for species and communities based on a system developed by The Nature Conservancy to measure rarity of a species. The ranking provides a shorthand formula about how rare a species/community is and is based on the best information available from multiple sources, including state and federal listings, and other groups that recognize species as sensitive (e.g., Bureau of Land Management, Audubon Society, etc.). State and global rankings are used to prioritize conservation and protection efforts so that the rarest species/communities receive immediate attention. In both cases, the lower ranking (i.e., G1 or S1) indicates extreme rarity. Rare species are given a ranking from 1 to 3. Species with a ranking of 4 or 5 is considered to be common. If the exact global/state ranking is undetermined, a range is generally provided. For example, a global ranking of "G1G3" indicates that a species/community global rarity is between G1 and G3. If the animal being considered is a subspecies of a broader species, a "T" ranking is attached to the global ranking. The following are descriptions of global and state rankings:

Global Rankings

- G1 – Critically imperiled globally because of extreme rarity (5 or fewer occurrences), or because of some factor(s) making it especially vulnerable to extinction.
- G2 – Imperiled globally because of rarity (6-20 occurrences), or because of some other factor(s) making it very vulnerable to extinction throughout its range.
- G3 – Either very rare and local throughout its range (21 to 100 occurrences) or found locally (even abundantly at some of its locations) in a restricted range (e.g., a physiographic region), or because of some other factor(s) making it vulnerable to extinction throughout its range.
- G4 – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5 – Common, widespread and abundant.

State Rankings

- S1 – Extremely rare; typically 5 or fewer known occurrences in the state; or only a few remaining individuals; may be especially vulnerable to extirpation.
- S2 – Very rare; typically between 6 and 20 known occurrences; may be susceptible to becoming extirpated.
- S3 – Rare to uncommon; typically 21 to 50 known occurrences; S3 ranked species are not yet susceptible to becoming extirpated in the state but may be if additional populations are destroyed.
- S4 - Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- S5 - Common, widespread, and abundant in the state.

California Native Plant Society

The CNPS is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in California. The CNPS's Eighth Edition of the *California Native Plant Society's Inventory of Rare and Endangered Plants of California* separates plants of interest into five ranks. CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of Rare, Threatened, or Endangered vascular plant species of California. The list serves as the candidate list for listing as threatened and endangered by CDFW. CNPS has developed five categories of rarity that are summarized in Table 3-1.

Table 3-1. CNPS Ranks 1, 2, 3, & 4, and Threat Code Extensions

CNPS Rank	Comments
Rank 1A – Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere	Thought to be extinct in California based on a lack of observation or detection for many years.
Rank 1B – Plants Rare, Threatened, or Endangered in California and Elsewhere	Species, which are generally rare throughout their range that are also judged to be vulnerable to other threats such as declining habitat.
Rank 2A – Plants presumed Extirpated in California, But Common Elsewhere	Species that are presumed extinct in California but more common outside of California
Rank 2B – Plants Rare, Threatened or Endangered in California, But More Common Elsewhere	Species that are rare in California but more common outside of California
Rank 3 – Plants About Which More Information Is Needed (A Review List)	Species that are thought to be rare or in decline but CNPS lacks the information needed to assign to the appropriate list. In most instances, the extent of surveys for these species is not sufficient to allow CNPS to accurately assess whether these species should be assigned to a specific rank. In addition, many of the Rank 3 species have associated taxonomic problems such that the validity of their current taxonomy is unclear.
Rank 4 – Plants of Limited Distribution (A Watch List)	Species that are currently thought to be limited in distribution or range whose vulnerability or susceptibility to threat is currently low. In some cases, as noted above for Rank 3 species, CNPS lacks survey data to accurately determine status in California. Many species have been placed on Rank 4 in previous editions of the "Inventory" and have been removed as survey data has indicated that the species are more common than previously thought. CNPS recommends that species currently included on this list should be monitored to ensure that future substantial declines are minimized.
Extension	**Comments**
.1 – Seriously endangered in California	Species with over 80% of occurrences threatened and/or have a high degree and immediacy of threat.
.2 – Fairly endangered in California	Species with 20-80% of occurrences threatened.
.3 – Not very endangered in California	Species with <20% of occurrences threatened or with no current threats known.

3.3 Jurisdictional Waters

3.3.1 Army Corps of Engineers

Pursuant to Section 404 of the CWA, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a), pursuant to the *Navigable Waters Protection Rule*[1] (NWPR), as:

(a) Jurisdictional waters. For purposes of the CWA, 33 U.S.C. 1251 *et seq.* and its implementing regulations, subject to the exclusions in paragraph (b) of this section, the term ‘‘waters of the United States’’ means:

(1) The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide;
(2) Tributaries;
(3) Lakes and ponds, and impoundments of jurisdictional waters; and
(4) Adjacent wetlands.

(b) Non-jurisdictional waters. The following are not ‘‘waters of the United States’’:

(1) Waters or water features that are not identified in paragraph (a)(1), (2), (3), or (4) of this section;
(2) Groundwater, including groundwater drained through subsurface drainage systems;
(3) Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools;
(4) Diffuse stormwater run-off and directional sheet flow over upland;
(5) Ditches that are not waters identified in paragraph (a)(1) or (2) of this section, and those portions of ditches constructed in waters identified in paragraph (a)(4) of this section that do not satisfy the conditions of paragraph (c)(1) of this section;
(6) Prior converted cropland;
(7) Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease;
(8) Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters, so long as those artificial lakes and ponds are not impoundments of jurisdictional waters that meet the conditions of paragraph (c)(6) of this section;
(9) Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel;
(10) Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater runoff;

[1] U.S. Environmental Protection Agency & Department of Defense. 2020. Federal Register / Vol. 85, No. 77 / Tuesday, April 21, 2020 / Rules and Regulations.

(11) Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention, and infiltration basins and ponds, constructed or excavated in upland or in non-jurisdictional waters; and
(12) Waste treatment systems.

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

> *...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

1. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term "wetlands" (a subset of "waters of the United States") is defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the Corps published the Wetland Manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the Wetland Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the Wetland Manual and Arid West Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

* More than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the Arid West 2016 Regional Wetland Plant List[2],[3]);

* Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

* Whereas the Wetland Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with "problematic hydrophytic vegetation", which require a minimum of 14 days of ponding to be considered a wetland.

[2] Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. Arid West 2016 Regional Wetland Plant List. Phytoneuron 2016-30: 1-17. Published 28 April 2016.
[3] Note the Corps also publishes a National List of Plant Species that Occur in Wetlands (Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016.); however, the Regional Wetland Plant List should be used for wetland delineations within the Arid West Region.

3.3.2 Regional Water Quality Control Board

The State Water Resource Control Board and each of its nine Regional Boards regulate the discharge of waste (dredged or fill material) into waters of the United States[4] and waters of the State. Waters of the United States are defined above in Section II.A and waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050[e]).

Section 401 of the CWA requires certification for any federal permit or license authorizing impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as Section 404 of the CWA and Section 10 of the Safe Rivers and Harbors Act, to ensure that the impacts do not violate state water quality standards. When a project could impact waters outside of federal jurisdiction, the Regional Board has the authority under the Porter-Cologne Water Quality Control Act to issue Waste Discharge Requirements (WDRs) to ensure that impacts do not violate state water quality standards. CWA Section 401 Water Quality Certifications, WDRs, and waivers of WDRs are also referred to as orders or permits.

1. State Wetland Definition

The State Board Wetland Definition and Procedures define an area as wetland as follows: *An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.*

The following wetlands are waters of the State:

1. *Natural wetlands;*
2. *Wetlands created by modification of a surface water of the state;*[5] *and*
3. *Artificial wetlands*[6] *that meet any of the following criteria:*

[4] Therefore, wetlands that meet the current definition, or any historic definition, of waters of the U.S. are waters of the state. In 2000, the State Water Resources Control Board determined that all waters of the U.S. are also waters of the state by regulation, prior to any regulatory or judicial limitations on the federal definition of waters of the U.S. (California Code or Regulations title 23, section 3831(w)). This regulation has remained in effect despite subsequent changes to the federal definition. Therefore, waters of the state includes features that have been determined by the U.S. Environmental Protection Agency (U.S. EPA) or the U.S. Army Corps of Engineers (Corps) to be "waters of the U.S." in an approved jurisdictional determination; "waters of the U.S." identified in an aquatic resource report verified by the Corps upon which a permitting decision was based; and features that are consistent with any current or historic final judicial interpretation of "waters of the U.S." or any current or historic federal regulation defining "waters of the U.S." under the federal Clean Water Act.

[5] "Created by modification of a surface water of the state" means that the wetland that is being evaluated was created by modifying an area that was a surface water of the state at the time of such modification. It does not include a wetland that is created in a location where a water of the state had existed historically but had already been completely eliminated at some time prior to the creation of the wetland. The wetland being evaluated does not become a water of the state due solely to a diversion of water from a different water of the state.

[6] Artificial wetlands are wetlands that result from human activity.

a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
b. Specifically identified in a water quality control plan as a wetland or other water of the state;
c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):

i. Industrial or municipal wastewater treatment or disposal,
ii. Settling of sediment,
iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
iv. Treatment of surface waters,
v. Agricultural crop irrigation or stock watering,
vi. Fire suppression,
vii. Industrial processing or cooling,
viii. Active surface mining – even if the site is managed for interim wetlands functions and values,
ix. Log storage,
x. Treatment, storage, or distribution of recycled water, or
xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
xii. Fields flooded for rice growing.[7]

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not waters of the state. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a water of the state.

[7] Fields used for the cultivation of rice (including wild rice) that have not been abandoned due to five consecutive years of non-use for the cultivation of rice (including wild rice) that are determined to be a water of the state in accordance with these Procedures shall not have beneficial use designations applied to them through the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, except as otherwise required by federal law for fields that are considered to be waters of the United States. Further, agricultural inputs legally applied to fields used for the cultivation of rice (including wild rice) shall not constitute a discharge of waste to a water of the state. Agricultural inputs that migrate to a surface water or groundwater may be considered a discharge of waste and are subject to waste discharge requirements or waivers of such requirements pursuant to the Water Board's authority to issue or waive waste discharge requirements or take other actions as applicable.

3.3.3 California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1617 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW also defines a stream as “a body of water that flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators.”

It is important to note that the Fish and Game Code defines fish and wildlife to include: all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities including the habitat upon which they depend for continued viability (FGC Division 5, Chapter 1, section 45 and Division 2, Chapter 1 section 711.2(a) respectively). Furthermore, Division 2, Chapter 5, Article 6, Section 1600 et seq. of the California Fish and Game Code does not limit jurisdiction to areas defined by specific flow events, seasonal changes in water flow, or presence/absence of vegetation types or communities.

4.0 RESULTS

This section provides the results of general biological surveys, vegetation mapping, habitat assessments for special-status plants and animals, and a jurisdictional determination for Waters of the United States (including wetlands) subject to the jurisdiction of the Corps and Regional Board, and streams (including riparian vegetation) and lakes subject to the jurisdiction of CDFW.

4.1 Existing Conditions

The Project site comprises approximately 7.66 acres including onsite areas equaling 7.47-acres and offsite areas equaling 0.19-acre [Exhibit 3]. The offsite impacts consist of areas for equipment access and road improvements at the eastern Project site boundary on Murchison Avenue and Jaqueline Drive. The Project site is primarily undeveloped flat land vegetated with non-native weedy species, several mature trees, and an existing asphalt road along the north and west boundary and a portion of road in the southeast of the property. A concrete sidewalk extends the length of the southern boundary connecting the residential neighborhood to the east to the elementary school at the Project site southern boundary.

Land uses surrounding the Project site consist of urban development with Interstate 10 to the north, Cortez Elementary school and commercial property to the south, single family residential to the east, and Dudley Street and residential development to the west.

4.2 Vegetation Mapping

The Project site supports the following vegetation types: Disturbed/*Bromus sp. – Hordeum sp.* Grassland and Disturbed/Developed. Table 4-1 provides a summary of the vegetation types and their corresponding acreage. Descriptions of each vegetation type follow the table. A Vegetation Map is attached as Exhibit 4. Photographs depicting the Project site are shown in Exhibit 5.

Table 4-1. Summary of Vegetation/Land Use Types for the Project Site

VEGETATION/LAND USE TYPE	ONSITE PROJECT SITE (acres)	OFFSITE PROJECT SITE (acres)
Disturbed/*Bromus sp. – Hordeum sp.* Grassland	6.48	0.00
Disturbed/Developed	0.99	0.19
Total	**7.47**	**0.19**

Disturbed/*Bromus sp. – Hordeum sp.* Grassland

The Project site supports 6.48 acres of disturbed *Bromus sp. – Hordeum sp.* herbaceous semi-natural alliance, all of which is onsite [Exhibit 4]. The *Bromus sp. – Hordeum sp.* grassland is dominated by non-native grasses and herbaceous species with a few mature non-native trees and is not a sensitive habitat.

The *Bromus sp. – Hordeum sp. s*emi-natural grassland is characterized by the following: (1) *Bromus sp.* Represents greater than sixty percent relative cover in the herbaceous layer; or (2) *Hordeum sp.* Represents greater than sixty percent relative cover in the herbaceous layer, with *Bromus sp.* Present or lacking. Within the Project site, relative cover of *Bromus sp.*, including ripgut grass (*Bromus diandrus*) and red brome (*Bromus madritensis* ssp. *rubens*), and/or *Hordeum sp.* (foxtail barley, *Hordeum murinum*) is 70 percent. Approximately 20 percent relative cover within the herbaceous layer is comprised of numerous annual species including London rocket (*Sisymbrium irio*), wild oat (*Avena fatua*), red-stemmed filaree (*Erodium cicutarium*), cheeseweed (*Malva parviflora*), common fiddleneck (*Amsinckia intermedia*), Bermuda grass (*Cynodon dactylon*), yellow sweet clover (*Melilotus officinalis*), Italian rye grass (*Festuca perennis*), Russian thistle (*Salsola australis*), wild radish (*Raphanus sativus*), tocalote (*Centaurea melitensis*), and Shepard's purse (*Capsella bursa-pastoris*). The combined relative cover of annual species has produced a thatched field averaging three feet in height. The remaining 10 percent relative cover includes several mature trees located along the existing roads and the center of the property, including Shamel ash (*Fraxinus uhdei*), southern live oak (*Quercus virginiana*), and Mexican fan palm (*Washingtonia robusta*).

Disturbed/Developed

The Project site supports 1.18 acres of disturbed/developed lands including existing asphalt roads and concrete sidewalks and curbs, of which 0.99 acre occurs onsite and 0.19 acre occurs offsite [Exhibit 4].

4.3 Special-Status Vegetation Communities

The CNDDB identifies the following eight special-status vegetation communities for the San Dimas and surrounding quadrangle maps: California walnut woodland, Canyon live oak ravine forest, Riversidean alluvial fan sage scrub, southern coast live oak riparian forest, southern cottonwood willow riparian forest, southern sycamore alder riparian woodland, southern willow scrub, and walnut forest. The Project site does not contain any special-status vegetation types, including those identified by the CNDDB.

4.4 Special-Status Plants

No special-status plants were detected at the Project site and none are expected to occur due to a lack of suitable habitat. Table 4-2 provides a list of special-status plants evaluated for the Project site through general biological surveys, habitat assessments, and focused surveys. Species were evaluated based on the following factors: 1) species identified by the CNDDB and CNPS as occurring (either currently or historically) on or in the vicinity of the Project site and 2) any other special-status plants that are known to occur within the vicinity of the Project site, or for which potentially suitable habitat occurs within the site.

Table 4-2. Special-Status Plants Evaluated for the Project Site

Species Name	Status	Habitat Requirements	Occurrence
Aparejo grass *Muhlenbergia utilis*	Federal: None State: None CNPS: Rank 2B.2	Wet habitats, including riverbanks and meadows, sometimes in alkaline soils. Perennial herb. Blooming period from Aug-Oct	Does not occur
Brand's star phacelia *Phacelia stellaris*	Federal: None State: None CNPS: Rank 1B.1	Coastal dunes and coastal sage scrub. Annual herb. Blooming period from Mar-June	Does not occur
Braunton's milk-vetch *Astragalus brauntonii*	Federal: FE State: None CNPS: Rank 1B.1	Closed-cone coniferous forest, chaparral, coastal sage scrub, valley and foothill grassland. Usually carbonate soils. Recent burn or disturbed areas. Perennial herb. Blooming period from Jan-Aug	Does not occur
California muhly *Muhlenbergia californica*	Federal: None State: None CNPS: Rank 4.3	Mesic habitats, including seeps and streambanks, in chaparral, coastal scrub, lower montane coniferous forest, and meadows. Perennial rhizomatous herb. Blooming period June-Sept.	Does not occur
California saw-grass *Cladium californicum*	Federal: None State: None CNPS: Rank 2B.2	Meadows and seeps, and alkaline or freshwater marshes and swamps. Perennial rhizomatous herb. Blooming period from June-Sept.	Does not occur

Species Name	Status	Habitat Requirements	Occurrence
Catalina mariposa lily *Calochortus catalinae*	Federal: None State: None CNPS: Rank 4.2	Chaparral, cismontane woodland, coastal sage scrub, valley and foothill grassland. Perennial bulbiferous herb. Blooming from Feb-June.	Does not occur
Chaparral ragwort *Senecio aphanactis*	Federal: None State: None CNPS: Rank 2B.2	Chaparral, cismontane woodland, coastal scrub. Sometimes associated with alkaline soils. Annual herb. Blooming period from Jan-Apr.	Does not occur
Chaparral sand-verbena *Abronia villosa* var. *aurita*	Federal: None State: None CNPS: Rank 1B.1	Sandy soils in chaparral, coastal sage scrub. Annual herb. Blooming period from Jan-Sept.	Does not occur
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	Federal: None State: None CNPS: Rank 1B.1	Playas, vernal pools, marshes and swamps (coastal salt). Annual herb. Blooming period from Feb-June.	Does not occur
Coulter's matilija poppy *Romneya coulteri*	Federal: None State: None CNPS: Rank 4.2	Often in burns in chaparral and coastal scrub. Perennial rhizomatous herb. Blooming period from Mar-July.	Does not occur
Coulter's saltbush *Atriplex coulteri*	Federal: None State: None CNPS: Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal sage scrub, valley and foothill grassland. Occurring on alkaline or clay soils. Perennial herb. Blooming period from Mar-Oct.	Does not occur
Davidson's saltscale *Atriplex serenana* var. *davidsonii*	Federal: None State: None CNPS: Rank 1B.2	Alkaline soils in coastal sage scrub, coastal bluff scrub. Annual herb. Blooming period from Apr-Oct.	Does not occur
Hubby's phacelia *Phacelia hubbyi*	Federal: None State: None CNPS: Rank 4.2	Gravelly, rocky, and talus soils in chaparral, coastal scrub, and valley and foothill grassland. Annual herb. Blooming period from Apr-July.	Does not occur
Intermediate mariposa-lily *Calochortus weedii* var. *intermedius*	Federal: None State: None CNPS: Rank 1B.2	Rocky soils in chaparral, coastal sage scrub, valley and foothill grassland. Perennial bulbiferous herb. Blooming period from May-July.	Does not occur
Jokerst's monardella *Monardella australis* ssp. *jokerstii*	Federal: None State: None CNPS: Rank 1B.1	Steep scree or talus slopes between breccia, secondary alluvial benches along drainages and washes. Chaparral, lower montane coniferous forest. Perennial rhizomatous herb. Blooming period from July-Sept.	Does not occur
Lewis' evening-primrose *Camissoniopsis lewisii*	Federal: None State: None CNPS: Rank 3	Sandy or clay soils in coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland. Annual herb. Blooming period from Mar-June.	Does not occur

Species Name	Status	Habitat Requirements	Occurrence
Lucky morning-glory *Calystegia felix*	Federal: None State: None CNPS: Rank 3.1	Historically associated with wetland and marshy places, but possibly in drier situations as well. Possibly silty loam and alkaline soils. Meadows and seeps (sometimes alkaline), riparian scrub (alluvial). Annual rhizomatous herb. Blooming period from Mar-Sept.	Does not occur
Many-stemmed dudleya *Dudleya multicaulis*	Federal: None State: None CNPS: Rank 1B.2	Chaparral, coastal sage scrub, valley and foothill grassland. Often occurring in clay soils. Perennial herb. Blooming period from Apr-July.	Does not occur
Mesa horkelia *Horkelia cuneata* var. *puberula*	Federal: None State: None CNPS: Rank 1B.1	Sandy or gravelly soils in chaparral (maritime), cismontane woodland, and coastal scrub. Perennial herb. Blooming period from Feb-Sept.	Does not occur
Nevin's barberry *Berberis nevinii*	Federal: FE State: SE CNPS: Rank 1B.1	Sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian scrub. Perennial evergreen shrub. Blooming period from Feb-June.	Confirmed absent
Paniculate tarplant *Deinandra paniculata*	Federal: None State: None CNPS: Rank 4.2	Usually in vernally mesic, sometimes sandy soils in coastal scrub, valley and foothill grassland, and vernal pools. Annual herb. Blooming period from Apr-Nov.	Not expected to occur
Parish's brittlescale *Atriplex parishii*	Federal: None State: None CNPS: Rank 1B.1	Chenopod scrub, playas, vernal pools. Annual herb. Blooming period from June-Oct.	Does not occur
Plummer's mariposa lily *Calochortus plummerae*	Federal: None State: None CNPS: Rank 4.2	Granitic, rock soils within chaparral, cismontane woodland, coastal sage scrub, lower montane coniferous forest, valley and foothill grassland. Perennial bulbiferous herb. Blooming period from May-July.	Does not occur
Prostrate vernal pool navarretia *Navarretia prostrata*	Federal: None State: None CNPS: Rank 1B.1	Coastal sage scrub, valley and foothill grassland (alkaline), vernal pools. Occurring in mesic soils. Annual herb. Blooming period from Apr-July.	Does not occur
Rigid fringepod *Thysanocarpus rigidus*	Federal: None State: None CNPS: Rank 1B.2	Dry rocky slopes in pinyon and juniper woodland. Annual herb. Blooming period from Feb-May.	Does not occur
Robinson's pepper grass *Lepidium virginicum* var. *robinsonii*	Federal: None State: None CNPS: Rank 4.3	Chaparral, coastal sage scrub. Annual herb. Blooming period from Jan-July.	Does not occur

Species Name	Status	Habitat Requirements	Occurrence
Salt Spring checkerbloom *Sidalcea neomexicana*	Federal: None State: None CNPS: Rank 2B.2	Mesic, alkaline soils in chaparral, coastal sage scrub, lower montane coniferous forest, Mojavean desert scrub, and playas. Perennial herb. Blooming period from Mar-June.	Does not occur
San Bernardino aster *Symphyotrichum defoliatum*	Federal: None State: None CNPS: Rank 1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic). Perennial rhizomatous herb. Blooming period from July-Nov.	Does not occur
Santa Ana River woolly star *Eriastrum densifolium* ssp. *sanctorum*	Federal: FE State: SE CNPS: Rank 1B.1	Alluvial fan sage scrub, chaparral. Occurring on sandy or rocky soils. Perennial herb. Blooming period from Apr-Sept.	Does not occur
Slender-horned spineflower *Dodecahema leptoceras*	Federal: FE State: SE CNPS: Rank 1B.1	Sandy soils in alluvial scrub, chaparral, cismontane woodland. Annual herb. Blooming period from Apr-June.	Does not occur
Smooth tarplant *Centromadia pungens* ssp. *laevis*	Federal: None State: None CNPS: Rank 1B.1	Alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grasslands, disturbed habitats. Annual herb. Blooming period from Apr-Sept.	Does not occur
Sonoran maiden fern *Thelypteris puberula var. sonorensis*	Federal: None State: None CNPS: Rank 2B.2	Meadows and seeps (seeps and streams). Perennial rhizomatous herb. Blooming period from Jan-Sept.	Does not occur
South coast branching phacelia *Phacelia ramosissima* var. *austrolitoralis*	Federal: None State: None CNPS: Rank 3.2	Sandy, sometimes rocky soils in chaparral, coastal dunes, coastal scrub, and marshes and swamps (coastal salt). Perennial herb. Blooming period from Mar-Aug.	Does not occur
Southern California black walnut *Juglans californica*	Federal: None State: None CNPS: Rank 4.2	Chaparral, cismontane woodland, coastal sage scrub, alluvial surfaces. Perennial deciduous tree. Blooming period from Mar-Aug.	Confirmed absent
Southern tarplant *Centromadia parryi* ssp. *australis*	Federal: None State: None CNPS: Rank 1B.1	Disturbed habitats, margins of marshes and swamps, vernally mesic valley and foothill grassland, vernal pools. Annual herb. Blooming period from May-Nov.	Does not occur
Western spleenwort *Asplenium vespertinum*	Federal: None State: None CNPS: Rank 4.2	Rocky soils in chaparral, cismontane woodland, and coastal scrub. Perennial rhizomatous herb. Blooming period from Feb-June.	Does not occur

Species Name	Status	Habitat Requirements	Occurrence
White rabbit-tobacco *Pseudognaphalium leucocephalum*	Federal: None State: None CNPS: Rank 2B.2	Sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian woodland. Perennial herb. Blooming period from July-Dec.	Does not occur

STATUS

Federal
FE – Federally Endangered
FT – Federally Threatened
FC – Federal Candidate

State
SE – State Endangered
ST – State Threatened

CNPS
Rank 1A – Plants presumed extirpated in California and either rare or extinct elsewhere.
Rank 1B – Plants rare, threatened, or endangered in California and elsewhere.
Rank 2A – Plants presumed extirpated in California, but common elsewhere.
Rank 2B – Plants rare, threatened, or endangered in California, but more common elsewhere.
Rank 3 – Plants about which more information is needed (a review list).
Rank 4 – Plants of limited distribution (a watch list).

Threat Code extension
.1 – Seriously endangered in California (over 80% occurrences threatened)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

OCCURRENCE

- Does not occur – The site does not contain habitat for the species and/or the site does not occur within the geographic range of the species.
- Confirmed absent – The site contains suitable habitat for the species, but the species has been confirmed absent through focused surveys.
- Not expected to occur – The species is not expected to occur onsite due to low habitat quality, however absence cannot be ruled out.
- Potential to occur – The species has a potential to occur based on suitable habitat, however its presence/absence has not been confirmed.
- Confirmed present – The species was detected onsite incidentally or through focused surveys

4.5 Special-Status Animals

No special-status animals were detected at the Project site. Table 4-3 provides a list of special-status animals evaluated for the Project site through general biological surveys and habitat assessments. Species were evaluated based on the following factors, including: 1) species identified by the CNDDB as occurring (either currently or historically) on or in the vicinity of the Project site and 2) any other special-status animals that are known to occur within the vicinity of the Project site, for which potentially suitable habitat occurs on the site.

Table 4-3. Special-Status Animals Evaluated for the Project Site

Species Name	Status	Habitat Requirements	Occurrence
Invertebrates			
Crotch bumble bee *Bombus crotchii*	Federal: None State: None	Relatively warm and dry sites, including the inner Coast Range of California and margins of the Mojave Desert.	Does not occur
Amphibians			
Western spadefoot *Spea hammondii*	Federal: None State: SSC	Seasonal pools in coastal sage scrub, chaparral, and grassland habitats.	Does not occur
Reptiles			
California glossy snake *Arizona elegans occidentalis*	Federal: None State: SSC	Inhabits arid scrub, rocky washes, grasslands, chaparral.	Does not occur
Coastal whiptail *Aspidoscelis tigris stejnegeri (multiscutatus)*	Federal: None State: SSC	Open, often rocky areas with little vegetation, or sunny microhabitats within shrub or grassland associations.	Does not occur
Coast horned lizard *Phrynosoma blainvillii*	Federal: None State: SSC	Occurs in a variety of vegetation types including coastal sage scrub, chaparral, annual grassland, oak woodland, and riparian woodlands.	Does not occur
Coast patch-nosed snake *Salvadora hexalepis virgultea*	Federal: None State: SSC	Occurs in coastal chaparral, desert scrub, washes, sandy flats, and rocky areas.	Does not occur
Red-diamond rattlesnake *Crotalus ruber*	Federal: None State: SSC	Habitats with heavy brush and rock outcrops, including coastal sage scrub and chaparral.	Does not occur
Southern California legless lizard *Anniella stebbinsi*	Federal: None State: SSC	Broadleaved upland forest, chaparral, coastal dunes, coastal scrub; found in a broader range of habitats that any of the other species in the genus. Often locally abundant, specimens are found in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans	Does not occur
Birds			
Bank swallow (nesting) *Riparia riparia*	Federal: None State: ST	Low areas along rivers, streams, ocean coasts or reservoirs. Often use human-made sites.	Does not occur
Black swift (nesting) *Cypseloides niger*	Federal: BCC State: SSC	Nests in forested areas near rivers in dark, damp areas. Forages in skies over mountainous areas and on coastal cliffs.	Does not occur
Burrowing owl (burrow sites & some wintering sites) *Athene cunicularia*	Federal: BCC State: SSC	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), coastal dunes, desert floors, and some artificial, open areas as a year-long resident. Occupies abandoned ground squirrel burrows as well as artificial structures such as culverts and underpasses.	Not expected to occur
Coastal cactus wren (San Diego & Orange County only) *Campylorhynchus*	Federal: BCC State: SSC	Occurs almost exclusively in cactus (cholla and prickly pear) dominated coastal sage scrub.	Does not occur

Species Name	Status	Habitat Requirements	Occurrence
brunneicapillus sandiegensis			
Coastal California gnatcatcher *Polioptila californica californica*	Federal: FT State: SSC	Low elevation coastal sage scrub and coastal bluff scrub.	Does not occur
Golden eagle (nesting & wintering) *Aquila chrysaetos*	Federal: BCC State: WL, FP	In southern California, occupies grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nests on rock outcrops and ledges.	Does not occur
Grasshopper sparrow (nesting) *Ammodramus savannarum*	Federal: None State: SSC	Open grassland and prairies with patches of bare ground.	Does not occur
Least Bell's vireo (nesting) *Vireo bellii pusillus*	Federal: FE State: SE	Dense riparian habitats with a stratified canopy, including southern willow scrub, mule fat scrub, and riparian forest.	Does not occur
Long-eared owl (nesting) *Asio otus*	Federal: None State: SSC	Riparian habitats are required by the long-eared owl, but it also uses live-oak thickets and other dense stands of trees.	Does not occur
Southwestern willow flycatcher (nesting) *Empidonax traillii extimus*	Federal: FE State: SE	Riparian woodlands along streams and rivers with mature dense thickets of trees and shrubs.	Does not occur
Swainson's hawk (nesting) *Buteo swainsoni*	Federal: BCC State: ST	Summer in wide open spaces of the American West. Nest in grasslands, but can use sage flats and agricultural lands. Nests are placed in lone trees.	Does not occur
Tricolored blackbird (nesting colony) *Agelaius tricolor*	Federal: BCC State: CE, SSC	Breeding colonies require nearby water, a suitable nesting substrate, and open-range foraging habitat of natural grassland, woodland, or agricultural cropland.	Does not occur
Western yellow-billed cuckoo (nesting) *Coccyzus americanus occidentalis*	Federal: FT, BCC State: SE	Dense, wide riparian woodlands with well-developed understories.	Does not occur
White-tailed kite (nesting) *Elanus leucurus*	Federal: None State: FP	Low elevation open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Dense canopies used for nesting and cover.	Does not occur
Yellow warbler (nesting) *Setophaga petechia*	Federal: BCC State: SSC	Breed in lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and other small trees and shrubs typical of low, open-canopy riparian woodland. During migration, forages in woodland, forest, and shrub habitats.	Does not occur
Yellow-breasted chat (nesting) *Icteria virens*	Federal: None State: SSC	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and	Does not occur

Species Name	Status	Habitat Requirements	Occurrence
		dense brush with well-developed understories.	
Mammals			
American badger *Taxidea taxus*	Federal: None State: SSC	Most abundant in drier open stages of most scrub, forest, and herbaceous habitats, with friable soils.	Does not occur
Big free-tailed bat *Nyctinomops macrotis*	Federal: None State: SSC WBWG: MH	Roost mainly in crevices and rocks in cliff situations; also utilize buildings, caves, and tree cavities.	Not expected to occur due to a lack of suitable roosting habitat
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	Federal: None State: SSC	Coastal sage scrub, sage scrub/grassland ecotones, and chaparral.	Does not occur
Pallid bat *Antrozous pallidus*	Federal: None State: SSC WBWG: H	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	Does not occur
Pocketed free-tailed bat *Nyctinomops femorosaccus*	Federal: None State: SSC WBWG: M	Rocky areas with high cliffs in pine-juniper woodlands, desert scrub, palm oasis, desert wash, and desert riparian.	Does not occur
San Bernardino kangaroo rat *Dipodomys merriami parvus*	Federal: FE State: SSC	Typically found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and floodplains, and along washes with nearby sage scrub.	Does not occur
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	Federal: None State: SSC	Occupies a variety of habitats, but is most common among shortgrass habitats. Also occurs in sage scrub, but needs open habitats.	Does not occur
San Diego desert woodrat *Neotoma lepida intermedia*	Federal: None State: SSC	Occurs in a variety of shrub and desert habitats, primarily associated with rock outcrops, boulders, cacti, or areas of dense undergrowth.	Does not occur
Western mastiff bat *Eumops perotis californicus*	Federal: None State: SSC WBWG: H	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Does not occur
Western yellow bat *Lasiurus xanthinus*	Federal: None State: SSC WBWG: H	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Not expected to occur

STATUS

Federal
FE – Federally Endangered
FT – Federally Threatened
FPT – Federally Proposed Threatened
FC – Federal Candidate
BGEPA– Bald and Golden Eagle Protection Act

State
SE – State Endangered
ST – State Threatened
SC– State Candidate
CFP – California Fully-Protected Species
SSC – Species of Special Concern

Western Bat Working Group (WBWG)
H – High Priority
LM – Low-Medium Priority
M – Medium Priority
MH – Medium-High Priority

OCCURRENCE

- Does not occur – The site does not contain habitat for the species and/or the site does not occur within the geographic range of the species.
- Confirmed absent – The site contains suitable habitat for the species, but the species has been confirmed absent through focused surveys.
- Not expected to occur – The species is not expected to occur onsite due to low habitat quality, however absence cannot be ruled out.
- Potential to occur – The species has a potential to occur based on suitable habitat, however its presence/absence has not been confirmed.
- Confirmed present – The species was detected onsite incidentally or through focused surveys

4.5.1 Raptor Use

The Project site provides suitable foraging and breeding habitat for a number of raptor species, including special-status raptors. Southern California holds a diversity of birds of prey (raptors), and many of these species are in decline. For most of the declining species, foraging requirements include extensive open, undisturbed, or lightly disturbed areas, especially grasslands. This type of habitat has declined severely in the region, affecting many species, but especially raptors. A few species, such as Red-tailed Hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and American Kestrel (*Falco sparverius*), are somewhat adaptable to low-level human disturbance and can be readily observed adjacent to neighborhoods and other types of development. These species still require appropriate foraging habitat and low levels of disturbance in vicinity of nesting sites.

The Project site is primarily undeveloped with grassland and several trees that potentially provides foraging and some nesting for raptors.

4.6 Nesting Birds

The Project site contains trees, shrubs, and ground cover that provide suitable habitat for nesting native birds. Mortality of native birds (including eggs) is prohibited under California Fish and Game Code.[8]

4.7 Wildlife Linkages/ Corridors and Nursery Sites

Habitat linkages are areas which provide a communication between two or more other habitat areas which are often larger or superior in quality to the linkage. Such linkage sites can be quite small or constricted but may be vital to the long-term health of connected habitats. Linkage values are often addressed in terms of "gene flow" between populations, with movement taking potentially many generations. The Project is not identified as a habitat linkage.

[8] Sections 3505, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs.

Corridors are similar to linkages but provide specific opportunities for individual animals to disperse or migrate between areas, generally extensive but otherwise partially or wholly separated regions. Adequate cover and tolerably low levels of disturbance are common requirements for corridors. Habitat in corridors may be quite different than that in the connected areas, but if used by the wildlife species of interest, the corridor will still function as desired. The Project site does not contain a wildlife corridor.

Wildlife nurseries are sites where wildlife concentrate for hatching and/or raising young, such as rookeries, spawning areas, and bat colonies. Nurseries can be important to both special-status species as well as commonly occurring species. The Project site does not support a wildlife nursery.

4.8 Critical Habitat

The Project is not within areas mapped by the USFWS as critical habitat.

4.9 Jurisdictional Waters

As mentioned above, the Project site was evaluated for the presence of jurisdictional waters, including waters of the U.S. (including wetlands) subject to the jurisdiction of the Corps and Regional Board, and waters of the State (including riparian vegetation) subject to the jurisdiction of CDFW. The Project site does not contain features considered waters of the U.S. or waters the State.

4.10 Local Policies or Ordinances

The Project is subject to the City of Pomona Oak Tree Preservation Program, municipal code Section 5809-23, which applies to the project in that:

a) The Project Site consists of oak trees with a diameter of eight (8) inches or greater as measured 4.5 feet above the mean natural grade
b) All oaks on-site are outside of designated historic districts and historic landmarks.
c) No tree is designated as a specimen tree.

The revised Tree Report, prepare by Dudek and dated March 2020, has identified 6 protected trees within the Project site all of which are proposed for removal [Appendix C]. All protected trees are identified as southern live oak (*Quercus virginiana*).

5.0 IMPACT ANALYSIS

The following discussion examines the potential impacts to plant and wildlife resources that would occur as a result of the proposed project. Impacts (or effects) can occur in two forms, direct and indirect. Direct impacts are considered to be those that involve the loss, modification or disturbance of plant communities, which in turn, directly affect the flora and fauna of those habitats. Direct impacts also include the destruction of individual plants or animals, which may

also directly affect regional population numbers of a species or result in the physical isolation of populations thereby reducing genetic diversity and population stability.

Indirect impacts pertain to those impacts that result in a change to the physical environment, but which is not immediately related to a project. Indirect (or secondary) impacts are those that are reasonably foreseeable and caused by a project but occur at a different time or place. Indirect impacts can occur at the urban/wildland interface of projects, to biological resources located downstream from projects, and other offsite areas where the effects of the project may be experienced by plants and wildlife. Examples of indirect impacts include the effects of increases in ambient levels of noise or light; predation by domestic pets; competition with exotic plants and animals; introduction of toxics, including pesticides; and other human disturbances such as hiking, off-road vehicle use, unauthorized dumping, etc. Indirect impacts are often attributed to the subsequent day-to-day activities associated with project build-out, such as increased noise, the use of artificial light sources, and invasive ornamental plantings that may encroach into native areas. Indirect effects may be both short-term and long-term in their duration. These impacts are commonly referred to as "edge effects" and may result in a slow replacement of native plants by non-native invasive species, as well as changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to project sites.

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. A cumulative impact can occur from multiple individual effects from the same project, or from several projects. The cumulative impact from several projects is the change in the environment resulting from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

5.1 California Environmental Quality Act (CEQA)

A. Thresholds of Significance

Environmental impacts to biological resources are assessed using impact significance threshold criteria, which reflect the policy statement contained in CEQA, Section 21001(c) of the California Public Resources Code. Accordingly, the State Legislature has established it to be the policy of the State of California:

> *"Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities..."*

Determining whether a project may have a significant effect, or impact, plays a critical role in the CEQA process. According to CEQA, Section 15064.7 (Thresholds of Significance), each public agency is encouraged to develop and adopt (by ordinance, resolution, rule, or regulation) thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the

effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant. In the development of thresholds of significance for impacts to biological resources CEQA provides guidance primarily in Section 15065, Mandatory Findings of Significance, and the CEQA Guidelines, Appendix G, Environmental Checklist Form. Section 15065(a) states that a project may have a significant effect where:

> *"The project has 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 wildlife community, reduce the number or restrict the range of an endangered, rare, or threatened species, ..."*

Therefore, for the purpose of this analysis, impacts to biological resources are considered potentially significant (before considering offsetting mitigation measures) if one or more of the following criteria discussed below would result from implementation of the proposed project.

B. Criteria for Determining Significance Pursuant to CEQA

Appendix G of the 2018 State CEQA guidelines indicate that a project may be deemed to have a significant effect on the environment if the project is likely to:

> *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 Game or U.S. Fish and Wildlife Service.*
>
> *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 Game or U.S. Fish and Wildlife Service.*
>
> *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.*
>
> *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.*
>
> *e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*
>
> *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.*

5.2 Special-Status Species

Appendix G(a) of the CEQA guidelines asks if a project is likely to "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 Game or U.S. Fish and Wildlife Service."

5.2.1 Special-Status Plants

The proposed Project will not impact special-status plants.

5.2.2 Special-Status Animals

The proposed Project will not impact special-status animals.

5.3 Sensitive Vegetation Communities

Appendix G(a) of the CEQA guidelines asks if a project is likely to "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 Game or U.S. Fish and Wildlife Service."

The Project site does not support any sensitive vegetation communities. The proposed Project would permanently impact approximately 7.66 acres of lands through grading, including areas of remedial grading that will not be restored to pre-project conditions. Permanent impacts include approximately 6.48 acres of Disturbed/*Bromus sp. – Hordeum sp.* grassland and 1.18 acres of disturbed/developed roads and sidewalks, of which 0.99 acre occurs onsite and 0.19 acre occurs offsite. Table 5-1 provides a summary of impacts to vegetation/land use types.

Table 5-1. Summary of Vegetation/Land Use Impacts

VEGETATION/LAND USE TYPE	ONSITE PROJECT SITE (acres)	OFFSITE PROJECT SITE (acres)
Disturbed/*Bromus sp. – Hordeum sp.* Grassland	6.48	0.00
Disturbed/Developed	0.99	0.19
Total	**7.47**	**0.19**

5.4 Wetlands

Appendix G(c) of the State CEQA guidelines asks if a project is likely to "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."

The Project site does not contain any state or federally protected wetlands.

5.5 Wildlife Movement and Native Wildlife Nursery Sites

Appendix G(d) of the State CEQA guidelines asks if a project is likely to "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."

5.5.1 Wildlife Movement

The Project site is small and is not adjacent to large habitat blocks and it is surrounded by an interstate highway, major roads, and urban development; therefore, the project will not interfere substantially with the movement of native resident or migratory fish or wildlife species and does not function as a critical habitat linkage or wildlife corridor.

5.5.2 Native Wildlife Nursery Site

The project has the potential to impact active bird nests if vegetation is removed during the nesting season (February 1 to August 31). Impacts to nesting birds are prohibited by the MBTA and California Fish and Game Code.

Although impacts to native birds are prohibited by MBTA and similar provisions of California Fish and Game Code, impacts to native birds by the proposed Project would not be a significant impact under CEQA. The native birds with potential to nest on the Project site would be those that are extremely common to the region and highly adapted to human landscapes (e.g., house finch, killdeer). The number of individuals potentially affected by the Project would not significantly affect regional, let alone local populations of such species. A measure is identified in Section 6.0 of this report to avoid impacts to nesting birds.

5.6 Local Policies or Ordinances

Appendix G(e) of the State CEQA guidelines asks if a project is likely to "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance."

The Project is subject to the City of Pomona Oak Tree Preservation Program, municipal code Section 5809-23. The Project proposes removal of 6 southern live oak trees due to impacts related to project implementation. The revised Tree Report and subsequent memorandum, *Preservation of Trees, Protected Tree Report Jaqueline Dr. and Murchison Ave.*, prepared by Dudek dated June 24, 2020 [Appendix D – Tree Memorandum], conclude that removal of the trees are required to accommodate the proposed development based on the disturbance analysis, and tree health, structure, observable defects, and location. The revised Tree Report identified two trees for potential relocation; however, the subsequent Tree Memorandum clarified that relocation of the two trees would have a high likelihood of failure and mortality due to the large size and maturity of these two trees. The relocation process would cause severe root ball loss

and the trees would also require extensive structural support which may fail and present increased risk to the community. The Tree Memorandum also analyzed preservation-in-place of an additional tree but concluded that infrastructure improvements and grading elevation changes would cause tree mortality. The revised Tree Report and Tree Memorandum recommends removal and replacement of 6 oak trees due to project implementation. A measure is identified in Section 6.0 of this report to comply with the City ordinance.

5.7 Habitat Conservation Plans

Appendix G(f) of the State CEQA guidelines asks if a project is likely to "conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan."

The Project site is not subject to any Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans.

5.8 Jurisdictional Waters

The Project site does not contain features considered waters of the U.S. or waters the State; therefore, the proposed Project will not impact Corps, RWQCB, or CDFW jurisdiction.

5.9 Indirect Impacts to Biological Resources

In the context of biological resources, indirect effects are those effects associated with developing areas adjacent to native open space. Potential indirect effects associated with development include water quality impacts associated with drainage into adjacent open space/downstream aquatic resources; lighting effects; noise effects; invasive plant species from landscaping; and effects from human access into adjacent open space, such as recreational activities (including off-road vehicles and hiking), pets, dumping, etc. Temporary indirect effects may also occur as a result of construction-related activities.

The Project site is not located adjacent to native open space; therefore, will not cause indirect effects on biological resources.

5.10 Cumulative Impacts to Biological Resources

Cumulative impacts are defined as the direct and indirect effects of a proposed project which, when considered alone, would not be deemed a substantial impact, but when considered in addition to the impacts of related projects in the area, would be considered potentially significant. "Related projects" refers to past, present, and reasonably foreseeable probable future projects, which would have similar impacts to the proposed project.

The Project site is surrounded by existing urban development and major roads and highways. No sensitive species or habitats have been detected or are expected to occur within the Project site; therefore, no cumulative impacts are expected to occur.

6.0 MITIGATION/AVOIDANCE MEASURES

The following discussion provides project-specific mitigation/avoidance measures for actual or potential impacts to special-status resources.

6.1 Nesting Birds

The Project site contains vegetation with the potential to support native nesting birds. As discussed above, the California Fish and Game Code prohibits mortality of native birds, including eggs. The following measure is recommended to avoid mortality to nesting birds. Potential impacts to native birds was not considered a biologically significant impact under CEQA; however, to comply with state law, the following is recommended:

- As feasible, vegetation clearing should be conducted outside of the nesting season, which is generally identified as March 1 through August 31 (as early as January 1 for some raptors). If avoidance of the nesting season is not feasible, then a qualified biologist shall conduct a nesting bird survey within three days prior to any disturbance of the site, including disking, demolition activities, and grading. If no nesting birds are detected during surveys, then construction-related activities may proceed. If active nests are identified, the biologist shall establish suitable buffers around the nests, and the buffer areas shall be avoided until the nests are no longer occupied and the juvenile birds can survive independently from the nests. Buffers may be as large as 300 feet (500 feet for raptors) or as determined by the qualified biologist. The biologist shall act as monitor to determine when the nest is no longer active and remove the avoidance buffer.

6.2 Protected Trees

The Project site contains 6 protected oak trees proposed for removal that are subject to the City of Pomona Oak Tree Preservation Program. The City does not define mitigation requirements for the removal and replacement of protected trees. To offset impacts to 6 protected oak trees, the revised Tree Report and Tree Memorandum [Appendix C and D] recommends tree replacement at a 2:1 ratio to equal 12 24-inch box trees to be incorporated into the Project's landscaping plan. Tree replacement numbers are based on actual impacts and the final number may differ from this report. It is recommended that the replacement trees be a non-invasive, drought tolerant species suitable for the site conditions and meet any spacing restrictions. It is recommended that tree planting locations be addressed in the landscaping plan to address suitable site locations and meet any spacing restrictions and all Project trees be subject to three years of monitoring by an independent third-party certified arborist to track health, growth, and condition of trees. If the trees exhibit decline, remedial measures, including replacement, may be warranted to increase successful tree establishment.

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8.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

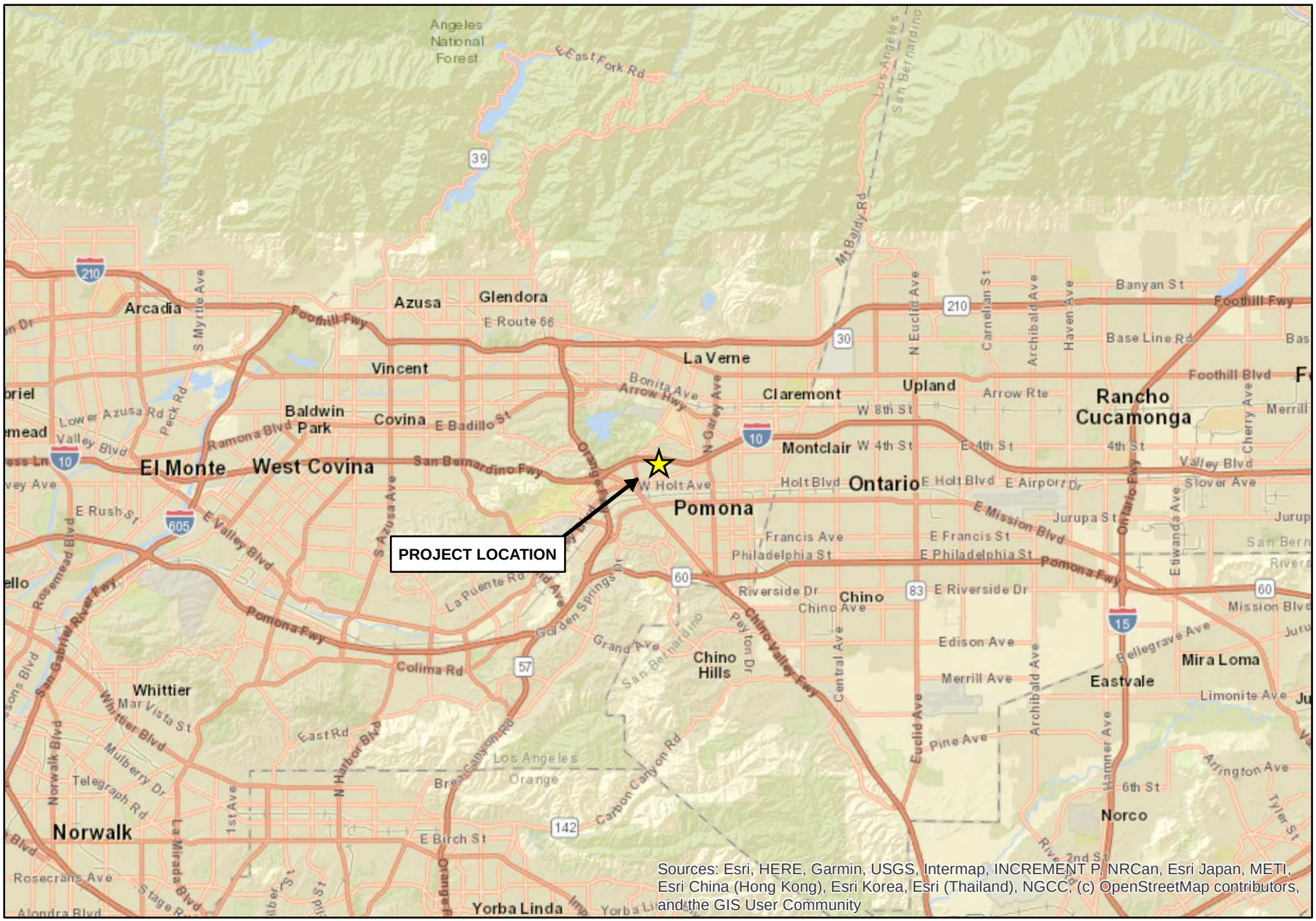


Signed:_____ Date: _5/28/2020 [Revised 9/24/2020]

Stephanie Cashin
Associate Biologist

p: 1423-04c.biotech.docx

Source: ESRI World Street Map



N

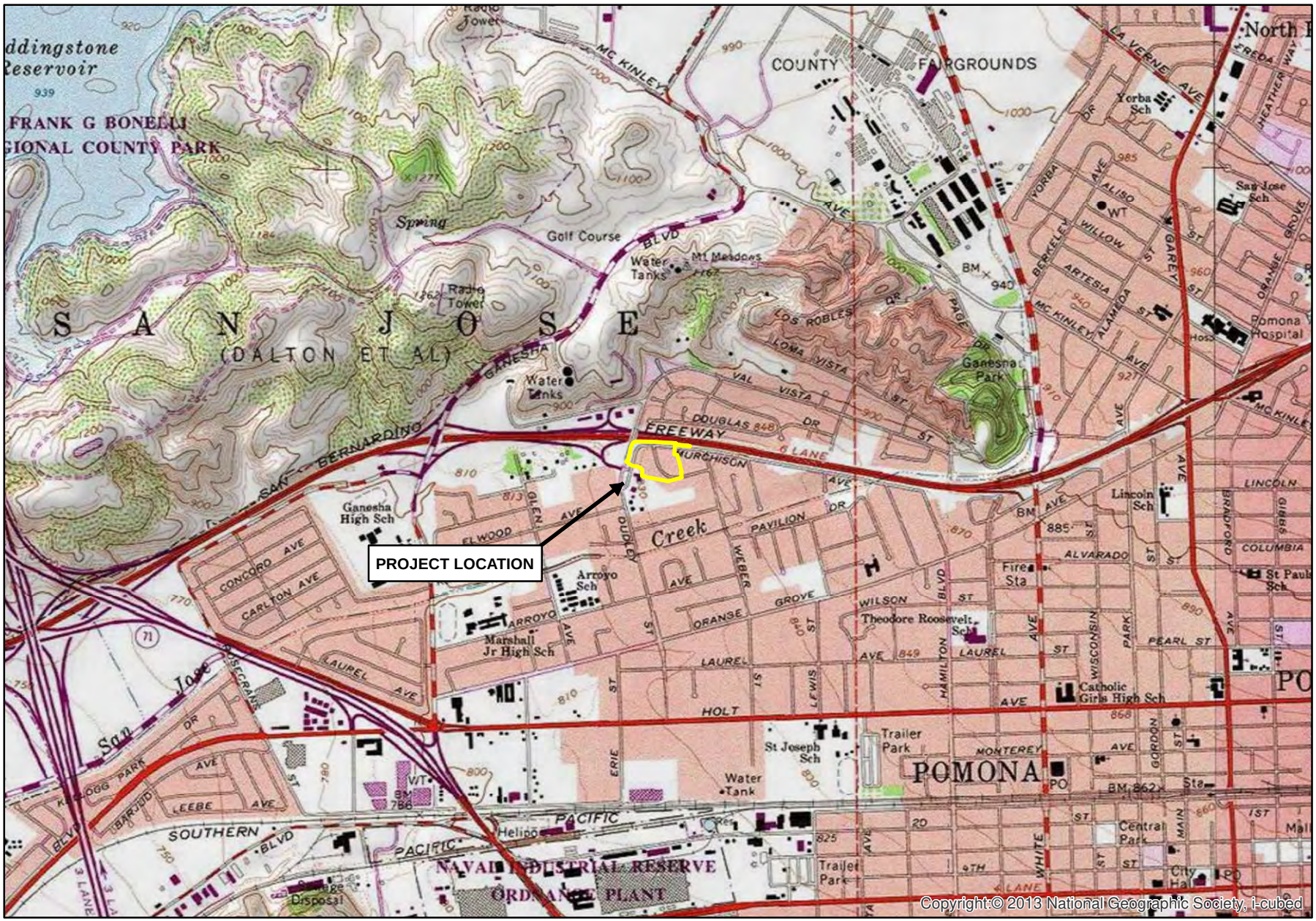
0 2 4 8 Miles

DUDLEY/POMONA PROPERTY

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1



Adapted from USGS San Dimas, CA quadrangle

N

0 1,000 2,000 4,000 Feet

DUDLEY/POMONA PROPERTY

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2



Project Site

Project Site Plan

Onsite Project Area

Offsite Project Area

N

0 50 100 200

Feet

1 inch = 100 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: B. Gale, GLA
Date Prepared: September 25, 2020

DUDLEY/POMONA PROPERTY

Site Plan Map

GLENN LUKOS ASSOCIATES

Exhibit 3

X:\1100 AFTER THE REST\1423-04POMO\1423-4_GIS\1423-4_SitePlan.mxd



Project Site

Disturbed/Bromus – Hordeum Grassland

Disturbed/Developed

N

0 50 100 200

Feet

1 inch = 100 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: B. Gale, GLA
Date Prepared: September 25, 2020

DUDLEY/POMONA PROPERTY

Vegetation Map

GLENN LUKOS ASSOCIATES

Exhibit 4

X:\1100 AFTER THE REST\1423-04POMO\1423-4_GIS\VegetationGIS\1423-4_Vegetation.mxd



Photograph 1: View facing approximately northwest near the southeastern corner of the project site showing the primarily undeveloped but disturbed project site condition with dense non-native grasses, herbs, and Mexican fan palm (*Washingtonia robusta*).



Photograph 2: View of project site facing approximately west with non-native grasses dominant and several mature non-native trees at left and in distance, including southern live oak (*Quercus virginiana*), and Shamel ash (*Fraxinus uhdei*).



Photograph 3: View facing approximately north along the eastern boundary with dense non-native grasses dominating the project site, including ripgut grass (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), and foxtail barley (*Hordeum murinum*).



Photograph 4: View facing approximately west along the southern project boundary with elementary school in the distance.

FLORAL COMPENDIUM

The floral compendium lists all species identified during floristic level/focused plant surveys conducted for the Project site. Taxonomy typically follows the Angiosperm Phylogeny Group (APG), which in some cases differs from The Jepson Manual (1993). Common plant names are taken from Hickman (1993), Munz (1974), and Roberts et al (2004) and Roberts (2008). An asterisk (*) denotes a non-native species.

SCIENTIFIC NAME	COMMON NAME
MONOCOTYLEDONS	**MONOCOTS**
ARECACEAE	**Palm Family**
* *Washingtonia robusta*	Mexican fan palm
POACEAE	**Grass Family**
* *Arundo donax*	giant reed
* *Avena fatua*	common wild oat
* *Bromus diandrus*	ripgut grass
* *Bromus madritensis* subsp. *rubens*	foxtail chess
* *Cynodon dactylon*	Bermuda grass
* *Festuca cicutarium*	Italian ryegrass
* *Hordeum murinum*	foxtail barley
EUDICOTYLEDONS	**EUDICOTS**
AMARANTHACEAE	**Amaranth Family**
* *Salsola tragus*	Russian-thistle
ASTERACEAE	**Sunflower Family**
* *Centaurea melitensis*	tocalote
BORAGINACEAE	**Borage Family**
Amsinckia menziesii var. *intermedia*	common fiddleneck
BRASSICACEAE	**Mustard Family**
* *Capsella bursa-pastoris*	shepherd's purse
* *Hirschfeldia incana*	short-pod mustard
* *Raphanus sativus*	wild radish
* *Sisymbrium irio*	London rocket
FABACEAE	**Legume Family**
* *Melilotus indica*	yellow sweetclover

FAGACEAE		**Beech Family**
	Quercus virginiana	southern live oak
GERANIACEAE		**Geranium Family**
*	*Erodium cicutarium*	red-stemmed filaree
MALVACEAE		**Mallow Family**
*	*Malva parviflora*	cheeseweed
OLEACEAE		**Olive Family**
	Fraxinus sp.	Shamel ash

AVES

AEGITHALIDAE
Psaltriparus minimus

CHARADRIIDAE
Charadrius vociferus

COLUMBIDAE
* *Streptopelia decaocto*
Zenaida macroura

FRINGILLIDAE

Spinus psaltria

MIMIDAE
Mimus polyglottos

PASSERIDAE
* *Passer domesticus*

TROCHILIDAE
Selasphorus sasin

BIRDS

Long-Tailed Tits And Bushtits
bushtit

Plovers And Relatives
killdeer

Pigeons And doves
Eurasian collared-dove
mourning dove

Fringilline And Cardueline Finches and Allies
lesser goldfinch

Mockingbirds And Thrashers
northern mockingbird

Old World Sparrows
house sparrow

Hummingbirds
Allen’s hummingbird

MAMMALIA

GEOMYIDAE
Thomomys bottae

SCIURIDAE
Otospermophilus beecheyi

MAMMALS

Pocket Gophers
Botta’s pocket gopher

Squirrels, Chipmunks, And Marmots
California ground squirrel

Taxonomy and nomenclature are based on the following.

Birds: American Ornithologists' Union (1998. The A.O.U. Checklist of North American Birds, seventh edition. American Ornithologists' Union, Washington D.C.; and 2000, 2002, 2003, and 2004 supplements.).

Mammals: Grenfell, W.E., Parisi, M.D. and McGriff, D. (2003. Complete list of amphibians, reptiles, birds and mammals in California. California Department of Fish and Game. http://www.dfg.ca.gov/whdab/pdfs/species_list.pdf).

The faunal compendium lists species that were either observed within or adjacent to the Study Area (denoted by a '*'), or that have some potential to occur within or adjacent to the Study Area (denoted by a '+'). Taxonomy and common names are taken from the California Wildlife Habitat Relationships System (CDFG 2003); AOU (1998) and CDFG (1990) for birds; Stebbins (1985), Collins (1990), Jones et al. (1992), and CDFG (1990) for reptiles and amphibians; and CDFG (1990) for mammals.

Protected Tree Report
Jaqueline Dr. and Murchison Ave.
City of Pomona, California

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
DBH	diameter at breast height
EDM	electronic distance measuring
ISA	International Society of Arboriculture

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1 Introduction

This protected tree report provides an inventory and evaluation of the trees located at the intersection of Jaquelin Drive and Murchison Avenue in the City of Pomona (City) off the 10 Freeway (Assessor's Parcel Numbers 8358-035-908, -909, -910, -911, -912, -913, -914, -915, -917, -918, -922, -923, -925, -926, -928, -929, -935, -936, -937, -938, -939, -941). The proposed Project Site is located on privately owned land within the City of Pomona, California (Figure 1, Regional Map). As such, this tree report covers the regulations and requirements for the protection and removal of protected trees within the City's jurisdiction.

To ensure the protection of, and to further regulate the removal of, protected trees, a tree inventory and assessment of the Project Site was performed pursuant to the City municipal code Section.5809-23. - Oak tree preservation Program. This Section applies to the project site in that:

- The Project Site consists of oak trees with a diameter of eight (8) inches or greater as measured 4.5 feet above the mean natural grade.
- All oak trees on-site are outside of designated historic districts and historic landmarks.
- No tree is designated as a specimen tree.

In addition to evaluating City protected trees, Dudek inventoried all non-protected trees measuring 8 inches in trunk diameter or greater.

Dudek was retained by MLC Holdings Inc. to conduct a tree inventory and assessment of the Project Site. Dudek's Urban and Community Forestry Division's International Society of Arboriculture (ISA) Certified Arborists, performed various functions associated with surveying, inventorying, and evaluating the condition of selected trees on the Project Site, as described in this report.

The purpose of this report is to present the physical characteristics, mapped locations, and disposition of the trees on the Project Site.

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2 Project Location and Description

The Project Site is generally bounded by a residential neighborhood on the east, Interstate 10 to the north, Dudley Street to the west, and Cortez Elementary to the south (Figure 1 and Figure 2, Vicinity Map). This tree assessment addresses the Project Site, where development activity is proposed.

2.1 Existing Conditions

The Project Site is approximately 7.69 acres of open space, including trees and shrubs, associated with an undeveloped parcel in an urban area. The trees and shrubs are located in selected groupings and are dispersed throughout the property (see Appendix A, Photograph Log).

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SOURCE: Esri

DUDEK

0 4 8 Miles

FIGURE 1

Regional Map

Protected Tree Report for Jacueline Dr & Murchison Ave

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SOURCE: USGS 7.5' Poway, CA Quadrangle

DUDEK

Figure 2

Vicinity Map

Protected Tree Report for Jacquelin Dr & Murchison Ave

Date: 12/23/2013 - Last saved by: dbranks - Path: J:\Projects\12-009 MLC Holdings\Fig 2 vicinity map.mxd

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3 Methods

Dudek mapped tree locations using a Trimble Pathfinder Pro XH GPS receiver. The Pathfinder has a horizontal accuracy of 1 meter (1-sigma) using differential code positioning techniques. Since tree canopies can sometimes cause loss of satellite lock by blocking the line-of-sight to satellites, an electronic compass and reflectorless electronic distance measuring (EDM) device was also used in mapping tree locations. The EDM/compass combination operates in concert with the Pathfinder GPS system to position offsets, and offset information is automatically attached to the GPS position data string. The electronic tree locations were then evaluated using ArcView 10.4 software to determine the position of the trees related to the Project Site.

The trees throughout the Project Site were mapped and given a unique identification number; these numbers correspond to the tree locations presented in Appendix B, Tree Location Exhibit, and Appendix C, Tree Information Matrix. Tree diameter was measured using a diameter tape providing adjusted figures for diameter measurements when wrapping the tape around an object's circumference. Diameter measurements were taken using protocol provided in the Guide for Plant Appraisal, published by the ISA (Council of Tree and Landscape Appraisers 2000). The diameter at breast height (DBH) of each tree was taken at a circumference at 4.5 feet above the ground along the trunk axis, with common exceptions. In cases where a tree's trunk was located on a slope, the 4.5-foot distance was approximated as the average of the shortest and longest sides of the trunk (i.e., the uphill side and downhill side of a tree's trunk, respectively) and the measurement was made at the circumference of the trunk at this point. Tree height was visually estimated. Tree canopy diameters were typically estimated by "pacing-off" the measurement based on the investigator's knowledge of his stride length or by visually estimating the canopy width. The diameter measurements were always made along an imaginary line intersecting the tree trunk that best approximated the average canopy diameter.

Pursuant to the Guide for Plant Appraisal, tree health and structure was evaluated with respect to five distinct tree components: roots, trunk, scaffold branches, small branches, and foliage. Each component of the tree was assessed with regard to health factors such as insect, fungal, or pathogen damage; mechanical damage; presence of decay; presence of wilted or dead leaves; and wound closure. Components were graded as good, fair, poor, and dead, with 'good' representing no apparent problems, and 'dead' representing a dying and/or dead tree. Concurrent with tree health and structural evaluations, each tree was evaluated for its relocation potential. Trees for relocation were noted, if applicable, where tree and site conditions were favorable.

3.1 Scope of Work Limitations

No root crown excavations or investigations or internal probing were performed during the tree assessments. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation or relocation in an urban setting be thoroughly inspected for internal, or subterranean, decay by a qualified arborist before finalizing preservation or relocation plans.

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4 Results

4.1 Protected Tree Summary

There are six protected trees located within the limits of the proposed Project Site. Table 1 reflects the species and DBH of each tree, with additional characteristics listed in Appendix C.

Table 1. Summary of Protected Tree Species

Tree Species				
Tree Nos.	Scientific Name	Common Name	Number of Stems	Total DBH
6	*Quercus virginiana*	Southern live oak	1	22
7	*Quercus virginiana*	Southern live oak	1	24
8	*Quercus virginiana*	Southern live oak	13	68
9	*Quercus virginiana*	Southern live oak	1	26
10	*Quercus virginiana*	Southern live oak	1	32
13	*Quercus virginiana*	Southern live oak	1	16

Notes: DBH = diameter at breast height.

The six protected trees are scattered throughout the Project Site. Five of the trees are single-stemmed and have tree diameters at 4.5 feet DBH that range from 16 to 32 inches. One of the trees is multi-stemmed and has a cumulative tree diameter of 68 inches. Average tree heights range from 35 to 60 feet tall and crown widths extend 30 to 40 feet at their widest points.

Good condition trees exhibit acceptable vigor, healthy foliage, adequate structure, and lack of any major maladies. Fair condition trees are typical, with few maladies, but declining vigor. The health and structure of each tree was recorded and reflected in Table 2.

Table 2. Summary of Protected Tree Species Health and Structure

Tree Species				
Tree Nos.	*Scientific Name*	*Common Name*	*Health*	*Structure*
6	*Quercus virginiana*	Southern live oak	good	fair
7	*Quercus virginiana*	Southern live oak	good	fair
8	*Quercus virginiana*	Southern live oak	good	poor
9	*Quercus virginiana*	Southern live oak	fair	fair
10	*Quercus virginiana*	Southern live oak	good	fair
13	*Quercus virginiana*	Southern live oak	fair	fair

To accommodate the proposed development, all six of the protected trees would require removal.

4.2 Ornamental Tree Summary

Seven trees on the Project Site do not meet the definition of a protected tree, and are noted in Table 3.

Table 3. Summary of Ornamental Tree Species

Tree Species				
Tree Nos.	Scientific Name	Common Name	Number of Stems	Total DBH
1	*Fraxinus uhdei*	Shamel ash	15	52
2	*Fraxinus uhdei*	Shamel ash	22	88
3	*Fraxinus uhdei*	Shamel ash	10	57
4	*Fraxinus uhdei*	Shamel ash	17	61
5	*Fraxinus uhdei*	Shamel ash	1	36
11	*Washingtonia robusta*	Mexican fan palm	1	20
12	*Washingtonia robusta*	Mexican fan palm	3	60

4.3 Mapping

The location of each tree identified in the Project Site is depicted in Appendix B.

4.4 Tree Removal/Encroachment

The analysis of affected trees presented below is based on the proposed Project footprint. For the purposes of this report, tree removal is conservatively considered necessary when the trunk is located inside or within 2 feet of the proposed limits of development. Encroachment is expected when soil and roots are disturbed within the tree-protected zone (canopy drip line plus 5 feet or 15 feet from trunk, whichever is greater). Typically, specific circumstances allow some protected trees that are being encroached upon to be preserved in place within or adjacent to the development area. Table 2 summarizes the total number of protected trees by species that have potential to be subject to direct construction-related impacts.

In total, six trees will require removal based on the disturbance analysis conducted for this report. Individual tree locations and dispositions are provided in Appendix B and Appendix C, respectively.

4.5 Candidates Suitable for Preservation and Relocation

In addition to the general site tree evaluations, Dudek evaluated all of the potentially disturbed protected trees for their potential for preservation in place or relocation. Trees identified as candidates for preservation in place and relocation typically exhibit good health (new growth and vigor) and structure (trunk/branching); have no uncorrectable, outwardly detectable defects; and show no signs or symptoms of serious pest infestation or species-specific pathogens. In order for the trees to avoid incidental damage during construction or relocation, preservation and protection measures must be provided before, during, and following the construction phase.

Based on tree health, structure, observable defects, and tree location, two trees—tree nos. 6 and 7—are considered potential candidates for relocation. However, it should be noted that tree relocation is not required by the City. Individual tree locations and dispositions are provided in Appendix B and Appendix C, respectively.

4.6 Mapping

The location of each tree identified in the Project Site is depicted in Appendix B.

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5 Mitigation

The City does not define mitigation requirements for the removal and replacement of protected trees. As such, to mitigate for the removal of six protected trees, Dudek recommends the following mitigation plan.

5.1 Mitigation Plan

To offset the impacts associated the removal of six protected trees, Dudek recommends that MLC Holdings Inc. replace the trees at a minimum ratio of 2:1. Specifically, Dudek recommends that 12 24-inch box trees be incorporated into the proposed Project's landscape plan. Furthermore, Dudek recommends that the replacement trees be a non-invasive, drought tolerant/resistant species that are suitable for the site conditions, and meet any spacing restrictions.

In addition to replacement at a 2:1 ratio, Dudek recommends all tree plantings be subject to a 3-year monitoring effort by an independent third-party certified arborist. This monitoring effort would consider growth, health, and condition of the subject trees in order to evaluate the mitigation plan's success. The monitoring effort may result in a recommendation of remedial actions should any of the tree plantings exhibit poor or declining health.

The specific location of individual mitigation tree plantings on site should be addressed in a mitigation planting plan or landscape design plan prepared for the Project Site. Dudek estimates that all of the required mitigation trees can be accommodated within the proposed Project landscape areas. The recommended replacement mitigation ratio is at the discretion of the City and subject to final tree impact analysis. As such, the final tree numbers associated with tree replacement and other mitigation components may vary from that presented in this tree report.

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6 Tree Protection

All six protected trees located on the Project Site would be removed. As such, tree protection is not required and/or recommended. However, should tree preservation be selected, Dudek recommends that any preserved trees be protected according to the Tree Protection Measures discussed in Appendix D.

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7 Conclusion

The Project Site includes six trees meeting the City's definition of a protected tree. To offset the impacts associated with the removal of six protected trees, Dudek recommends that that MLC Holdings Inc. replace the trees at a minimum ratio of 2:1 with 12 24-inch box non-invasive, drought tolerant/resistant species that are suitable for the site conditions, and meet any spacing restrictions. The recommended replacement mitigation ratio is at the discretion of the City and subject to final tree impact analysis. As such, the final tree numbers associated with tree replacement and other mitigation components may vary from that presented in this protected tree report. Should MLC Holdings Inc. choose to re-incorporate mature trees into the post-construction landscape, two trees—tree nos. 6 and 7—are considered viable candidates for relocation. However, as previously stated, relocation is not a City requirement. Actual tree impact or encroachment numbers may be lower than anticipated and presented in this report once grading plans are staked in the field and are being implemented. Any adjustments to the number of impacted trees would be documented by the Project's arborist.

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8 Arborist's Disclosure

This report provides conclusions and recommendations based only on a visual examination of the trees and surrounding site by an ISA Certified Arborist and reasonable reliance upon the completeness and accuracy of the information provided to the arborist. The examination did not include subterranean or internal examination of the trees.

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Although trees provide many benefits to those who live near them, they also include inherent risks from breakage or failure that can be minimized, but not eliminated.

Arborists cannot detect every condition that could possibly lead to the failure of a tree. Trees are living organisms subject to attack by disease, insects, fungi, weather, and other forces of nature, and conditions that lead to failure are often hidden within trees and below ground. There are some inherent risks with trees that cannot be predicted with any degree of certainty, even by a skilled and experienced arborist. Arborists cannot predict acts of nature including, without limitation, storms of sufficient strength, which can cause even an apparently healthy tree to fail. Additionally, arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for any specific period of time. A tree's condition could change over a short or long period of time due to climatic, cultural, or environmental conditions. Further, there is no guarantee or certainty that recommendations or efforts to correct unsafe conditions will prevent future breakage or failure of a tree.

To live or work near trees is to accept some degree of risk. Neither the author of this report nor Dudek have assumed any responsibility for, nor will either of them be liable for, any claims, losses or damages for damage to any tree, death or injury to any person, or any loss of or damage to any personal or real property.

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9 References

Council of Tree and Landscape Appraisers. 2000. *Guide for Plant Appraisal*, 9th Ed. Champaign, Illinois: International Society of Arboriculture.

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Appendix A

Photograph Log

Protected Tree Report – Jaqueline Dr. and Murchison Ave.
Photograph Log



Photo #1. View facing north of tree nos. 1,2,3



Photo #2. View facing north of tree no. 4.

Photographs were taken on December 13, 2019

Protected Tree Report – Jaqueline Dr. and Murchison Ave.
Photograph Log



Photo #3. View facing northwest of tree no. 5.



Photo #4. View facing east of tree nos. 6,7,8

Photographs were taken on December 13, 2019

Protected Tree Report – Jaqueline Dr. and Murchison Ave.
Photograph Log



Photo #5. View facing east of tree no 9.



Photo #6. View facing east of tree no 10.

Photographs were taken on December 13, 2019

Protected Tree Report – Jaqueline Dr. and Murchison Ave.

Photograph Log

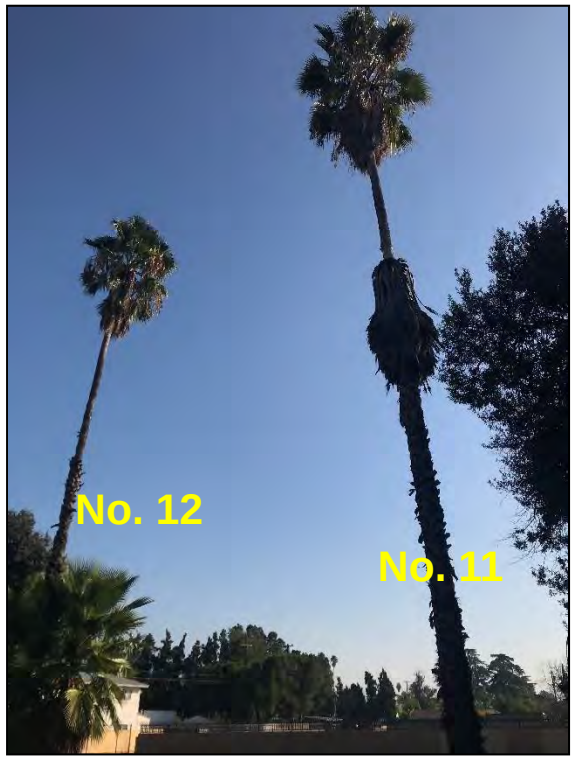

Photo #7. View facing south of tree nos. 11 and 12.



Photo #8. View facing east of tree no. 13

Photographs were taken on December 13, 2019

Protected Tree Report – Jaqueline Dr. and Murchison Ave.
Photograph Log



Photo #9. Representative photograph of site facing north.

Photographs were taken on December 13, 2019

Appendix B

Tree Location Exhibit



DUDEK

12409

Appendix B - Tree Location Exhibit

Protected Tree Report for Jacqueline Dr & Murchison Ave

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Appendix C

Tree Information Matrix

Appendix C - Tree Information Matrix

Sunwest Project														
Tree No.	Botanical Name	Common Name	Number of Stems	Individual Stems		Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Impact Status	Latitude	Longitude	Protected Status (Y/N)
				S1	S2									
1	*Fraxinus udhei*	shamel ash	15	6	6	25	25	fair	very poor	stems total 52" DBH	Removal	-117.77631	34.072458	Yes
2	*Fraxinus udhei*	shamel ash	22	5	5	25	25	fair	very poor	stems total 88" DBH	Removal	-117.77643	34.072469	Yes
3	*Fraxinus udhei*	shamel ash	10	6	6	25	25	poor	very poor	stems total 57" DBH	Removal	-117.77655	34.072478	Yes
4	*Fraxinus udhei*	shamel ash	17	4	4	20	20	poor	very poor	stems total 61" DBH	Removal	-117.77684	34.0724955	Yes
5	*Fraxinus udhei*	shamel ash	1	36		50	60	fair	fair		Removal	-117.77715	34.0724514	Yes
6	*Quercus virginiana*	southern live oak	1	22		35	40	good	fair		Removal	-117.77732	34.0721702	Yes
7	*Quercus virginiana*	southern live oak	1	24		35	35	good	fair		Removal	-117.77726	34.0720398	Yes
8	*Quercus virginiana*	southern live oak	13	6	6	30	30	good	poor	stems total 68" DBH	Removal	-117.77723	34.0719114	Yes
9	*Quercus virginiana*	southern live oak	1	26		50	35	fair	fair	broken limb in crown	Removal	-117.77693	34.0716955	Yes
10	*Quercus virginiana*	southern live oak	1	32		40	40	good	fair		Removal	-117.7763	34.0713716	Yes
11	*Washingtonia robusta*	Mexican fan palm	1	20		60	12	good	good		Removal	-117.77622	34.0714015	Yes
12	*Washingtonia robusta*	Mexican fan palm	3	20	20	60	12	good	good	additional stem of 20" dbh	Removal	-117.77609	34.071404	Yes
13	*Quercus virginiana*	southern live oak	1	16		40	30	fair	fair		Removal	-117.77599	34.0714062	Yes

Appendix D

Tree Protection Measures

Appendix D – Tree Protection Measures

The following sections are included as general guidelines for tree protection from construction impacts. The measures presented should be monitored by arborists and enforced by contractors and developers for maximum benefit to the trees.

Tree Protection Measures Prior to Construction

Fencing: All remaining trees that will not be relocated or removed should be preserved and protected in place. Trees within approximately 15 feet of proposed construction activity should be temporarily fenced with chain link or other material satisfactory to City planning staff throughout grading and construction activities. The fencing should be installed 3 feet outside of the dripline of each tree (or edge of canopy for cluster of trees), be 4 feet tall, and staked every 6 feet. The fenced area should be considered the tree protection zone (TPZ) unless proximate construction required temporary removal.

Pre-Construction Meeting: A pre-construction meeting should be held between all contractors (including grading, tree removal/pruning, builders, etc.) and the arborist. The arborist will instruct the contractors on tree protection practices and answer any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, should provide written acknowledgement of their receiving tree protection training. This training should include information on the location and marking of protected trees, the necessity of preventing damage, and the discussion of work practices that will accomplish such.

Protection and Maintenance During Construction

Once construction activities have begun the following measures should be adhered to:

Equipment Operation and Storage: Avoid heavy equipment operation around the trees. Operating heavy machinery around the root zones of trees will increase soil compaction, which decreases soil aeration and subsequently reduces water penetration in the soil. All heavy equipment and vehicles should, at minimum, stay out of the fenced TPZ, unless where specifically approved in writing and under the supervision of a Certified Arborist or as provided by the approved landscape plan.

Storage and Disposal: Do not store or discard any supply or material, including paint, lumber, concrete overflow, etc. within the protection zone. Remove all foreign debris within the protection zone; it is important to leave the duff, mulch, chips, and leaves around the retained trees for water retention and nutrients. Avoid draining or leakage of equipment fluids near retained trees. Fluids such as gasoline, diesel, oils, hydraulics, brake and transmission fluids, paint, paint thinners, and glycol (anti-freeze) should be disposed of properly. Keep equipment parked at least 50 feet away from retained trees to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the retained trees could lead to decline and death.

Grade Changes: Grade changes, including adding fill, are not permitted within the TPZ without special written authorization and under the supervision of a Certified Arborist or as provided by the approved landscape plan. Lowering the grade within this area will necessitate cutting main support and feeder roots, jeopardizing the health and structural integrity of the tree(s). Adding soil, even temporarily, on top of the existing grade will compact the soil further, and decrease both water and air availability to the trees' roots.

Moving Construction Materials: Care will be taken when moving equipment or supplies near the trees, especially overhead. Avoid damaging the tree(s) when transporting or moving construction materials and working around the tree (even outside of the fenced tree protection zone). Above ground tree parts that could be damaged (e.g., low limbs, trunks) should be flagged with red ribbon. If contact with the tree crown is unavoidable, prune the conflicting branch(es) using International Society of Arboriculture (ISA) standards.

Root Pruning: Except where specifically approved in writing or as provided in Attachment 3, all trenching should be outside of the fenced protection zone. Roots primarily extend in a horizontal direction forming a support base to the tree similar to the base of a wineglass. Where trenching is necessary in areas that contain tree roots, prune the roots using a Dosko root pruner or equivalent. All cuts should be clean and sharp, to minimize ripping, tearing, and fracturing of the root system. The trench should be made no deeper than necessary.

Irrigation: Trees that have been substantially root pruned (30% or more of their root zone) will require irrigation for the first 12 months. The first irrigation should be within 48 hours of root pruning. They should be deep watered every 2 to 4 weeks during the summer and once a month during the winter (adjust accordingly with rainfall). One irrigation cycle should thoroughly soak the root zones of the trees to a depth of 3 feet. The soil should dry out between watering; avoid keeping a consistently wet soil. Designate one person to be responsible for irrigating (deep watering) the trees. Check soil moisture with a soil probe before irrigating. Irrigation is best accomplished by installing a temporary above ground micro-spray system that will distribute water slowly (to avoid runoff) and evenly throughout the fenced protection zone ***but never soaking the area located within 6 feet of the tree trunk, especially during warmer months***.

Pruning: Do not prune any of the trees until all construction is completed. This will help protect the tree canopies from damage. All pruning should be completed under the direction of an ISA Certified Arborist and using ISA guidelines. Only dead wood should be removed from tree canopies.

Washing: During construction in summer and autumn months, wash foliage of trees adjacent to the construction sites with a strong water stream every two weeks in early hours before 10:00 a.m. to control mite and insect populations.

Inspection: An ISA Certified Arborist should inspect the impacted preserved trees on a monthly basis during construction. A report comparing tree health and condition to the original, pre-construction baseline should be submitted following each inspection. Photographs of representative trees are to be included in the report on a minimum annual basis.

Maintenance After Construction

Once construction is complete the fencing may be removed and the following measures performed to sustain and enhance the vigor of the preserved trees.

Mulch: Provide a 4-inch mulch layer under the canopy of trees. Mulch should include clean, organic mulch that will provide long-term soil conditioning, soil moisture retention, and soil temperature control.

Pruning: The trees will not require regular pruning. Pruning should *only* be done to maintain clearance and remove broken, dead or diseased branches. Pruning should only take place following a recommendation by an ISA Certified Arborist and performed under the supervision of an ISA Certified Arborist. No more than 20% of the canopy should be removed at any one time. All pruning should conform to ISA standards.

Watering: The natural trees that are not disturbed should not require regular irrigation, other than the 12 months following substantial root pruning. However, soil probing will be necessary to accurately monitor moisture levels. Especially in years with low winter rainfall, supplemental irrigation for the trees that sustained root pruning and any newly planted trees may be necessary. The trees should be irrigated *only* during the winter and spring months.

Watering Adjacent Plant Material: All plants near the trees should be compatible with water requirements of said trees. The surrounding plants should be watered infrequently with deep soaks and allowed to dry out in-between, rather than frequent light irrigation. The soil should not be allowed to become saturated or stay continually wet. Irrigation spray should not hit the trunk of any tree. A 60-inch dry-zone should be maintained around all tree trunks. An aboveground micro-spray irrigation system is recommended over typical underground pop-up sprays.

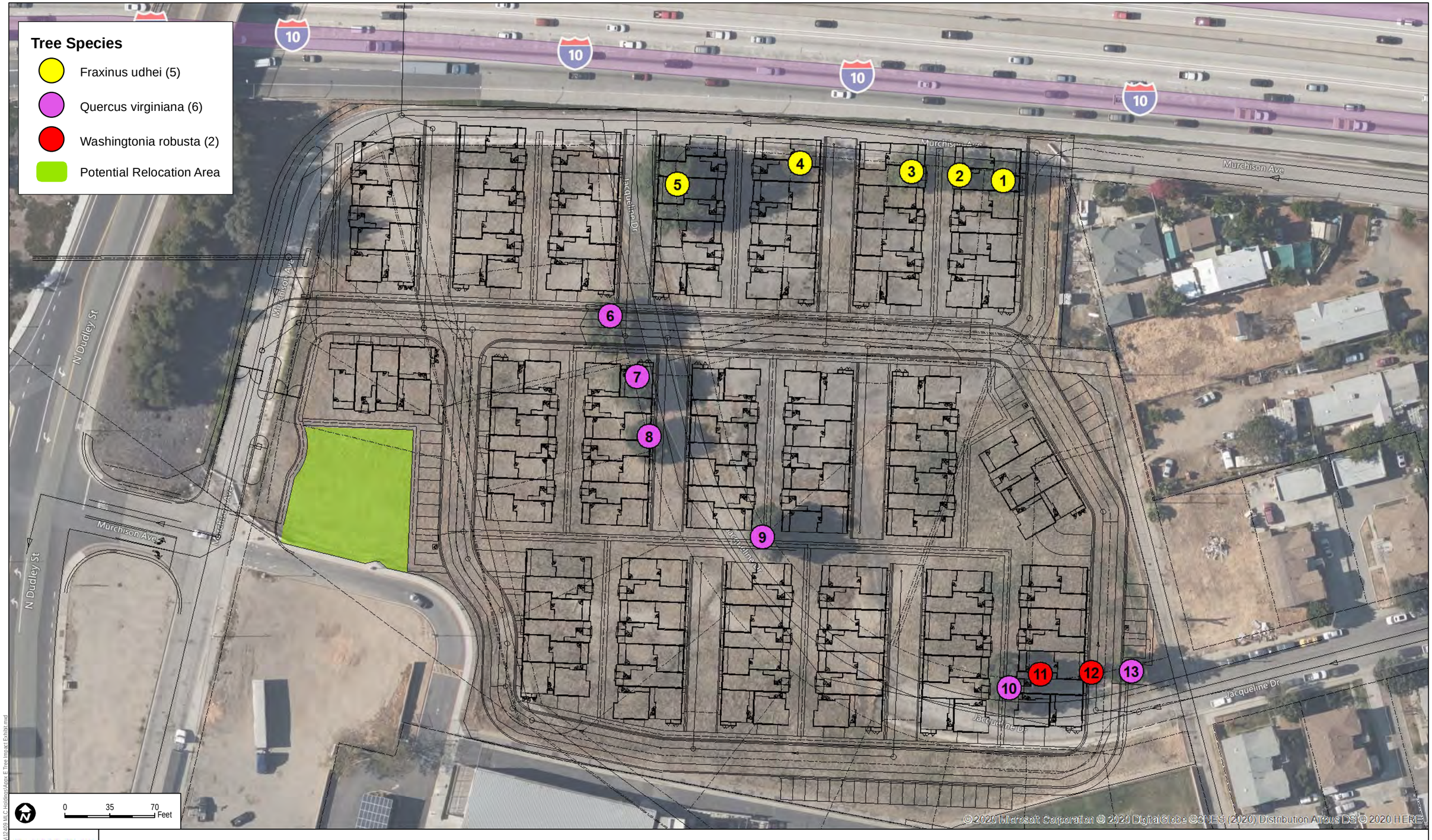
Washing: Periodic washing of the foliage is recommended during construction but no more than once every 2 weeks. Washing should include the upper and lower leaf surfaces and the tree bark. This should continue beyond the construction period at a less frequent rate with a high-powered hose only in the early morning hours. Washing will help control dirt/dust buildup that can lead to mite and insect infestations.

Spraying: If the trees are maintained in a healthy state, regular spraying for insect or disease control should not be necessary. If a problem does develop, an ISA Certified Arborist should be consulted; the trees may require application of insecticides to prevent the intrusion of bark-boring beetles and other invading pests. All chemical spraying should be performed by a licensed applicator under the direction of a licensed pest control advisor.

Inspection: All trees that were impacted during construction within the TPZ should be monitored by an ISA Certified Arborist for the first 5 years after construction completion. The Arborist should submit an annual report, photograph each tree and compare tree health and condition to the original, pre-construction baseline.

Appendix E

Tree Impact Exhibit



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Appendix E - Tree Impact Exhibit

Jacqueline Dr & Murchison Ave, Pomona, CA

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38 NORTH MARENGO AVENUE
PASADENA, CALIFORNIA 91101
T 626.204.9800 F 626.204.9834

MEMORANDUM

To:	Matt Maehara – MLC Holdings, Inc.
From:	Ryan Allen, ISA Certified Arborist WE-10316A –Dudek
Subject:	*Preservation of Trees, Protected Tree Report Jaqueline Dr. and Murchison Ave., City of Pomona, CA.*
Date:	June 24, 2020

1 Introduction

This memorandum provides Dudek's understanding of the potential for tree preservation and relocation of protected oak trees for the proposed Jaqueline Dr. and Murchison Ave. development project. The potential for tree preservation and relocation is based on the proposed site plans, and site evaluation conducted on December 13, 2019.

2 Tree Relocation

Tree nos. 6 and 7 of the arborist report are southern live oak (*Quercus virginiana)* trees with diameters at standard height (DSH) of 22" and 24", and crown spreads of 35' and 40' respectively. The two trees are considered to be in good health with fair structural condition. The arborist report indicates that these two trees are viable candidates to be relocated. Further explanation was provided to the City on March 18, 2020 of the potential for the trees to fail if they are relocated. There is no guarantee that a tree will successfully transplant, and the risk for failure increases as trees grow larger. Tree nos. 6 and 7 are of a size that presents a high risk for failure, based on the significant loss of root volume during the transplant process. In addition, relocating mature trees would require structural support that increases the potential for failure, and additional risk to the community. Southern live oak trees are not native to Southern California, and are not considered a significant cultural resource.

3 Tree Preservation

Tree no. 13 of the arborist report is a southern live oak with a dsh of 16", measures 30' across at its widest points, and has fair health and fair structure. Based on the proposed site plans, significant construction related impacts will occur within the tree's critical root zone. As such, the tree will require removal. Currently, a drainage line is planned to be installed directly underneath the trunk of the tree. Trenching and construction activities can not occur without tree removal. In addition, the tree would experience significant grading changes and increased levels of soil compaction within the critical root zone that would negatively impact the tree's health and stability.. These impacts include a planned private street and fire lane on the west side of the tree, parking lot on the north side of the tree, and sidewalk on the south side of the tree.

3 Conclusion

Based on the size of tree nos. 6 and 7, relocation presents an increased potential for tree failure, and decreased chance of successful reestablishment. While the physical relocation of these trees is possible, it may not be a practical endeavor based on the associated risks. In addition, due to the current proposed site plans, and the trenching and grading that would occur within the critical root zone, Tree no. 13 cannot be preserved without significant impacts to the trees health and structural stability. Tree no. 13 is not possible to preserve based on the current proposed site plans, and the trenching and grading that would occur within the critical root zone.

If you have any questions regarding this memorandum, please contact Ryan Allen at 626.658.0070, or

rallen@dudek.com

Sincerely,

Ryan Allen
Urban Forestry Specialist, Dudek
ISA-Certified Arborist WE - 10316A
ISA Qualified Tree Risk Assessor

Protected Tree Report
Jaqueline Dr. and Murchison Ave.
City of Pomona, California

Prepared for:

MLC Holdings Inc.
5 Peters Canyon Road Suite 310
Irvine, California 92606
Contact: Matt Maehara

Prepared by:

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38 N. Marengo Ave.
Pasadena, California 91101
Contact: Ryan Allen, ISA Certified Arborist WE-10316A, 626.658.0070

MARCH 2020

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
DBH	diameter at breast height
EDM	electronic distance measuring
ISA	International Society of Arboriculture

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1 Introduction

This protected tree report provides an inventory and evaluation of the trees located at the intersection of Jaquelin Drive and Murchison Avenue in the City of Pomona (City) off the 10 Freeway (Assessor's Parcel Numbers 8358-035-908, -909, -910, -911, -912, -913, -914, -915, -917, -918, -922, -923, -925, -926, -928, -929, -935, -936, -937, -938, -939, -941). The proposed Project Site is located on privately owned land within the City of Pomona, California (Figure 1, Regional Map). As such, this tree report covers the regulations and requirements for the protection and removal of protected trees within the City's jurisdiction.

To ensure the protection of, and to further regulate the removal of, protected trees, a tree inventory and assessment of the Project Site was performed pursuant to the City municipal code Section.5809-23. - Oak tree preservation Program. This Section applies to the project site in that:

- The Project Site consists of oak trees with a diameter of eight (8) inches or greater as measured 4.5 feet above the mean natural grade.
- All oak trees on-site are outside of designated historic districts and historic landmarks.
- No tree is designated as a specimen tree.

In addition to evaluating City protected trees, Dudek inventoried all non-protected trees measuring 8 inches in trunk diameter or greater.

Dudek was retained by MLC Holdings Inc. to conduct a tree inventory and assessment of the Project Site. Dudek's Urban and Community Forestry Division's International Society of Arboriculture (ISA) Certified Arborists, performed various functions associated with surveying, inventorying, and evaluating the condition of selected trees on the Project Site, as described in this report.

The purpose of this report is to present the physical characteristics, mapped locations, and disposition of the trees on the Project Site.

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2 Project Location and Description

The Project Site is generally bounded by a residential neighborhood on the east, Interstate 10 to the north, Dudley Street to the west, and Cortez Elementary to the south (Figure 1 and Figure 2, Vicinity Map). This tree assessment addresses the Project Site, where development activity is proposed.

2.1 Existing Conditions

The Project Site is approximately 7.69 acres of open space, including trees and shrubs, associated with an undeveloped parcel in an urban area. The trees and shrubs are located in selected groupings and are dispersed throughout the property (see Appendix A, Photograph Log).

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SOURCE: Esri

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FIGURE 1

Regional Map

Protected Tree Report for Jacueline Dr & Murchison Ave

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SOURCE: USGS 7.5' Poway, CA Quadrangle

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Figure 2

Vicinity Map

Protected Tree Report for Jacquelin Dr & Murchison Ave

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3 Methods

Dudek mapped tree locations using a Trimble Pathfinder Pro XH GPS receiver. The Pathfinder has a horizontal accuracy of 1 meter (1-sigma) using differential code positioning techniques. Since tree canopies can sometimes cause loss of satellite lock by blocking the line-of-sight to satellites, an electronic compass and reflectorless electronic distance measuring (EDM) device was also used in mapping tree locations. The EDM/compass combination operates in concert with the Pathfinder GPS system to position offsets, and offset information is automatically attached to the GPS position data string. The electronic tree locations were then evaluated using ArcView 10.4 software to determine the position of the trees related to the Project Site.

The trees throughout the Project Site were mapped and given a unique identification number; these numbers correspond to the tree locations presented in Appendix B, Tree Location Exhibit, and Appendix C, Tree Information Matrix. Tree diameter was measured using a diameter tape providing adjusted figures for diameter measurements when wrapping the tape around an object's circumference. Diameter measurements were taken using protocol provided in the Guide for Plant Appraisal, published by the ISA (Council of Tree and Landscape Appraisers 2000). The diameter at breast height (DBH) of each tree was taken at a circumference at 4.5 feet above the ground along the trunk axis, with common exceptions. In cases where a tree's trunk was located on a slope, the 4.5-foot distance was approximated as the average of the shortest and longest sides of the trunk (i.e., the uphill side and downhill side of a tree's trunk, respectively) and the measurement was made at the circumference of the trunk at this point. Tree height was visually estimated. Tree canopy diameters were typically estimated by "pacing-off" the measurement based on the investigator's knowledge of his stride length or by visually estimating the canopy width. The diameter measurements were always made along an imaginary line intersecting the tree trunk that best approximated the average canopy diameter.

Pursuant to the Guide for Plant Appraisal, tree health and structure was evaluated with respect to five distinct tree components: roots, trunk, scaffold branches, small branches, and foliage. Each component of the tree was assessed with regard to health factors such as insect, fungal, or pathogen damage; mechanical damage; presence of decay; presence of wilted or dead leaves; and wound closure. Components were graded as good, fair, poor, and dead, with 'good' representing no apparent problems, and 'dead' representing a dying and/or dead tree. Concurrent with tree health and structural evaluations, each tree was evaluated for its relocation potential. Trees for relocation were noted, if applicable, where tree and site conditions were favorable.

3.1 Scope of Work Limitations

No root crown excavations or investigations or internal probing were performed during the tree assessments. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation or relocation in an urban setting be thoroughly inspected for internal, or subterranean, decay by a qualified arborist before finalizing preservation or relocation plans.

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4 Results

4.1 Protected Tree Summary

There are six protected trees located within the limits of the proposed Project Site. Table 1 reflects the species and DBH of each tree, with additional characteristics listed in Appendix C.

Table 1. Summary of Protected Tree Species

Tree Species				
Tree Nos.	Scientific Name	Common Name	Number of Stems	Total DBH
6	*Quercus virginiana*	Southern live oak	1	22
7	*Quercus virginiana*	Southern live oak	1	24
8	*Quercus virginiana*	Southern live oak	13	68
9	*Quercus virginiana*	Southern live oak	1	26
10	*Quercus virginiana*	Southern live oak	1	32
13	*Quercus virginiana*	Southern live oak	1	16

Notes: DBH = diameter at breast height.

The six protected trees are scattered throughout the Project Site. Five of the trees are single-stemmed and have tree diameters at 4.5 feet DBH that range from 16 to 32 inches. One of the trees is multi-stemmed and has a cumulative tree diameter of 68 inches. Average tree heights range from 35 to 60 feet tall and crown widths extend 30 to 40 feet at their widest points.

Good condition trees exhibit acceptable vigor, healthy foliage, adequate structure, and lack of any major maladies. Fair condition trees are typical, with few maladies, but declining vigor. The health and structure of each tree was recorded and reflected in Table 2.

Table 2. Summary of Protected Tree Species Health and Structure

Tree Species				
Tree Nos.	*Scientific Name*	*Common Name*	*Health*	*Structure*
6	*Quercus virginiana*	Southern live oak	good	fair
7	*Quercus virginiana*	Southern live oak	good	fair
8	*Quercus virginiana*	Southern live oak	good	poor
9	*Quercus virginiana*	Southern live oak	fair	fair
10	*Quercus virginiana*	Southern live oak	good	fair
13	*Quercus virginiana*	Southern live oak	fair	fair

To accommodate the proposed development, all six of the protected trees would require removal.

4.2 Ornamental Tree Summary

Seven trees on the Project Site do not meet the definition of a protected tree, and are noted in Table 3.

Table 3. Summary of Ornamental Tree Species

Tree Species				
Tree Nos.	Scientific Name	Common Name	Number of Stems	Total DBH
1	*Fraxinus uhdei*	Shamel ash	15	52
2	*Fraxinus uhdei*	Shamel ash	22	88
3	*Fraxinus uhdei*	Shamel ash	10	57
4	*Fraxinus uhdei*	Shamel ash	17	61
5	*Fraxinus uhdei*	Shamel ash	1	36
11	*Washingtonia robusta*	Mexican fan palm	1	20
12	*Washingtonia robusta*	Mexican fan palm	3	60

4.3 Mapping

The location of each tree identified in the Project Site is depicted in Appendix B.

4.4 Tree Removal/Encroachment

The analysis of affected trees presented below is based on the proposed Project footprint. For the purposes of this report, tree removal is conservatively considered necessary when the trunk is located inside or within 2 feet of the proposed limits of development. Encroachment is expected when soil and roots are disturbed within the tree-protected zone (canopy drip line plus 5 feet or 15 feet from trunk, whichever is greater). Typically, specific circumstances allow some protected trees that are being encroached upon to be preserved in place within or adjacent to the development area. Table 2 summarizes the total number of protected trees by species that have potential to be subject to direct construction-related impacts.

In total, six trees will require removal based on the disturbance analysis conducted for this report. Individual tree locations and dispositions are provided in Appendix B and Appendix C, respectively.

4.5 Candidates Suitable for Preservation and Relocation

In addition to the general site tree evaluations, Dudek evaluated all of the potentially disturbed protected trees for their potential for preservation in place or relocation. Trees identified as candidates for preservation in place and relocation typically exhibit good health (new growth and vigor) and structure (trunk/branching); have no uncorrectable, outwardly detectable defects; and show no signs or symptoms of serious pest infestation or species-specific pathogens. In order for the trees to avoid incidental damage during construction or relocation, preservation and protection measures must be provided before, during, and following the construction phase.

Based on tree health, structure, observable defects, and tree location, two trees—tree nos. 6 and 7—are considered potential candidates for relocation. However, it should be noted that tree relocation is not required by the City. Individual tree locations and dispositions are provided in Appendix B and Appendix C, respectively.

4.6 Mapping

The location of each tree identified in the Project Site is depicted in Appendix B.

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5 Mitigation

The City does not define mitigation requirements for the removal and replacement of protected trees. As such, to mitigate for the removal of six protected trees, Dudek recommends the following mitigation plan.

5.1 Mitigation Plan

To offset the impacts associated the removal of six protected trees, Dudek recommends that MLC Holdings Inc. replace the trees at a minimum ratio of 2:1. Specifically, Dudek recommends that 12 24-inch box trees be incorporated into the proposed Project's landscape plan. Furthermore, Dudek recommends that the replacement trees be a non-invasive, drought tolerant/resistant species that are suitable for the site conditions, and meet any spacing restrictions.

In addition to replacement at a 2:1 ratio, Dudek recommends all tree plantings be subject to a 3-year monitoring effort by an independent third-party certified arborist. This monitoring effort would consider growth, health, and condition of the subject trees in order to evaluate the mitigation plan's success. The monitoring effort may result in a recommendation of remedial actions should any of the tree plantings exhibit poor or declining health.

The specific location of individual mitigation tree plantings on site should be addressed in a mitigation planting plan or landscape design plan prepared for the Project Site. Dudek estimates that all of the required mitigation trees can be accommodated within the proposed Project landscape areas. The recommended replacement mitigation ratio is at the discretion of the City and subject to final tree impact analysis. As such, the final tree numbers associated with tree replacement and other mitigation components may vary from that presented in this tree report.

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6 Tree Protection

All six protected trees located on the Project Site would be removed. As such, tree protection is not required and/or recommended. However, should tree preservation be selected, Dudek recommends that any preserved trees be protected according to the Tree Protection Measures discussed in Appendix D.

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7 Conclusion

The Project Site includes six trees meeting the City's definition of a protected tree. To offset the impacts associated with the removal of six protected trees, Dudek recommends that that MLC Holdings Inc. replace the trees at a minimum ratio of 2:1 with 12 24-inch box non-invasive, drought tolerant/resistant species that are suitable for the site conditions, and meet any spacing restrictions. The recommended replacement mitigation ratio is at the discretion of the City and subject to final tree impact analysis. As such, the final tree numbers associated with tree replacement and other mitigation components may vary from that presented in this protected tree report. Should MLC Holdings Inc. choose to re-incorporate mature trees into the post-construction landscape, two trees—tree nos. 6 and 7—are considered viable candidates for relocation. However, as previously stated, relocation is not a City requirement. Actual tree impact or encroachment numbers may be lower than anticipated and presented in this report once grading plans are staked in the field and are being implemented. Any adjustments to the number of impacted trees would be documented by the Project's arborist.

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8 Arborist's Disclosure

This report provides conclusions and recommendations based only on a visual examination of the trees and surrounding site by an ISA Certified Arborist and reasonable reliance upon the completeness and accuracy of the information provided to the arborist. The examination did not include subterranean or internal examination of the trees.

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Although trees provide many benefits to those who live near them, they also include inherent risks from breakage or failure that can be minimized, but not eliminated.

Arborists cannot detect every condition that could possibly lead to the failure of a tree. Trees are living organisms subject to attack by disease, insects, fungi, weather, and other forces of nature, and conditions that lead to failure are often hidden within trees and below ground. There are some inherent risks with trees that cannot be predicted with any degree of certainty, even by a skilled and experienced arborist. Arborists cannot predict acts of nature including, without limitation, storms of sufficient strength, which can cause even an apparently healthy tree to fail. Additionally, arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for any specific period of time. A tree's condition could change over a short or long period of time due to climatic, cultural, or environmental conditions. Further, there is no guarantee or certainty that recommendations or efforts to correct unsafe conditions will prevent future breakage or failure of a tree.

To live or work near trees is to accept some degree of risk. Neither the author of this report nor Dudek have assumed any responsibility for, nor will either of them be liable for, any claims, losses or damages for damage to any tree, death or injury to any person, or any loss of or damage to any personal or real property.

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9 References

Council of Tree and Landscape Appraisers. 2000. *Guide for Plant Appraisal*, 9th Ed. Champaign, Illinois: International Society of Arboriculture.

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Appendix A

Photograph Log

Protected Tree Report – Jaqueline Dr. and Murchison Ave.
Photograph Log



Photo #1. View facing north of tree nos. 1,2,3



Photo #2. View facing north of tree no. 4.

Photographs were taken on December 13, 2019

Protected Tree Report – Jaqueline Dr. and Murchison Ave.
Photograph Log



Photo #3. View facing northwest of tree no. 5.

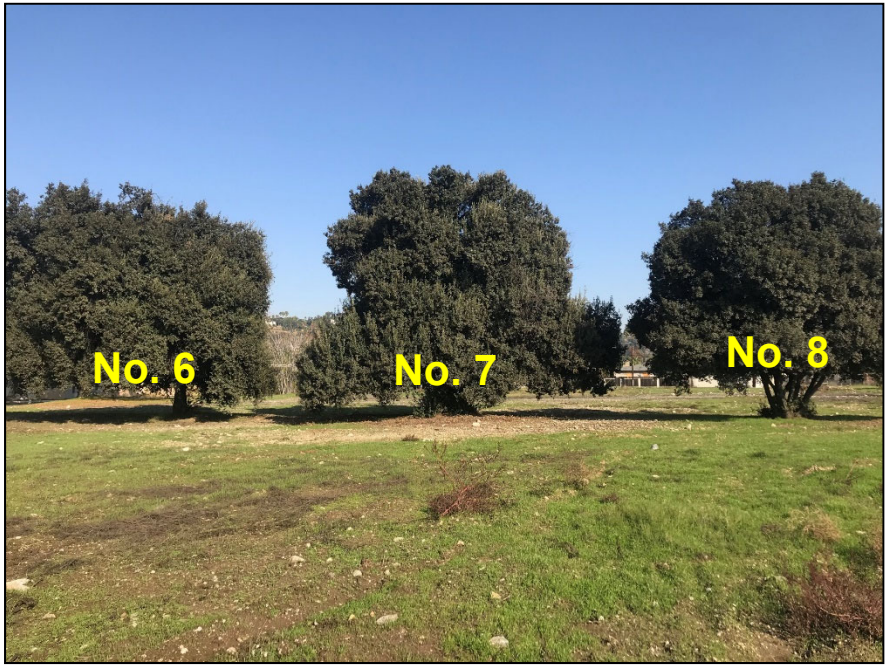

Photo #4. View facing east of tree nos. 6,7,8

Photographs were taken on December 13, 2019

Protected Tree Report – Jaqueline Dr. and Murchison Ave.
Photograph Log



Photo #5. View facing east of tree no 9.



Photo #6. View facing east of tree no 10.

Photographs were taken on December 13, 2019

Protected Tree Report – Jaqueline Dr. and Murchison Ave.
Photograph Log

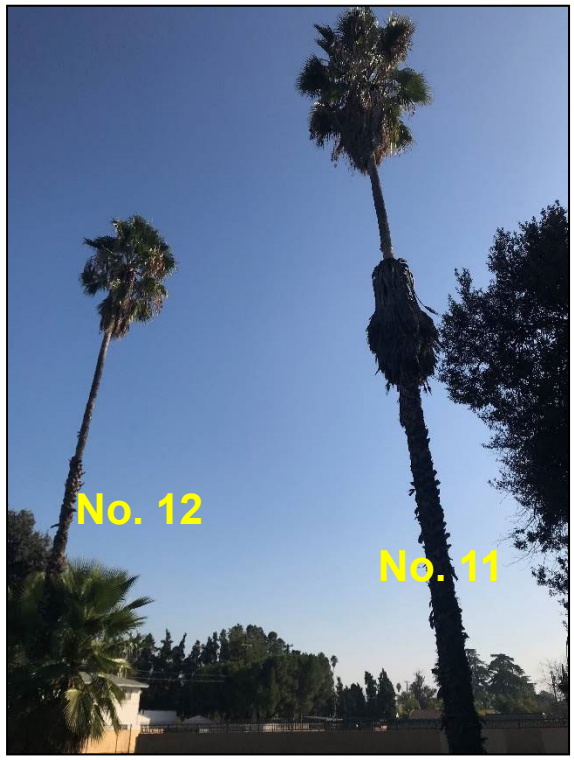

Photo #7. View facing south of tree nos. 11 and 12.



Photo #8. View facing east of tree no. 13

Photographs were taken on December 13, 2019

Protected Tree Report – Jaqueline Dr. and Murchison Ave.
Photograph Log



Photo #9. Representative photograph of site facing north.

Photographs were taken on December 13, 2019

Appendix B

Tree Location Exhibit



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Appendix B - Tree Location Exhibit

Protected Tree Report for Jacqueline Dr & Murchison Ave

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Appendix C

Tree Information Matrix

Appendix C - Tree Information Matrix

Sunwest Project														
Tree No.	Botanical Name	Common Name	Number of Stems	Individual Stems		Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Impact Status	Latitude	Longitude	Protected Status (Y/N)
				S1	S2									
1	*Fraxinus udhei*	shamel ash	15	6	6	25	25	fair	very poor	stems total 52" DBH	Removal	-117.77631	34.072458	Yes
2	*Fraxinus udhei*	shamel ash	22	5	5	25	25	fair	very poor	stems total 88" DBH	Removal	-117.77643	34.072469	Yes
3	*Fraxinus udhei*	shamel ash	10	6	6	25	25	poor	very poor	stems total 57" DBH	Removal	-117.77655	34.072478	Yes
4	*Fraxinus udhei*	shamel ash	17	4	4	20	20	poor	very poor	stems total 61" DBH	Removal	-117.77684	34.0724955	Yes
5	*Fraxinus udhei*	shamel ash	1	36		50	60	fair	fair		Removal	-117.77715	34.0724514	Yes
6	*Quercus virginiana*	southern live oak	1	22		35	40	good	fair		Removal	-117.77732	34.0721702	Yes
7	*Quercus virginiana*	southern live oak	1	24		35	35	good	fair		Removal	-117.77726	34.0720398	Yes
8	*Quercus virginiana*	southern live oak	13	6	6	30	30	good	poor	stems total 68" DBH	Removal	-117.77723	34.0719114	Yes
9	*Quercus virginiana*	southern live oak	1	26		50	35	fair	fair	broken limb in crown	Removal	-117.77693	34.0716955	Yes
10	*Quercus virginiana*	southern live oak	1	32		40	40	good	fair		Removal	-117.7763	34.0713716	Yes
11	*Washingtonia robusta*	Mexican fan palm	1	20		60	12	good	good		Removal	-117.77622	34.0714015	Yes
12	*Washingtonia robusta*	Mexican fan palm	3	20	20	60	12	good	good	additional stem of 20" dbh	Removal	-117.77609	34.071404	Yes
13	*Quercus virginiana*	southern live oak	1	16		40	30	fair	fair		Removal	-117.77599	34.0714062	Yes

Appendix D

Tree Protection Measures

Appendix D – Tree Protection Measures

The following sections are included as general guidelines for tree protection from construction impacts. The measures presented should be monitored by arborists and enforced by contractors and developers for maximum benefit to the trees.

Tree Protection Measures Prior to Construction

Fencing: All remaining trees that will not be relocated or removed should be preserved and protected in place. Trees within approximately 15 feet of proposed construction activity should be temporarily fenced with chain link or other material satisfactory to City planning staff throughout grading and construction activities. The fencing should be installed 3 feet outside of the dripline of each tree (or edge of canopy for cluster of trees), be 4 feet tall, and staked every 6 feet. The fenced area should be considered the tree protection zone (TPZ) unless proximate construction required temporary removal.

Pre-Construction Meeting: A pre-construction meeting should be held between all contractors (including grading, tree removal/pruning, builders, etc.) and the arborist. The arborist will instruct the contractors on tree protection practices and answer any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, should provide written acknowledgement of their receiving tree protection training. This training should include information on the location and marking of protected trees, the necessity of preventing damage, and the discussion of work practices that will accomplish such.

Protection and Maintenance During Construction

Once construction activities have begun the following measures should be adhered to:

Equipment Operation and Storage: Avoid heavy equipment operation around the trees. Operating heavy machinery around the root zones of trees will increase soil compaction, which decreases soil aeration and subsequently reduces water penetration in the soil. All heavy equipment and vehicles should, at minimum, stay out of the fenced TPZ, unless where specifically approved in writing and under the supervision of a Certified Arborist or as provided by the approved landscape plan.

Storage and Disposal: Do not store or discard any supply or material, including paint, lumber, concrete overflow, etc. within the protection zone. Remove all foreign debris within the protection zone; it is important to leave the duff, mulch, chips, and leaves around the retained trees for water retention and nutrients. Avoid draining or leakage of equipment fluids near retained trees. Fluids such as gasoline, diesel, oils, hydraulics, brake and transmission fluids, paint, paint thinners, and glycol (anti-freeze) should be disposed of properly. Keep equipment parked at least 50 feet away from retained trees to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the retained trees could lead to decline and death.

Grade Changes: Grade changes, including adding fill, are not permitted within the TPZ without special written authorization and under the supervision of a Certified Arborist or as provided by the approved landscape plan. Lowering the grade within this area will necessitate cutting main support and feeder roots, jeopardizing the health and structural integrity of the tree(s). Adding soil, even temporarily, on top of the existing grade will compact the soil further, and decrease both water and air availability to the trees' roots.

Moving Construction Materials: Care will be taken when moving equipment or supplies near the trees, especially overhead. Avoid damaging the tree(s) when transporting or moving construction materials and working around the tree (even outside of the fenced tree protection zone). Above ground tree parts that could be damaged (e.g., low limbs, trunks) should be flagged with red ribbon. If contact with the tree crown is unavoidable, prune the conflicting branch(es) using International Society of Arboriculture (ISA) standards.

Root Pruning: Except where specifically approved in writing or as provided in Attachment 3, all trenching should be outside of the fenced protection zone. Roots primarily extend in a horizontal direction forming a support base to the tree similar to the base of a wineglass. Where trenching is necessary in areas that contain tree roots, prune the roots using a Dosko root pruner or equivalent. All cuts should be clean and sharp, to minimize ripping, tearing, and fracturing of the root system. The trench should be made no deeper than necessary.

Irrigation: Trees that have been substantially root pruned (30% or more of their root zone) will require irrigation for the first 12 months. The first irrigation should be within 48 hours of root pruning. They should be deep watered every 2 to 4 weeks during the summer and once a month during the winter (adjust accordingly with rainfall). One irrigation cycle should thoroughly soak the root zones of the trees to a depth of 3 feet. The soil should dry out between watering; avoid keeping a consistently wet soil. Designate one person to be responsible for irrigating (deep watering) the trees. Check soil moisture with a soil probe before irrigating. Irrigation is best accomplished by installing a temporary above ground micro-spray system that will distribute water slowly (to avoid runoff) and evenly throughout the fenced protection zone ***but never soaking the area located within 6 feet of the tree trunk, especially during warmer months***.

Pruning: Do not prune any of the trees until all construction is completed. This will help protect the tree canopies from damage. All pruning should be completed under the direction of an ISA Certified Arborist and using ISA guidelines. Only dead wood should be removed from tree canopies.

Washing: During construction in summer and autumn months, wash foliage of trees adjacent to the construction sites with a strong water stream every two weeks in early hours before 10:00 a.m. to control mite and insect populations.

Inspection: An ISA Certified Arborist should inspect the impacted preserved trees on a monthly basis during construction. A report comparing tree health and condition to the original, pre-construction baseline should be submitted following each inspection. Photographs of representative trees are to be included in the report on a minimum annual basis.

Maintenance After Construction

Once construction is complete the fencing may be removed and the following measures performed to sustain and enhance the vigor of the preserved trees.

Mulch: Provide a 4-inch mulch layer under the canopy of trees. Mulch should include clean, organic mulch that will provide long-term soil conditioning, soil moisture retention, and soil temperature control.

Pruning: The trees will not require regular pruning. Pruning should *only* be done to maintain clearance and remove broken, dead or diseased branches. Pruning should only take place following a recommendation by an ISA Certified Arborist and performed under the supervision of an ISA Certified Arborist. No more than 20% of the canopy should be removed at any one time. All pruning should conform to ISA standards.

Watering: The natural trees that are not disturbed should not require regular irrigation, other than the 12 months following substantial root pruning. However, soil probing will be necessary to accurately monitor moisture levels. Especially in years with low winter rainfall, supplemental irrigation for the trees that sustained root pruning and any newly planted trees may be necessary. The trees should be irrigated *only* during the winter and spring months.

Watering Adjacent Plant Material: All plants near the trees should be compatible with water requirements of said trees. The surrounding plants should be watered infrequently with deep soaks and allowed to dry out in-between, rather than frequent light irrigation. The soil should not be allowed to become saturated or stay continually wet. Irrigation spray should not hit the trunk of any tree. A 60-inch dry-zone should be maintained around all tree trunks. An aboveground micro-spray irrigation system is recommended over typical underground pop-up sprays.

Washing: Periodic washing of the foliage is recommended during construction but no more than once every 2 weeks. Washing should include the upper and lower leaf surfaces and the tree bark. This should continue beyond the construction period at a less frequent rate with a high-powered hose only in the early morning hours. Washing will help control dirt/dust buildup that can lead to mite and insect infestations.

Spraying: If the trees are maintained in a healthy state, regular spraying for insect or disease control should not be necessary. If a problem does develop, an ISA Certified Arborist should be consulted; the trees may require application of insecticides to prevent the intrusion of bark-boring beetles and other invading pests. All chemical spraying should be performed by a licensed applicator under the direction of a licensed pest control advisor.

Inspection: All trees that were impacted during construction within the TPZ should be monitored by an ISA Certified Arborist for the first 5 years after construction completion. The Arborist should submit an annual report, photograph each tree and compare tree health and condition to the original, pre-construction baseline.

Appendix E

Tree Impact Exhibit



DUDEK

12409

Appendix E - Tree Impact Exhibit

Jacqueline Dr & Murchison Ave, Pomona, CA

Document Path: Z:\Forestry\12409 MLC Holdings\Maps\E-Tree Impact Exhibit.mxd

AIR QUALITY, ENERGY, AND GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

DUDLEY ST. MULTI-FAMILY RESIDENTIAL PROJECT

POMONA

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Air Basin	South Coast Air Basin
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
BSFC	Brake Specific Fuel Consumption
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
Cf_4	tetrafluoromethane
C_2F_6	hexafluoroethane
C_2H_6	ethane
CH_4	Methane
City	City of Pomona
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
ºF	Fahrenheit
FTIP	Federal Transportation Improvement Program
GHG	Greenhouse gas
GWP	Global warming potential
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons

IPCC	International Panel on Climate Change
kWhr	kilowatt-hour
LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
MATES	Multiple Air Toxics Exposure Study
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
MWh	Megawatt-hour
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
O_3	Ozone
OPR	Office of Planning and Research
Pb	Lead
Pfc	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion
PPT	Parts per trillion
RTIP	Regional Transportation Improvement Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SF_6	Sulfur Hexafluoride
SIP	State Implementation Plan
SO_x	Sulfur oxides
TAC	Toxic air contaminants
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile organic compounds

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Air Quality, Energy, and Greenhouse Gas (GHG) Emissions Impact Analysis has been completed to determine the air quality, energy, and GHG emissions impacts associated with the proposed Dudley Street Multi-Family Residential project (proposed project). The following is provided in this report:

- A description of the proposed project;
- A description of the atmospheric setting;
- A description of the criteria pollutants and GHGs;
- A description of the air quality regulatory framework;
- A description of the energy conservation regulatory framework;
- A description of the GHG emissions regulatory framework;
- A description of the air quality, energy, and GHG emissions thresholds including the California Environmental Quality Act (CEQA) significance thresholds;
- An analysis of the conformity of the proposed project with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP);
- An analysis of the short-term construction related and long-term operational air quality, energy, and GHG emissions impacts; and
- An analysis of the conformity of the proposed project with all applicable energy and GHG emissions reduction plans and policies.

1.2 Site Location and Study Area

The project site is located in the western portion of the City of Pomona (City) at 1440 Murchison Avenue. The approximately 7.47-acre project site is currently vacant and is bounded by Interstate 10 to the north, multi-family homes to the east, Cortez Magnet School and 7-Eleven to the south, and Dudley Street to the west. The project local study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are the multi-family homes located adjacent to the east side of the project site. The nearest school to the project site is Cortez Magnet School, which is located adjacent to the south side of the project site.

1.3 Proposed Project Description

The proposed project would consist of development of 152 multi-family three-story townhomes that are arraigned in five, seven and eight plexes. The townhomes range in size from 1,214 square feet to 1,822 square feet with a total building area of 235,128 square feet. Additionally, the proposed project would provide 344 total parking spaces (304 garage and 40 guest), and a common open space area that includes a pool and community building with a restroom and mail room. The proposed site plan is shown in Figure 2.

1.4 Executive Summary

Standard Air Quality, Energy, and GHG Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the SCAQMD and State of California (State).

South Coast Air Quality Management District Rules

The following lists the SCAQMD rules that are applicable, but not limited to the proposed project.

- Rule 402 Nuisance – Controls the emissions of odors and other air contaminants;
- Rule 403 Fugitive Dust – Controls the emissions of fugitive dust;
- Rules 1108 and 1108.1 Cutback and Emulsified Asphalt – Controls the VOC content in asphalt;
- Rule 1113 Architectural Coatings – Controls the VOC content in paints and solvents; and
- Rule 1143 Paint Thinners – Controls the VOC content in paint thinners.

State of California Rules

The following lists the State of California Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to the proposed project.

- CCR Title 13, Article 4.8, Chapter 9, Section 2449 – In use Off-Road Diesel Vehicles;
- CCR Title 13, Section 2025 – On-Road Diesel Truck Fleets;
- CCR Title 24 Part 6 – California Building Energy Standards; and
- CCR Title 24 Part 11 – California Green Building Standards.

Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines air quality, energy, and GHG emissions checklist questions.

Conflict with or obstruct implementation of the applicable air quality plan?

Less than significant impact.

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?

Less than significant impact.

Expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact.

Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than significant impact.

Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation;

Less than significant impact.

Conflict with or obstruct a state or local plan for renewable energy;

Less than significant impact.

Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

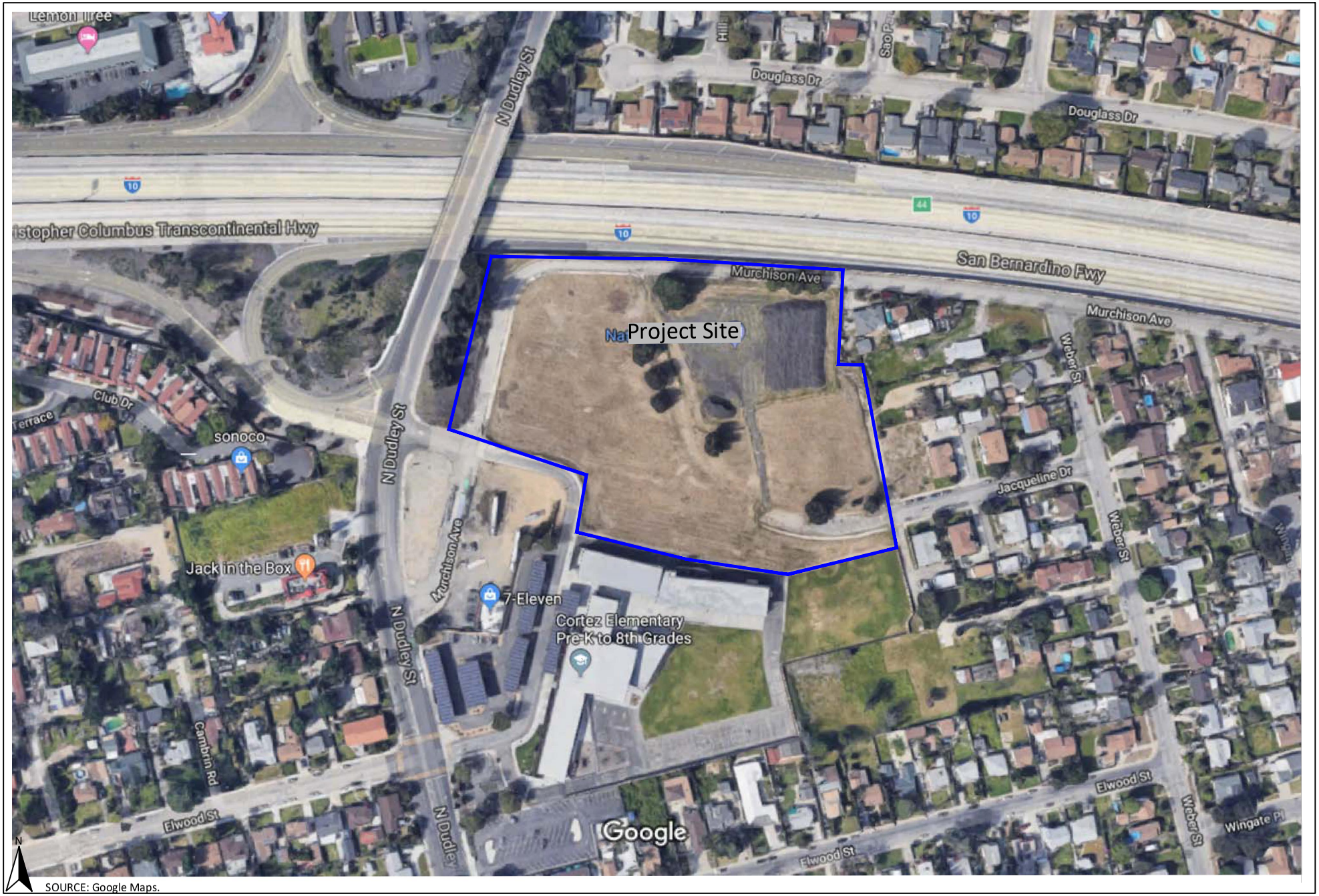
Less than significant impact.

Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Less than significant impact.

1.5 Mitigation Measures for the Proposed Project

This analysis found that implementation of the State and SCAQMD air quality, energy, and GHG emissions reductions regulations were adequate to limit criteria pollutants, toxic air contaminants, odors, and GHG emissions from the proposed project to less than significant levels. No mitigation measures are required for the proposed project with respect to air quality, energy, and GHG emissions.



SOURCE: Google Maps.

VISTA ENVIRONMENTAL

Figure 1
Project Local Study Area



SOURCE: Kevin L Cook Architect, Inc.

VISTA ENVIRONMENTAL

Figure 2
Proposed Site Plan

2.0 AIR POLLUTANTS

Air pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

2.1 Criteria Pollutants and Ozone Precursors

The criteria pollutants consist of: ozone, NO_x, CO, SO_x, lead (Pb), and particulate matter (PM). The ozone precursors consist of NO_x and VOC. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants and ozone precursors.

Nitrogen Oxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of NO_2 can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NO_x and the pollutants formed from NO_x can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone is not usually emitted directly into the air but in the vicinity of ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes approximately 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and

chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Oxides

Sulfur Oxide (SOx) gases are formed when fuel containing sulfur, such as coal and oil is burned, as well as from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

Particle matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) that are also known as *Respirable Particulate Matter* are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) that are also known as *Fine Particulate Matter* have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Volatile Organic Compounds

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

VOC is not classified as a criteria pollutant, since VOCs by themselves are not a known source of adverse health effects. The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered toxic air contaminants (TACs). There are no separate health standards for VOCs as a group.

2.2 Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. TACs is a term that is defined under the California Clean Air Act and consists of the same substances that are defined as Hazardous Air Pollutants (HAPs) in the Federal Clean Air Act. There are over 700 hundred different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is DPM. DPM is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led the CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by CARB and as a HAP by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. The nearest likely locations of naturally occurring asbestos, as identified in the *General Location Guide for Ultramafic Rocks in California*, prepared by the California Division of Mines and Geology, is located in Santa Barbara County. The nearest historic asbestos mine to the project site, as identified in the *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California,* prepared by U.S. Geological Survey, is located at Asbestos Mountain, which is approximately 80 miles east of the project site in the San Jacinto Mountains. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

3.0 GREENHOUSE GASES

3.1 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHGs), play a critical role in the Earth's radiation amount by trapping infrared radiation from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s, each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This

could result in an average global temperature rise of at least two degrees Celsius or 3.6 degrees Fahrenheit.

Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs)). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N_2O is also commonly used as an aerosol spray propellant (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and race cars).

Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6).

Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

Sulfur Hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

3.2 Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. The GHGs listed by the IPCC and the CEQA Guidelines are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. To simplify reporting and analysis, GHGs are commonly defined in terms of their GWP. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2e. As such, the GWP of CO_2 is equal to 1. The GWP values used in this analysis are based on the 2007 IPCC Fourth Assessment Report, which are used in CARB's 2014 Scoping Plan Update and the CalEEMod Model Version 2016.3.2 and are detailed in Table A. The IPCC has updated the Global Warming Potentials of some gases in their Fifth Assessment Report, however the new values have not yet been incorporated into the CalEEMod model that has been utilized in this analysis.

Table A – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs

Gas	Atmospheric Lifetime (years)[1]	Global Warming Potential (100 Year Horizon)[2]	Atmospheric Abundance
Carbon Dioxide (CO_2)	50-200	1	379 ppm
Methane (CH_4)	9-15	25	1,774 ppb
Nitrous Oxide (N_2O)	114	298	319 ppb
HFC-23	270	14,800	18 ppt
HFC-134a	14	1,430	35 ppt
HFC-152a	1.4	124	3.9 ppt
PFC: Tetrafluoromethane (CF_4)	50,000	7,390	74 ppt
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200	2.9 ppt
Sulfur Hexafluoride (SF_6)	3,200	22,800	5.6 ppt

Notes:

[1] Defined as the half-life of the gas.
[2] Compared to the same quantity of CO_2 emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEMod (Version 2016.3.2),that is used in this report (CalEEMod user guide: Appendix A).
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: IPCC 2007, EPA 2015

3.3 Greenhouse Gas Emissions Inventory

According to https://cdiac.ess-dive.lbl.gov/trends/emis/tre_glob_2014.html 9,855 million metric tons (MMT) of CO_2 equivalent (CO_2e) emissions were created globally in the year 2014. According to https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data the breakdown of global GHG emissions by sector consists of: 25 percent from electricity and heat production; 21 percent from industry; 24 percent from agriculture, forestry and other land use activities; 14 percent from transportation; 6 percent from building energy use; and 10 percent from all other sources of energy use.

According to *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2016,* prepared by EPA, in 2016 total U.S. GHG emissions were 6,511.3 million metric tons (MMT) of CO_2 equivalent (CO_2e) emissions. Total U.S. emissions have increased by 2.4 percent between 1990 and 2016 and GHG emissions decreased by 1.9 percent between 2015 and 2016. The recent decrease in GHG emissions was a result of multiple factors, including substitution from coal to natural gas in the electricity sector and from a warmer winter and a slow-down in the economy in 2016. However, according to https://rhg.com/research/preliminary-us-emissions-estimates-for-2018/ the preliminary estimates for 2018 show that GHG emissions have increased by 3.4 percent, which is primarily a result from a strong economy that required the use of more transportation fuels and power generation.

According to https://www.arb.ca.gov/cc/inventory/data/data.htm the State of California created 429.4 $MMTCO_2e$ in 2016. The breakdown of California GHG emissions by sector consists of: 41 percent from transportation; 23 percent from industrial; 16 percent from electricity generation; 8 percent from agriculture; 7 percent from residential buildings; 5 percent from commercial buildings; and 1 percent from other uses of energy. In 2016, GHG emissions were 12 $MMTCO_2e$ lower than 2015 levels, which represent a 6 percent year-over-year decline.

4.0 AIR QUALITY MANAGEMENT

The air quality at the project site is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

4.1 Federal – United States Environmental Protection Agency

The Clean Air Act, first passed in 1963 with major amendments in 1970, 1977 and 1990, is the overarching legislation covering regulation of air pollution in the United States. The Clean Air Act has established the mandate for requiring regulation of both mobile and stationary sources of air pollution at the state and federal level. The Environmental Protection Agency (EPA) was created in 1970 in order to consolidate research, monitoring, standard-setting and enforcement authority into a single agency.

The EPA is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. NAAQS pollutants were identified using medical evidence and are shown below in Table B.

Table B – State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm / 1-hour 0.07 ppm / 8-hour	0.070 ppm, / 8-hour	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm / 1-hour 9.0 ppm / 8-hour	35.0 ppm / 1-hour 9.0 ppm / 8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm / 1-hour 0.030 ppm / annual	100 ppb / 1-hour 0.053 ppm / annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm / 1-hour 0.04 ppm / 24-hour	75 ppb / 1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 µg/m^3 / 24-hour 20 µg/m^3 / annual	150 µg/m^3 / 24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in elderly.

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3 / 24-hour 12 µg/m^3 / annual	
Sulfates	25 µg/m^3 / 24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage.
Lead	1.5 µg/m^3 / 30-day	0.15 µg/m^3 /3-month rolling	(a) Learning disabilities; and (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf .

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP. The CARB defines attainment as the category given to an area with no violations in the past three years. As indicated below in Table C, the Air Basin has been designated by EPA for the national standards as a non-attainment area for ozone and PM2.5 and partial non-attainment for lead. Currently, the Air Basin is in attainment with the national ambient air quality standards for CO, PM10, SO_2, and NO_2.

Table C – South Coast Air Basin Attainment Status

Criteria Pollutant	Standard	Averaging Time	Designation	Attainment Date
1-Hour Ozone	NAAQS	1979 1-Hour (0.12 ppm)	Nonattainment (Extreme)	2/6/2023 (revised deadline)
	CAAQS	1-Hour (0.09 ppm)	Nonattainment	N/A
8-Hour Ozone	NAAQS	1997 8-Hour (0.08 ppm)	Nonattainment (Extreme)	6/15/2024
	NAAQS	2008 8-Hour (0.075 ppm)	Nonattainment (Extreme)	7/20/2032
	NAAQS	2015 8-Hour (0.070 ppm)	Nonattainment (Extreme)	8/3/2038
	CAAQS	8-Hour (0.070 ppm)	Nonattainment	Beyond 2032
CO	NAAQS	1-Hour (35 ppm) 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
	CAAQS	1-Hour (20 ppm) 8-Hour (9 ppm)	Attainment	6/11/2007 (attained)
NO_2	NAAQS	2010 1-Hour (0.10 ppm)	Unclassifiable/ Attainment	N/A (attained)

Criteria Pollutant	Standard	Averaging Time	Designation	Attainment Date
	NAAQS	1971 Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (attained)
	CAAQS	1-Hour (0.18 ppm) Annual (0.030 ppm)	Attainment	---
SO_2	NAAQS	1-Hour (75 ppb)	Designations Pending (expect Unclassifiable/ Attainment)	N/A (attained)
	NAAQS	24-Hour (0.14 ppm) Annual (0.03 ppm)	Unclassifiable/ Attainment	3/19/1979 (attained)
PM10	NAAQS	1987 24-hour (150 µg/m^3)	Attainment (Maintenance)	7/26/2013 (attained)
	CAAQS	24-hour (50 µg/m^3) Annual (20 µg/m^3)	Nonattainment	N/A
PM2.5	NAAQS	2006 24-Hour (35 µg/m^3)	Nonattainment (Serious)	12/31/2019
	NAAQS	1997 Annual (15.0 µg/m^3)	Attainment	8/24/2016
	NAAQS	2012 Annual (12.0 µg/m^3)	Nonattainment (Serious)	12/31/2025
	CAAQS	Annual (12.0 µg/m^3)	Nonattainment	N/A
Lead	NAAQS	3-Months Rolling (0.15 µg/m^3)	Nonattainment (Partial)	12/31/2015
Hydrogen Sulfide (H_2S)	CAAQS	1-Hour (0.03 ppm or 42 µg/m^3)	Attainment	---
Sulfates	CAAQS	24-Hour (25 µg/m^3)	Attainment	---
Vinyl Chloride	CAAQS	24-Hour (0.01 ppm or 26 µg/m^3)	Attainment	---

Source: SCAQMD (http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=14)

In 2015, one or more stations in the Air Basin exceeded the most current federal standards on a total of 146 days (40 percent of the year), including: 8-hour ozone (113 days over 2015 ozone NAAQS), 24-hour PM2.5 (30 days, including near-road sites; 25 days for ambient sites only), PM10 (2 days), and NO_2 (1 day). Despite substantial improvement in air quality over the past few decades, some air monitoring stations in the Air Basin still exceed the NAAQS for ozone more frequently than any other area in the United States. Seven of the top 10 stations in the nation most frequently exceeding the 2015 8-hour ozone NAAQS in 2015 were located within the Air Basin, including stations in San Bernardino, Riverside, and Los Angeles Counties (SCAQMD, 2016).

PM2.5 levels in the Air Basin have improved significantly in recent years. By 2013 and again in 2014 and 2015, there were no stations measuring PM2.5 in the Air Basin that violated the former 1997 annual PM2.5 NAAQS (15.0 µg/m^3) for the 3-year design value period. On July 25, 2016 the EPA finalized a determination that the Basin attained the 1997 annual (15.0 µg/m^3) and 24-hour PM2.5 (65 µg/m^3) NAAQS, effective August 24, 2016. Of the 17 federal PM2.5 monitors at ambient stations in the Air Basin for the 2013-2015 period, five stations had design values over the current 2012 annual PM2.5 NAAQS (12.0 µg/m^3), including: Mira Loma (Air Basin maximum at 14.1 µg/m^3), Rubidoux, Fontana, Ontario, Central Los Angeles, and Compton. For the 24-hour PM2.5 NAAQS (35.0 µg/m^3) there were 14 stations in the Air Basin in 2015 that had one or more daily exceedances of the standard, with a combined total of 25 days over that standard in the Air Basin. While it was previously anticipated that the Air Basin's 24-hour PM2.5 NAAQS would be attained by 2015, this did not occur based on the data for 2013 through

2015. The higher number of days exceeding the 24-hour PM2.5 NAAQS over what was expected is largely attributed to the severe drought conditions over this period that allowed for more stagnant conditions in the Air Basin with multi-day buildups of higher PM2.5 concentrations. This was caused by the lack of storm-related dispersion and rain-out of PM and its precursors (SCAQMD, 2016).

The Air Basin is currently in attainment for the federal standards for SO_2, CO, NO_2, and PM10. While the concentration level of the 1-hour NO_2 federal standard (100 ppb) was exceeded in the Air Basin for one day in 2015 (Long Beach- Hudson Station), the NAAQS NO_2 design value has not been exceeded. Therefore, the Air Basin remains in attainment of the NO_2 NAAQS (SCAQMD, 2016).

4.2 State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The CAAQS for criteria pollutants are shown above in Table B. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The Air Basin has been designated by the CARB as a non-attainment area for ozone, PM10 and PM2.5. Currently, the Air Basin is in attainment with the ambient air quality standards for CO, NO_2, SO_2, lead, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

The following lists the State of California Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to all warehouse projects in the State.

Assembly Bill 2588

The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release in California. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

CARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the California Air Resources Board (CARB) adopted California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 to reduce diesel particulate matter (DPM) and NOx emissions from in-use off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. Performance requirements of the rule are based on a fleet's average NOx emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirement making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less). Currently, no commercial operation in California may add any equipment to their fleet that has a Tier 0 or Tier 1 engine. By January 1, 2018

medium and large fleets will be restricted from adding Tier 2 engines to their fleets and by January 2023, no commercial operation will be allowed to add Tier 2 engines to their fleets. It should be noted that commercial fleets may continue to use their existing Tier 0 and 1 equipment, if they can demonstrate that the average emissions from their entire fleet emissions meet the NOx emissions targets.

CARB Resolution 08-43 for On-Road Diesel Truck Fleets

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. By January 1, 2020, 90 percent of a truck fleet is required to have installed Best Available Control Technology (BACT) for NOx emissions and 100 percent of a truck fleet installed BACT for PM10 emissions. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California and a low use exemption for trucks that operate less than 1,000 miles per year or less than 100 hours, if the truck operates in a stationary mode. Starting January 1, 2020 the DMV will no longer register any vehicles that do not meet the Section 2025, title 13 requirements. All on-road diesel trucks utilized during construction of the proposed project will be required to comply with Resolution 08-43.

4.3 Regional – Southern California

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. The *Final 2016 Air Quality Management Plan* (2016 AQMP) was adopted by the SCAQMD Board on March 3, 2016 and was adopted by CARB on March 23, 2017 for inclusion into the California State Implementation Plan (SIP). The 2016 AQMP was prepared in order to meet the following standards:

- 8-hour Ozone (75 ppb) by 2032
- Annual PM2.5 (12 µg/m3) by 2021-2025
- 8-hour Ozone (80 ppb) by 2024 (updated from the 2007 and 2012 AQMPs)
- 1-hour Ozone (120 ppb) by 2023 (updated from the 2012 AQMP)
- 24-hour PM2.5 (35 µg/m^3) by 2019 (updated from the 2012 AQMP)

In addition to meeting the above standards, the 2016 AQMP also includes revisions to the attainment demonstrations for the 1997 8-hour ozone NAAQS and the 1979 1-hour ozone NAAQS. The prior 2012 AQMP was prepared in order to demonstrate attainment with the 24-hour PM2.5 standard by 2014 through adoption of all feasible measures. The prior 2007 AQMP demonstrated attainment with the 1997

8-hour ozone (80 ppb) standard by 2023, through implementation of future improvements in control techniques and technologies. These "black box" emissions reductions represent 65 percent of the remaining NOx emission reductions by 2023 in order to show attainment with the 1997 8-hour ozone NAAQS. Given the magnitude of these needed emissions reductions, additional NOx control measures have been provided in the 2012 AQMP even though the primary purpose was to show compliance with 24-hour PM2.5 emissions standards.

The 2016 AQMP provides a new approach that focuses on available, proven and cost effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities to promote reductions in GHG emissions and TAC emissions as well as efficiencies in energy use, transportation, and goods movement. The 2016 AQMP recognizes the critical importance of working with other agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings and industrial facilities to cleaner technologies in a manner that benefits not only air quality, but also local businesses and the regional economy.

Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the Air Basin. Instead, this is controlled through local jurisdictions in accordance to the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the *CEQA Air Quality Handbook* (SCAQMD CEQA Handbook), prepared by SCAQMD, 1993, with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs detailed in the AQMPs. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Air Basin, and adverse impacts will be minimized.

The following lists the SCAQMD rules that are applicable but not limited to residential development projects in the Air Basin.

Rule 402 - Nuisance

Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Compliance with Rule 402 will reduce local air quality and odor impacts to nearby sensitive receptors.

Rule 403- Fugitive Dust

Rule 403 governs emissions of fugitive dust during construction activities and requires that no person shall cause or allow the emissions of fugitive dust such that dust remains visible in the atmosphere beyond the property line or the dust emission exceeds 20 percent opacity, if the dust is from the operation of a motorized vehicle. Compliance with this rule is achieved through application of standard Best Available

Control Measures, which include but are not limited to the measures below. Compliance with these rules would reduce local air quality impacts to nearby sensitive receptors.

- Utilize either a pad of washed gravel 50 feet long, 100 feet of paved surface, a wheel shaker, or a wheel washing device to remove material from vehicle tires and undercarriages before leaving project site.
- Do not allow any track out of material to extend more than 25 feet onto a public roadway and remove all track out at the end of each workday.
- Water all exposed areas on active sites at least three times per day and pre-water all areas prior to clearing and soil moving activities.
- Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas that will remain inactive for 10 days or longer.
- Pre-water all material to be exported prior to loading, and either cover all loads or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114.
- Replant all disturbed area as soon as practical.
- Suspend all grading activities when wind speeds (including wind gusts) exceed 25 miles per hour.
- Restrict traffic speeds on all unpaved roads to 15 miles per hour or less.

Rules 1108 and 1108.1 – Cutback and Emulsified Asphalt

Rules 1108 and 1108.1 govern the sale, use, and manufacturing of asphalt and limits the VOC content in asphalt. This rule regulates the VOC contents of asphalt used during construction as well as any on-going maintenance during operations. Therefore, all asphalt used during construction and operation of the proposed project must comply with SCAQMD Rules 1108 and 1108.1.

Rule 1113 – Architectural Coatings

Rule 1113 governs the sale, use, and manufacturing of architectural coatings and limits the VOC content in sealers, coatings, paints and solvents. This rule regulates the VOC contents of paints available during construction. Therefore, all paints and solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1113.

Rule 1143 – Paint Thinners

Rule 1143 governs the sale, use, and manufacturing of paint thinners and multi-purpose solvents that are used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations. This rule regulates the VOC content of solvents used during construction. Solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1143.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the *2016-2040 Regional Transportation Plan/Sustainable*

Communities Strategy (RTP/SCS), adopted April, 2016 and the *2015 Federal Transportation Improvement* Program (FTIP), adopted October 2013, which addresses regional development and growth forecasts. Although the RTP/SCS and FTIP are primarily planning documents for future transportation projects a key component of these plans are to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The RTP/SCS, FTIP, and AQMP are based on projections originating within the City and County General Plans.

4.4 Local – City of Pomona

Local jurisdictions, such as the City of Pomona, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the AQMPs. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with the CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

5.0 ENERGY CONSERVATION MANAGEMENT

The regulatory setting related to energy conservation is primarily addressed through State and City regulations, which are discussed below.

5.1 State

Energy conservation management in the State was initiated by the 1974 Warren-Alquist State Energy Resources Conservation and Development Act that created the California Energy Resource Conservation and Development Commission (currently named California Energy Commission [CEC]), which was originally tasked with certifying new electric generating plants based on the need for the plant and the suitability of the site of the plant. In 1976 the Warren-Alquist Act was expanded to include new restrictions on nuclear generating plants, that effectively resulted in a moratorium of any new nuclear generating plants in the State. The following details specific regulations adopted by the State in order to reduce the consumption of energy.

California Code of Regulations (CCR) Title 20

On November 3, 1976 the CEC adopted the *Regulations for Appliance Efficiency Standards Relating to Refrigerators, Refrigerator-Freezers and Freezers and Air Conditioners,* which were the first energy-efficiency standards for appliances. The appliance efficiency regulations have been updated several times by the Commission and the most current version is the *2016 Appliance Efficiency Regulations*, adopted January 2017 and now includes almost all types of appliances and lamps that use electricity, natural gas as well as plumbing fixtures. The authority for the CEC to control the energy-efficiency of appliances is detailed in California Code of Regulations (CCR), Title 20, Division 2, Chapter 4, Article 4, Sections 1601-1609.

California Code of Regulations (CCR) Title 24, Part 6

The CEC is also responsible for implementing the CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24 Part 6) that were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. In 2008 the State set an energy-use reduction goal of zero-net-energy use of all new homes by 2020 and the CEC was mandated to meet this goal through revisions to the Title 24, Part 6 regulations.

The Title 24 standards are updated on a three-year schedule and since 2008 the standards have been incrementally moving to the 2020 goal of the zero-net-energy use. On January 1, 2020 the 2019 standards went into effect, that have been designed so that the average new home built in California will now use zero-net-energy and that non-residential buildings will use about 30 percent less energy than the 2016 standards due mainly to lighting upgrades. The 2019 standards also encourage the use of battery storage and heat pump water heaters, require the more widespread use of LED lighting, as well as improve the building's thermal envelope through high performance attics, walls and windows. The 2019 standards also require improvements to ventilation systems by requiring highly efficient air filters to trap hazardous air particulates as well as improvements to kitchen ventilation systems.

California Code of Regulations (CCR) Title 24, Part 11

CCR Title 24, Part 11: *California Green Building Standards* (CalGreen) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The CalGreen Building

Standards are also updated every three years and the current version is the 2019 California Green Building Standard Code that become effective on January 1, 2020.

The CALGreen Code contains requirements for construction site selection; storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

The CALGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy efficient appliances, renewable energy, graywater systems, water efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, storm water management, building design, insulation, flooring, and framing, among others. Implementation of the CALGreen Code measures reduces energy consumption and vehicle trips and encourages the use of alternative-fuel vehicles, which reduces pollutant emissions.

Some of the notable changes in the 2019 CALGreen Code over the prior 2016 CALGreen Code include: an alignment of building code engineering requirements with the national standards that include anchorage requirements for solar panels, provides design requirements for buildings in tsunami zones, increases Minimum Efficiency Reporting Value (MERV) for air filters from 8 to 13, increased electric vehicle charging requirements in parking areas, and sets minimum requirements for use of shade trees.

Senate Bill 100

Senate Bill 100 (SB 100) was adopted September 2018 and requires that by December 1, 2045 that 100 percent of retail sales of electricity to be generated from renewable or zero-carbon emission sources of electricity. SB 100 supersedes the renewable energy requirements set by SB 350, SB 1078, SB 107, and SB X1-2. However, the interim renewable energy thresholds from the prior Bills of 44 percent by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030, will remain in effect.

Executive Order B-48-18 and Assembly Bill 2127

The California Governor issued Executive Order B-48-18 on January 26, 2018 that orders all state entities to work with the private sector to put at least five million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 electric vehicle chargers by 2025. Currently there are approximately 350,000 electric vehicles operating in California, which represents approximately 1.5 percent of the 24 million vehicles total currently operating in California. Implementation of Executive Order B-48-18 would result in approximately 20 percent of all vehicles in California to be zero emission electric vehicles. Assembly Bill 2127 (AB 2127) was codified into statute on September 13, 2018 and requires that the California Energy Commission working with the State Air Resources Board prepare biannual assessments of the statewide electric vehicle charging infrastructure needed to support the levels of zero emission vehicle adoption required for the State to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030.

Assembly Bill 1109

California Assembly Bill 1109 (AB 1109) was adopted October 2007, also known as the Lighting Efficiency and Toxics Reduction Act, prohibits the manufacturing of lights after January 1, 2010 that contain levels of hazardous substances prohibited by the European Union pursuant to the RoHS Directive. AB 1109 also requires reductions in energy usage for lighting and is structured to reduce lighting electrical consumption by: (1) At least 50 percent reduction from 2007 levels for indoor residential lighting; and (2) At least 25 percent reduction from 2007 levels for indoor commercial and all outdoor lighting by 2018. AB 1109 would reduce GHG emissions through reducing the amount of electricity required to be generated by fossil fuels in California.

Assembly Bill 1493

California Assembly Bill 1493 (also known as the Pavley Bill, in reference to its author Fran Pavley) was enacted on July 22, 2002 and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2004, CARB approved the "Pavley I" regulations limiting the amount of GHGs that may be released from new passenger automobiles that are being phased in between model years 2009 through 2016. These regulations will reduce GHG emissions by 30 percent from 2002 levels by 2016. In June 2009, the EPA granted California the authority to implement GHG emission reduction standards for light duty vehicles, in September 2009, amendments to the Pavley I regulations were adopted by CARB and implementation of the "Pavley I" regulations started in 2009.

The second set of regulations "Pavley II" was developed in 2010, and is being phased in between model years 2017 through 2025 with the goal of reducing GHG emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards were developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the "LEV III" (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars as well as promote zero-emissions auto technologies such as electricity and hydrogen, and through increasing the infrastructure for fueling hydrogen vehicles. In 2009, the U.S. EPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks and sport utility vehicles and these GHG emissions standards are currently being implemented nationwide. However, EPA has performed a midterm evaluation of the longer-term standards for model years 2022-2025, and based on the findings of this midterm evaluation, the EPA has proposed to amend the corporate average fuel economy (CAFE) and GHG emissions standards for light vehicles for model years 2021 through 2026. The EPA's proposed amendments do not include any extension of the legal waiver granted to California by the 1970 Clean Air Act and which has allowed the State to set tighter standards for vehicle pipe emissions than the EPA standards. On September 20, 2019, California filed suit over the EPA decision to revoke California's legal waiver that has been joined by 22 other states.

5.2 Local – City of Pomona

The *City of Pomona Energy Action Plan*, November 2012, provides an Energy Resources Component that details the following applicable goals and policies.

Goal 3

New buildings will have no net impact on community energy demand.

Policy 3.1 - Work with project applicants through the plan review process to encourage the maximization of energy-efficient design of new buildings.

Policy 3.2 - Participate in a regional effort to implement energy efficiency standards for new development.

Policy 3.3 - Encourage the use of energy-efficient appliances and equipment in new buildings.

Goal 4

Encourage all new developments and significant remodels to be compatible with Title 24 and CAL Green Standards.

Policy 4.1 - Work with major educational facilities located in the City to be a model for energy efficiency and green building standards.

Goal 5

Reduce community water consumption in new and existing development to conserve electricity and promote energy efficiency.

Policy 5.1 - Encourage water-efficient practices through educational efforts to promote the conservation of electricity for water pumping and treatment.

Policy 5.2 - Support water-wise landscaping with drought-resistant species to reduce the electricity demand for water transport and treatment.

Goal 6

Maximize use of shading and cooling to sustain a comfortable and energy-efficient urban environmental.

Policy 6.1 - Maximize the cooling of buildings through tree planting and shading to reduce electricity demands.

Policy 6.2 - Reduce building electricity demands through voluntary standards and outreach to promote cool roofs and surfaces.

Policy 6.3 - Incorporate use of groundcovers rather than pavement to reduce heat reflection.

6.0 GLOBAL CLIMATE CHANGE MANAGEMENT

The regulatory setting related to global climate change is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to reduce GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for global climate change regulations are discussed below.

6.1 International

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries, the objective of reducing their collective GHG emissions by five percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182 countries, but has not been ratified by the United States. It should be noted that Japan and Canada opted out of the Kyoto Protocol and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012 and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force. The Parties to the Kyoto Protocol negotiated the Paris Agreement in December 2015, agreeing to set a goal of limiting global warming to less than 2 degrees Celsius compared with pre-industrial levels. The Paris Agreement has been adopted by 195 nations with 147 ratifying it, including the United States by President Obama, who ratified it by Executive Order on September 3, 2016. On June 1, 2017, President Trump announced that the United States is withdrawing from the Paris Agreement, however the Paris Agreement is still legally binding by the other remaining nations.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

6.2 Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for implementing federal policy to address global climate change. The Federal government administers a wide array of public-private partnerships to reduce U.S. GHG intensity. These programs focus on energy efficiency, renewable energy, methane, and other non-CO_2 gases, agricultural practices and implementation of technologies to achieve GHG reductions. EPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions did not impose any requirements on industry or other entities, however, since 2009 the EPA has been providing GHG emission standards for vehicles and other stationary sources of GHG emissions that are regulated by the EPA. On September 13, 2013 the EPA Administrator signed 40 CFR Part 60, that limits emissions from new sources to 1,100 pounds of CO_2 per MWh for fossil fuel-fired utility boilers and 1,000 pounds of CO_2 per MWh for large natural gas-fired combustion units.

On August 3, 2015, the EPA announced the Clean Power Plan, emissions guidelines for U.S. states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23 2015). On October 11, 2017, the EPA issued a formal proposal to repeal the Clean Power Plan and on June 19, 2019 the EPA replaced the Clean Power Plan with the Affordable Clean Energy rule that is anticipated to lower power sector GHG emissions by 11 million tons by the year 2030.

6.3 State

The California Air Resources Board (CARB) has the primary responsible for implementing state policy to address global climate change, however there are State regulations related to global climate change that affect a variety of State agencies. CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both the federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2008, CARB approved a Climate Change Scoping Plan that proposes a "comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008). The Climate Change Scoping Plan has a range of GHG reduction actions which include direct regulations; alternative compliance mechanisms; monetary and non-monetary incentives; voluntary actions; market-based mechanisms such as a cap-and-trade system. In 2014, CARB approved the First Update to the Climate Change Scoping Plan (CARB, 2014) that identifies additional strategies moving beyond the 2020 targets to the year 2050. On December 14, 2017 CARB adopted the California's 2017 Climate Change Scoping Plan, November 2017 (CARB, 2017) that provides specific statewide policies and measures to achieve the 2030 GHG reduction target of 40 percent below 1990 levels by 2030 and the

aspirational 2050 GHG reduction target of 80 percent below 1990 levels by 2050. In addition, the State has passed the following laws directing CARB to develop actions to reduce GHG emissions, which are listed below in chronological order, with the most current first.

California Code of Regulations (CCR) Title 24, Part 6

The Title 24 Part 6 standards have been developed by the CEC primarily for energy conservation and is described in more detail above in Section 5.1 under Energy Conservation Management. It should be noted that implementation of the Title 24 Part 6 building standards would also reduce GHG emissions, since energy usage is the primary source of human generated GHG emissions.

California Code of Regulations (CCR) Title 24, Part 11

The CalGreen Building standards have been developed by the CEC primarily for energy conservation and is described in more detail above in Section 5.1 under Energy Conservation Management. It should be noted that implementation of the CalGreen Building standards would also reduce GHG emissions, since energy usage is the primary source of human generated GHG emissions.

Senate Bill 100

SB 100 requires that by December 1, 2045 that 100 percent of retail sales of electricity to be generated from renewable or zero-carbon emission sources of electricity and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order B-48-18 and Assembly Bill 2127

Executive Order B-48-18 and AB 2127 provides measures to put at least five million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 electric vehicle chargers by 2025 and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order B-30-15, Senate Bill 32 and Assembly Bill 197

The California Governor issued Executive Order B-30-15 on April 29, 2015 that aims to reduce California's GHG emissions 40 percent below 1990 levels by 2030. This executive order aligns California's GHG reduction targets with those of other international governments, such as the European Union that set the same target for 2030 in October, 2014. This target will make it possible to reach the ultimate goal of reducing GHG emissions 80 percent under 1990 levels by 2050 that is based on scientifically established levels needed in the U.S.A to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels. Assembly Bill 197 (AB 197) (September 8, 2016) and Senate Bill 32 (SB 32) (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in Executive Order B-30-15. AB 197 also requires additional GHG emissions reporting that is broken down to sub-county levels and requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Executive Order B-29-15

The California Governor issued Executive Order B-29-15 on April 1, 2015 and directed the State Water Resources Control Board to impose restrictions to achieve a statewide 25% reduction in urban water usage and directed the Department of Water Resources to replace 50 million square feet of lawn with drought tolerant landscaping through an update to the State's Model Water Efficient Landscape

Ordinance. The Ordinance also requires installation of more efficient irrigation systems, promotion of greywater usage and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles. Executive Order B-29-15 would reduce GHG emissions associated with the energy used to transport and filter water.

Assembly Bill 341 and Senate Bills 939 and 1374

Senate Bill 939 (SB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills. Assembly Bill 341 (AB 341) was adopted in 2011 and builds upon the waste reduction measures of SB 939 and 1374, and sets a new target of a 75 percent reduction in solid waste generated by the year 2020.

Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 in order to support the State's climate action goals to reduce GHG emissions through coordinated regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each Metropolitan Planning Organizations (MPO) within the State. It was up to each MPO to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP) to meet CARB's 2020 and 2035 GHG emission reduction targets. These reduction targets are required to be updated every eight years and the most current targets are detailed at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets, which provides GHG emissions reduction targets for SCAG of 8 percent by 2020 and 19 percent by 2035.

The *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS), adopted by SCAG April, 2016 provides a 2020 GHG emission reduction target of 8 percent and a 2035 GHG emission reduction target of 18 percent. SCAG will need to develop additional strategies in its next revision of the RTP/SCS in order to meet CARB's new 19 percent GHG emission reduction target for 2035. CARB is also charged with reviewing SCAG's RTP/SCS for consistency with its assigned targets.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS. However, new provisions of CEQA incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS and categorized as "transit priority projects."

Assembly Bill 1109

AB 1109 requires reductions in energy usage for lighting and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten

percent by 2020. This Executive Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

In 2009 CARB approved the proposed regulation to implement the LCFS. The standard was challenged in the courts, but has been in effect since 2011 and was re-approved by the CARB in 2015. The LCFS is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The LCFS is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet annually. Reformulated gasoline mixed with corn-derived ethanol and low-sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel. Compressed natural gas and liquefied natural gas also may be low-carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles, are also considered as low-carbon fuels.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the State CEQA guidelines that addresses GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporated GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate Action Plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the GHG emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of GHG emissions in Appendix F of the CEQA Guidelines.

- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports must specifically consider a project's energy use and energy efficiency potential.

Assembly Bill 32

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and utilize best management practices that are technologically feasible and cost effective.

In 2007 CARB released the calculated Year 1990 GHG emissions of 431 million metric tons of CO2e ($MMTCO_2e$). The 2020 target of 431 $MMTCO_2e$ requires the reduction of 78 $MMTCO_2e$, or approximately 16 percent from the State's projected 2020 business as usual emissions of 509 $MMTCO_2e$ (CARB, 2014). Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO_2 in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources, all of which became enforceable on or before January 1, 2010.

CARB's Scoping Plan that was adopted in 2009, proposes a variety of measures including: strengthening energy efficiency and building standards; targeted fees on water and energy use; a market-based cap-and-trade system; achieving a 33 percent renewable energy mix; and a fee regulation to fund the program. The 2014 update to the Scoping Plan identifies strategies moving beyond the 2020 targets to the year 2050.

The Cap and Trade Program established under the Scoping Plan sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and has established a market for long-term investment in energy efficiency and cleaner fuels since 2012.

Executive Order S-3-05

In 2005 the California Governor issued Executive Order S 3-05, GHG Emission, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels;
- 2020: Reduce greenhouse gas emissions to 1990 levels;
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs. The State achieved its first goal of reducing GHG emissions to 2000 levels by 2010.

Assembly Bill 1493

AB 1493 or the Pavley Bill sets tailpipe GHG emissions limits for passenger vehicles in California as well as fuel economy standards and is described in more detail above in Section 5.1 under Energy Conservation Management.

6.4 Regional – Southern California

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. The SCAQMD is also responsible for GHG emissions for projects where it is the lead agency. However, for other projects in the SCAB where it is not the lead agency, it is limited to providing resources to other lead agencies in order to assist them in determining GHG emission thresholds and GHG reduction measures. In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group and adopted Rules 2700, 2701, and 2702, which are described below.

SCAQMD Working Group

Since neither CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that either provides a quantitative annual thresholds of 3,500 $MTCO_2e$ for residential uses, 1,400 $MTCO_2e$ for commercial uses, and 3,000 $MTCO_2e$ for mixed uses. An alternative annual threshold of 3,000 $MTCO_2e$ for all land use types is also proposed.

Southern California Association of Governments

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component of these plans are to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The RTP/SCS, FTIP, and AQMP are based on projections originating within the City and County General Plans.

6.5 Local – City of Pomona

Local jurisdictions, such as the City of Pomona, have the authority and responsibility to reduce GHG emissions through their police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of GHG emissions resulting from its land use decisions. In accordance with CEQA requirements and the CEQA review process, the City assesses the global climate change potential of new development projects, requires mitigation of potentially significant global climate change impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

7.0 ATMOSPHERIC SETTING

7.1 South Coast Air Basin

The project site is located within Los Angeles County, which is part of the South Coast Air Basin (Air Basin) that includes the non-desert portions of Riverside, San Bernardino, and Los Angeles Counties and all of Orange County. The Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter.

7.2 Local Climate

The climate of southeastern Los Angeles County is characterized by hot dry summers, mild moist winters with infrequent rainfall, moderate afternoon breezes, and generally fair weather. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern.

Although the Air Basin has a semi-arid climate, the air near the surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry air is brought into the Air Basin by offshore winds, the ocean effect is dominant. Periods of heavy fog are frequent and low stratus clouds, often referred to as “high fog” are a characteristic climate feature.

Winds are an important parameter in characterizing the air quality environment of a project site because they determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in Los Angeles County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds are usually the strongest in the dry summer months. Nighttime winds in Los Angeles County are a result mainly from the drainage of cool air off of the mountains to the east and they occur more often during the winter months and are usually lighter than the daytime winds. Between the periods of dominant airflow, periods of air stagnation may occur, both in the morning and evening hours. Whether such a period of stagnation occurs is one of the critical determinants of air quality conditions on any given day.

During the winter and fall months, surface high-pressure systems north of the Air Basin combined with other meteorological conditions, can result in very strong winds, called “Santa Ana Winds”, from the northeast. These winds normally have durations of a few days before predominant meteorological conditions are reestablished. The highest wind speed typically occurs during the afternoon due to daytime thermal convection caused by surface heating. This convection brings about a downward transfer of momentum from stronger winds aloft. It is not uncommon to have sustained winds of 60 miles per hour with higher gusts during a Santa Ana Wind event.

The temperature and precipitation levels for Pomona Fairplex, which is the nearest weather station to the project site with historical data is shown below in Table D. Table D shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table D – Monthly Climate Data

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Total Precipitation (inches)
January	65.5	38.1	3.56
February	67.6	40.3	3.49
March	70.1	42.3	2.82
April	74.2	45.6	2.82
May	77.8	50.0	0.35
June	84.1	53.4	0.10
July	91.0	57.7	0.01
August	91.1	58.1	0.07
September	88.4	55.3	0.26
October	80.6	49.8	0.78
November	73.2	42.6	1.56
December	66.4	38.4	2.77
Annual	**77.8**	**47.6**	**16.97**

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7050

7.3 Monitored Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Air Basin. Estimates of the existing emissions in the Air Basin provided in the 2012 AQMP, indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NOx emissions and 40 percent of directly emitted PM2.5, with another 10 percent of PM2.5 from road dust. The 2016 AQMP found that since 2012 AQMP projections were made stationary source VOC emissions have decreased by approximately 12 percent, but mobile VOC emissions have increased by 5 percent. The percentage of NOx emissions remain unchanged between the 2012 and 2016 projections.

SCAQMD has divided the Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located on the northwestern edge of air monitoring area 10, which covers the Pomona and Walnut Valley portion of Los Angeles County. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the project site have been used: Pomona Station (Pomona Station) and Glendora-Laurel Monitoring Station (Glendora Station).

The Pomona Station is located approximately 1.5 miles northwest of the project site at 924 N. Garey Ave, Pomona and the Glendora Station is located approximately 6.5 miles west of the project site at 840 Laurel, Glendora. The monitoring data is presented in Table E and shows the most recent three years of monitoring data from CARB. Ozone and NO_2 were measured at the Pomona Station and PM10 and PM2.5 were measured at the Glendora Station. CO measurements have not been provided, since CO is currently in attainment in the Air Basin and monitoring of CO within the Air Basin ended on March 31, 2013.

Table E – Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year[1] 2016	2017	2018
Ozone: [1]			
Maximum 1-Hour Concentration (ppm)	0.127	0.147	0.112
Days > CAAQS (0.09 ppm)	**20**	**18**	**7**
Maximum 8-Hour Concentration (ppm)	0.092	0.114	0.092
Days > NAAQS (0.070 ppm)	**26**	**35**	**10**
Days > CAAQs (0.070 ppm)	**29**	**38**	**11**
Nitrogen Dioxide:[1]			
Maximum 1-Hour Concentration (ppb)	69.3	81.2	67.9
Days > NAAQS (100 ppb)	0	0	ND
Days > CAAQS (180 ppb)	0	0	ND
Inhalable Particulates (PM10) :[2]			
Maximum 24-Hour National Measurement (ug/m^3)	75.1	140.7	101.7
Days > NAAQS (150 ug/m^3)	0	0	0
Days > CAAQS (50 ug/m^3)	ND	ND	ND
Annual Arithmetic Mean (AAM) (ug/m^3)	31.0	32.9	28.6
Annual > NAAQS (50 ug/m^3)	No	No	No
Annual > CAAQS (20 ug/m^3)	**Yes**	**Yes**	**Yes**
Ultra-Fine Particulates (PM2.5):[2]			
Maximum 24-Hour National Measurement (ug/m^3)	44.1	109.6	84.8
Days > NAAQS (35 ug/m^3)	1	1	**2**
Annual Arithmetic Mean (AAM) (ug/m^3)	ND	ND	ND
Annual > NAAQS and CAAQS (12 ug/m^3)	ND	ND	ND

Notes: Exceedances are listed in **bold.** CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion; ND = no data available.

[1] Data obtained from the Pomona Station.

[2] Data obtained from the Glendora Station.

Source: http://www.arb.ca.gov/adam/

Ozone

During the last three years, the State 1-hour concentration standard for ozone has been exceeded between 7 and 20 days each year at the Pomona Station. The State 8-hour ozone standard has been exceeded between 11 and 38 days each year over the last three years at the Pomona Station. The Federal 8-hour ozone standard has been exceeded between 10 and 35 days each year over the last three years at the Pomona Station. Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of Southern California

contribute to the ozone levels experienced at this monitoring station, with the more significant areas being those directly upwind.

Nitrogen Dioxide

The Pomona Station did not record an exceedance of either the Federal or State 1-hour NO_2 standards for the last three years.

Particulate Matter

The State 24-hour concentration standard for PM10 had no data available the Glendora Station. Over the past three years the Federal 24-hour standard for PM10 has not been exceeded at the Glendora Station. The annual PM10 concentration at the Glendora Station has exceeded the State standard for all of the past three years and has not exceeded the Federal standard for the past three years.

Over the past three years the 24-hour concentration standard for PM2.5 has been exceeded one time 2016 and 2017 and two times 2018 at the Glendora Station. The annual PM2.5 concentrations at the Glendora Station has no data. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

7.4 Toxic Air Contaminant Levels in the Air Basin

In order to determine the Air Basin-wide risks associated with major airborne carcinogens, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES) studies. According to the SCAQMD's MATES-IV study, the project site has an estimated cancer risk of 1,164 per million persons chance of cancer. In comparison, the average cancer risk for the Air Basin is 991 per million persons, which is based on the use of age-sensitivity factors detailed in the OEHHA Guidelines (OEHHA, 2015).

In order to provide a perspective of risk, it is often estimated that the incidence in cancer over a lifetime for the U.S. population ranges between 1 in 3 to 4 and 1 in 3, or a risk of about 300,000 per million persons. The MATES-III study referenced a Harvard Report on Cancer Prevention, which estimated that of cancers associated with known risk factors, about 30 percent were related to tobacco, about 30 percent were related to diet and obesity, and about 2 percent were associated with environmental pollution related exposures that includes hazardous air pollutants.

8.0 MODELING PARAMETERS AND ASSUMPTIONS

8.1 CalEEMod Model Input Parameters

The criteria air pollution and GHG emissions impacts created by the proposed project have been analyzed through use of CalEEMod Version 2016.3.2. CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2014 computer program to calculate the emission rates specific for the South Coast Air Basin portion of Los Angeles County for employee, vendor and haul truck vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy equipment operations. EMFAC2014 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The project characteristics in the CalEEMod model were set to a project location of South Coast Air Basin portion of Los Angeles County, a Climate Zone of 8, utility company of Southern California Edison and an opening year of 2022 was utilized in this analysis.

Land Use Parameters

The proposed project would consist of development of 152 multi-family three-story townhomes. The townhomes range in size from 1,214 square feet to 1,822 square feet with a total building area of 235,128 square feet. Additionally, the proposed project would provide 344 total parking spaces (304 garage and 40 guest), and a common open space area that includes a pool and community building with a restroom and mail room. The proposed project's land use parameters that were entered into the CalEEMod model are shown in Table F.

Table F – CalEEMod Land Use Parameters

Proposed Land Use	Land Use Subtype in CalEEMod	Land Use Size[1]	Lot Acreage[2]	Building/Paving[3] (square feet)
Multi-Family Residential	Condo/Townhouse High Rise[4]	152 Unit	5.19	235,128.00
Onsite Roads and Parking Areas	Other Asphalt Surfaces	2.28 AC	2.28	99,316.80

Notes:
[1] Unit = Residential unit; AC = Acre
[2] Lot acreage calculated based on the total project area of 7.47-acres.
[3] Building/Paving square feet represent area where architectural coatings will be applied.
[4] Condo/Townhouse High Rise is defined in the CalEEMod User Guide as three or more stories.

Construction Parameters

Construction activities have been modeled as starting in November 2020 and taking 14 months to complete. The construction-related GHG emissions were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The phases of construction activities that have been analyzed are detailed below and include: 1) Site Preparation; 2) Grading, 3) Building construction, 4) Application of architectural coatings, and 5) Paving.

Site Preparation

The site preparation phase would consist of removing any vegetation, tree stumps, and stones onsite prior to grading. The site preparation phase is anticipated to start November 2020 and was modeled as occurring over two weeks. The site preparation activities would require 18 worker trips per day. In order

to account for water truck emissions, six vendor truck emissions were added to the site preparation phase. The onsite equipment would consist of three rubber tired dozers, and four of either tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix. The mitigation of water all exposed areas two times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

Grading

The grading phase would occur after completion of the site preparation phase and was modeled as occurring over four weeks. The onsite equipment utilized during the grading phase would consist of one excavator, one grader, one rubber tired dozer, and three of either tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix. The grading activities would generate 16 worker trips per day. In order to account for water truck emissions, six daily vendor truck trips were added to the grading phase. The mitigation of water all exposed areas two times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

Building Construction

The building construction would occur after the completion of the grading phase and was modeled as occurring over 11 months, which is based on the CalEEMod default timing. The building construction phase would generate 152 worker trips and 34 vendor trips per day. The onsite equipment would consist of the simultaneous operation of one crane, three forklift, one generator, one welders, and one of either tractor, loader, or backhoe, which is based on the CalEEMod default equipment mix.

Paving

The paving phase would consist of paving the onsite roads and parking areas. The paving phase was modeled as occurring over four weeks and starting after completion of the building construction phase. The paving phase would generate 16 worker trips per day. The onsite equipment would consist of the simultaneous operation of two cement and mortar mixers, two pavers, two paving equipment, and two rollers, which is based on the CalEEMod default equipment mix.

Architectural Coating

The application of architectural coatings was modeled as occurring after the completion of the paving phase and was modeled as occurring over six weeks.. The architectural coating phase was modeled based on covering 476,143 square feet of residential interior area, 158,711 square feet of residential exterior area, and 5,959 square feet of parking area. The architectural coating phase would generate 30 worker trips per day. The onsite equipment would consist of one air compressor, which is based on the CalEEMod default equipment mix.

Operational Emissions Modeling

The operations-related criteria air pollutant emissions and GHG emissions created by the proposed project have been analyzed through use of the CalEEMod model. The proposed project was analyzed in the CalEEMod model based on the land use parameters provided above.

Mobile Sources

Mobile sources include emissions the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project were obtained from *1440 Murchison Avenue Traffic Impact Study* (Traffic Study), prepared by Urban Crossroads, December 9, 2019 which found that the proposed project would generate 828 daily vehicle trips, which is based on a trip generation rate of 5.45 daily trips per residential unit. No other changes were made to the CalEEMod default mobile source parameters.

The mobile source emissions analysis included the CalEEMod mitigation of increase density to 20.3 dwelling units per acre, improved pedestrian network onsite and connecting offsite, since the proposed project would include construction of an onsite pedestrian network that would connect to the existing sidewalks.

Area Sources

Area sources include emissions from consumer products, landscape equipment, hearths and architectural coatings. The area source emissions were based on the on-going use of the proposed project in the CalEEMod model. According to the proposed project plans, no fireplaces or wood stoves would be installed into the proposed residential apartment units or common areas. As such the number of woodstoves and fireplaces was set to zero. No other changes were made to the default area source parameters in the CalEEMod model.

Energy Usage

Energy usage includes emissions from electricity and natural gas used onsite. The energy usage was based on the ongoing use of the proposed project in the CalEEMod Model. No changes were made to the default energy usage parameters in the CalEEMod model.

The new 2019 Title 24, Part 6 building energy efficiency standards went into effect January 1, 2020. The 2019 Title 24, Part 6 standards have been developed so that the average new home built in California will have zero-net-energy use. In order to account for the new 2019 Title 24, Part 6 standards, this analysis included the CalEEMod mitigation of exceed the 2016 Title 24 standards by 7 percent, since the 2019 building standards have been calculated to result in new homes using about 7 percent less energy than homes built with the 2016 building standards (https://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf

Solid Waste

Waste includes the GHG emissions associated with the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. The analysis was based on the default CalEEMod waste generation rates of 70 tons of solid waste per year from the proposed project. No changes were made to the default solid waste parameters or mitigation measures in the CalEEMod model.

The CalEEMod mitigation of a 50 percent reduction in landfill waste was selected to account for implementation of AB 341 that provides strategies to reduce, recycle or compost solid waste by 75 percent by 2020. Only 50 percent was selected, since AB 341 builds upon the waste reduction measures of SB 939

and 1374 and therefore, it was assumed approximately 25 percent of the waste reduction target has already been accounted for in the CalEEMod model.

Water and Wastewater

Water includes the water used for the interior of the buildings as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. The analysis was based on the default CalEEMod water usage rate of 9,903,412 gallons per year of indoor water use and 6,243,455 gallons per year of outdoor water use. No changes were made to the default water and wastewater parameters in the CalEEMod model.

The CalEEMod mitigation of the use of low flow faucets, showers, and toilets and use of smart irrigation system controllers were selected to account for the implementation of the 2016 CCR Title 24 Part 11 (CalGreen) requirements.

8.2 Energy Use Calculations

The proposed project is anticipated to consume energy during both construction and operation of the proposed project and the parameters utilized to calculate energy use from construction and operation of the proposed project are detailed separately below.

Construction-Related Energy Use

Construction of the proposed project is anticipated to use energy in the forms of petroleum fuel for both off-road equipment as well as from the transport of workers and materials to and from the project site and the calculations for each source are described below.

Off-Road Construction Equipment

The off-road construction equipment fuel usage was calculated through use of the CalEEMod model's default off-road equipment assumptions detailed above in Section 8.1. For each piece of off-road equipment, the fuel usage was calculated through use of the *2017 Off-road Diesel Emission Factors* spreadsheet, prepared by CARB (https://ww3.arb.ca.gov/msei/ordiesel.htm). The Spreadsheet provides the following formula to calculate fuel usage from off-road equipment:

> Fuel Used = Load Factor x Horsepower x Total Operational Hours x BSFC / Unit Conversion
>
> Where:
>
> Load Factor - Obtained from CalEEMod default values
>
> Horsepower – Obtained from CalEEMod default values
>
> Total Operational Hours – Calculated by multiplying CalEEMod default daily hours by CalEEMod default number of working days for each phase of construction
>
> BSFC – Brake Specific Fuel Consumption (pounds per horsepower-hour) – If less than 100 Horsepower = 0.408, if greater than 100 Horsepower = 0.367
>
> Unit Conversion – Converts pounds to gallons = 7.109

Table G shows the off-road construction equipment fuel calculations based on the above formula.

Table G – Off-Road Equipment and Fuel Consumption from Construction of the Proposed Project

Equipment Type	Equipment Quantity	Horse-power	Load Factor	Operating Hours per Day	Total Operational Hours[1]	Fuel Used (gallons)
Site Preparation						
Rubber Tired Dozers	3	247	0.4	8	240	1,224
Tractors/Loaders/Backhoes	4	97	0.37	8	320	659
Grading						
Excavator	1	158	0.38	8	160	496
Grader	1	187	0.41	8	160	633
Rubber Tired Dozer	1	247	0.40	8	160	816
Tractors/Loaders/Backhoes	2	97	0.37	8	480	989
Building Construction						
Crane	1	231	0.29	7	1,610	5,568
Forklifts	3	89	0.20	8	5,520	5,639
Generator Set	1	84	0.74	8	1,840	6,564
Tractor/Loader/Backhoes	3	97	0.37	7	4,830	9,949
Welder	1	46	0.45	8	1,840	2,186
Paving						
Paver	2	130	0.42	8	320	902
Paving Equipment	2	132	0.36	8	320	785
Rollers	2	80	0.38	8	320	558
Architectural Coating						
Air Compressor	1	78	0.48	6	180	387
	Total Off-Road Equipment Fuel Used during Construction (gallons)					**36,969**

Notes:
[1] Based on: 10 days for Site Preparation; 20 days for Grading; 230 days for Building Construction; 20 days for Paving; and 30 days for Painting.
Source: CalEEMod Version 2016.3.2 (see Appendix A); CARB, 2017.

Table G shows that the off-road equipment utilized during construction of the proposed project would consume 36,969 gallons of fuel.

On-Road Construction-Related Vehicle Trips

The on-road construction-related vehicle trips fuel usage was calculated through use of the construction vehicle trip assumptions from the CalEEMod model run as detailed above in Section 8.1. The calculated total construction miles was then divided by the fleet average for all of Southern California miles per gallon rates for the year 2021 for both truck trips and worker trips/resident trips, calculated through use of the EMFAC2017 model (https://www.arb.ca.gov/emfac/2017/) and the EMFAC2017 model printouts are shown in Appendix B. Table H shows the on-road construction vehicle trips modeled in CalEEMod and the fuel usage calculations.

Table H – On-Road Vehicle Trips and Fuel Consumption from Construction of the Proposed Project

Vehicle Trip Types	Daily Trips	Trip Length (miles)	Total Miles per Day	Total Miles per Phase[1]	Fleet Average Miles per Gallon[2]	Fuel Used (gallons)
Site Preparation						
Worker Trips	18	14.7	265	2,646	27.4	96
Vendor Truck Trips	6	6.9	41	414	8.0	52
Grading						
Worker Trips	16	14.7	235	4,704	27.4	171
Vendor Truck Trips	6	6.9	41	828	8.0	104
Building Construction						
Worker Trips	1521	14.7	2,234	513,912	27.4	18,736
Vendor Truck Trips	34	6.9	235	53,958	8.0	6,771
Paving						
Worker Trips	16	14.7	235	4,704	27.4	171
Architectural Coating						
Worker Trips	30	14.7	441	13,230	27.4	482
		Total Fuel Used from On-Road Construction Vehicles (gallons)				**26,584**

Notes:
[1] Based on: 10 days for Site Preparation; 20 days for Grading; 230 days for Building Construction; 20 days for Paving; and 30 days for Painting.
[2] From EMFAC 2017 model (see Appendix B). Worker Trips based on the worker trip vehicle mix from the CalEEMod User Guide of 50% LDA, 25% LDT1, and 25% LDT2. Vendor Trips based on the HHDT, MDV, and MHDT truck fleet of diesel vehicles.
Source: CalEEMod Version 2016.3.2; CARB, 2018.

Table H shows that the on-road construction-related vehicle trips would consume 26,584 gallons of fuel and as detailed above, Table G shows that the off-road construction equipment would consume 36,969 gallons of fuel. This would result in the total consumption of 63,553 gallons of petroleum fuel from construction of the proposed project.

Operations-Related Energy Use

The operation of the proposed project is anticipated to use energy in the forms of petroleum fuel, electricity, and natural gas, and the calculations for each source are described below.

Operational Petroleum Fuel

The on-road operations-related vehicle trips fuel usage was calculated through use of the total annual vehicle miles traveled assumptions from the CalEEMod model run as detailed above in Section 8.1, which found that operation of the proposed project would generate 2,444,650 vehicle miles traveled per year. The calculated total construction miles was then divided by the resident/construction worker fleet mix average that consists of 50 percent LDA, 25 percent LDT1, and 25 percent LDT2 vehicle mix average rate of 27.4 miles per gallon, which was calculated through use of the EMFAC2017 model and based on the year 2021. The EMFAC2017 model printouts are shown in Appendix B. Based on the above calculation methodology, operation of the proposed project would consume 89,308 gallons per year.

Operational Electricity Use

The operations-related electricity usage was calculated in the CalEEMod model run that is detailed above in Section 8.1 that found the proposed project will use 652,102 kilowatt hours (kWh) per year.

Operational Natural Gas Use

The operations-related natural gas usage was calculated in the CalEEMod model run that is provided in the Air Quality analysis that found the proposed project will use 1,961,610 kilo British Thermal Units (kBTU) per year, which is equivalent to 1,962 mega-British Thermal units (MBTU) per year of natural gas.

9.0 THRESHOLDS OF SIGNIFICANCE

9.1 Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the Air Basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table I.

Table I – SCAQMD Regional Criteria Pollutant Emission Thresholds of Significance

	Pollutant Emissions (pounds/day)						
	VOC	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**Lead**
Construction	75	100	550	150	150	55	3
Operation	55	55	550	150	150	55	3

Source: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2

9.2 Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. SCAQMD has also provided *Final Localized Significance Threshold Methodology* (LST Methodology), July 2008, which details the methodology to analyze local air emission impacts. The LST Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5.

The LST Methodology provides Look-Up Tables with different thresholds based on the location and size of the project site and distance to the nearest sensitive receptors. As detailed above in Section 7.3, the project site is located in Area 10, which covers the Pomona and Walnut Valley portion of Los Angeles County. The Look-Up Tables provided in the LST Methodology include project site acreage sizes of 1-acre, 2-acres and 5-acres. The 5-acre project site values in the Look-Up Tables have been utilized in this analysis, since that is the nearest size available for the 7.47-acre project site. The nearest offsite sensitive receptors include multi-family residential homes located adjacent to the east side of the project site and Cortez Magnet School, which is located adjacent to the south side of the project site. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25 meter thresholds. Table J below shows the LSTs for NOx, CO, PM10 and PM2.5 for both construction and operational activities.

Table J – SCAQMD Local Air Quality Thresholds of Significance

Activity	Allowable Emissions (pounds/day)[1]			
	NOx	CO	PM10	PM2.5
Construction	236	1,566	12	7
Operation	236	1,566	3	2

Notes:
[1] The nearest offsite sensitive receptors are multi-family residential located adjacent to the east side of the project site and is Cortez Magnet School, located adjacent to the south side of the project site. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25 meter threshold.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for five acres in Air Monitoring Area 10, Pomona/Walnut Valley.

9.3 Toxic Air Contaminants

According to the SCAQMD CEQA Handbook, any project that has the potential to expose the public to toxic air contaminants in excess of the following thresholds would be considered to have a significant air quality impact:

- If the Maximum Incremental Cancer Risk is 10 in one million or greater; or
- Toxic air contaminants from the proposed project would result in a Hazard Index increase of 1 or greater.

In order to determine if the proposed project may have a significant impact related to toxic air contaminants (TACs), the *Health Risk Assessment Guidance for analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, (Diesel Analysis) prepared by SCAQMD, August 2003, recommends that if the proposed project is anticipated to create TACs through stationary sources or regular operations of diesel trucks on the project site, then the proximity of the nearest receptors to the source of the TAC and the toxicity of the hazardous air pollutant (HAP) should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

9.4 Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

> "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
>
> The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

9.5 Energy Conservation

The 2018 amendments and additions to the CEQA Checklist now include an Energy Section that analyzes the proposed project's energy consumption in order to avoid or reduce inefficient, wasteful or unnecessary consumption of energy. Since the Energy Section was just added, no state or local agencies

have adopted specific criteria or thresholds to be utilized in an energy impact analysis. However, the 2018 *Guidelines for the Implementation of the California Environmental Quality Act,* provide the following direction on how to analyze a project's energy consumption:

> "If analysis of the project's energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, the EIR shall mitigate that energy use. This analysis should include the project's energy use for all project phases and components, including transportation-related energy, during construction and operation. In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project. (Guidance on information that may be included in such an analysis is presented in Appendix F.) This analysis is subject to the rule of reason and shall focus on energy use that is caused by the project. This analysis may be included in related analyses of air quality, greenhouse gas emissions, transportation or utilities in the discretion of the lead agency."

If the proposed project creates inefficient, wasteful or unnecessary consumption of energy during construction or operation activities or conflicts with a state or local plan for renewable energy or energy efficiency, then the proposed project would create a significant energy impact.

9.6 Greenhouse Gas Emissions

The proposed project is located within the jurisdiction of the SCAQMD. In order to identify significance criteria under CEQA for development projects, SCAQMD initiated a Working Group, which provided detailed methodology for evaluating significance under CEQA. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual threshold of 3,000 $MTCO_2e$ for all land use projects. Although the SCAQMD provided substantial evidence supporting the use of the above threshold, as of November 2017, the SCAQMD Board has not yet considered or approved the Working Group's thresholds.

It should be noted that SCAQMD's Working Group's thresholds were prepared prior to the issuance of Executive Order B-30-15 on April 29, 2015 that provided a reduction goal of 40 percent below 1990 levels by 2030. This target was codified into statute through passage of AB 197 and SB 32 in September 2016. However, to date no air district or local agency within California has provided guidance on how to address AB 197 and SB 32 with relation to land use projects. In addition, the California Supreme Court's ruling on *Cleveland National Forest Foundation v. San Diego Association of Governments* (Cleveland v. SANDAG), Filed July 13, 2017 stated:

> SANDAG did not abuse its discretion in declining to adopt the 2050 goal as a measure of significance in light of the fact that the Executive Order does not specify any plan or implementation measures to achieve its goal. In its response to comments, the EIR said: "It is uncertain what role regional land use and transportation strategies can or should play in achieving the EO's 2050 emissions reduction target. A recent California Energy Commission report concludes, however, that the primary strategies to achieve this target should be major 'decarbonization' of electricity supplies and fuels, and major improvements in energy efficiency [citation].

Although, the above court case was referencing California's GHG emission targets for the year 2050, at this time it is also unclear what role land use strategies can or should play in achieving the AB 197 and SB 32 reduction goal of 40 percent below 1990 levels by 2030. As such this analysis has relied on the SCAQMD Working Group's recommended thresholds. Therefore, the proposed project would be considered to create a significant cumulative GHG impact if the proposed project would exceed the annual threshold of 3,000 $MTCO_2e$.

The GHG emissions analysis for both construction and operation of the proposed project can be found below in Sections 10.8 and 10.9.

10.0 IMPACT ANALYSIS

10.1 CEQA Thresholds of Significance

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality, energy, and GHG emissions would occur if the proposed project is determined to:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people;
- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation;
- Conflict with or obstruct a state or local plan for renewable energy;
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

10.2 Air Quality Compliance

The proposed project would not conflict with or obstruct implementation of the SCAQMD Air Quality Management Plan (AQMP). The following section discusses the proposed project's consistency with the SCAQMD AQMP.

SCAQMD Air Quality Management Plan

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and regional plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in this report, short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance discussed above in Section 9.1 or local thresholds of significance discussed above in Section 9.2. The ongoing operation of the proposed project would generate air pollutant emissions that are inconsequential on a regional basis and would not result in significant impacts based on SCAQMD thresholds of significance discussed above in Section 9.1. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the air quality standards. Therefore, a less than significant long-term impact would occur and no mitigation would be required.

Therefore, based on the information provided above, the proposed project would be consistent with the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to insure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The AQMP is developed through use of the planning forecasts provided in the RTP/SCS and FTIP. The RTP/SCS is a major planning document for the regional transportation and land use network within Southern California. The RTP/SCS is a long-range plan that is required by federal and state requirements placed on SCAG and is updated every four years. The FTIP provides long-range planning for future transportation improvement projects that are constructed with state and/or federal funds within Southern California. Local governments are required to use these plans as the basis of their plans for the purpose of consistency with applicable regional plans under CEQA. For this project, the City of Pomona General Plan's Land Use Plan defines the assumptions that are represented in AQMP.

The project site is currently designated as Urban Neighborhood (6E) in the General Plan and is zoned as Highway Commercial (C4). The proposed project consists of the development of 152 townhomes on a 7.47-acre project site, which would result in a density of 20.3 dwelling units per acre. Therefore, the proposed project would require Zone Change from Highway Commercial (C4) to Residential (R3). Upon approval of the Zone Change, the zoning for the project site would be consistent with the General Plan land use designation. Although the proposed project is currently inconsistent with the zoning for the project site, the proposed project would be consistent with the adjacent multifamily residential land uses to the east and would be in substantial compliance with the Land Use Element goals and policies. Furthermore, the proposed project consists of an infill residential development in an area of Southern California that has a shortage of housing. As such, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur in relation to implementation of the AQMP.

Level of Significance

Less than significant impact.

10.3 Cumulative Net Increase in Non-Attainment Pollution

The proposed project would not 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. The following section calculates the potential air emissions associated with the construction and operations of the proposed project and compares the emissions to the SCAQMD standards.

Construction Emissions

The construction activities for the proposed project are anticipated to include site preparation and grading of the 7.47 acre project site, building construction of the 152 townhomes, paving of the onsite roads and parking areas and application of architectural coatings. The construction emissions have been analyzed for both regional and local air quality impacts.

Construction-Related Regional Impacts

The CalEEMod model has been utilized to calculate the construction-related regional emissions from the proposed project and the input parameters utilized in this analysis have been detailed in Section 7.1. The worst-case summer or winter daily construction-related criteria pollutant emissions from the proposed project for each phase of construction activities are shown below in Table K and the CalEEMod daily printouts are shown in Appendix A. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently towards the end of the building construction phase, Table K also shows the combined regional criteria pollutant emissions from year 2021 building construction, paving and architectural coating phases of construction.

Table K shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds during either demolition, grading, or the combined building construction, paving and architectural coatings phases. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Table K – Construction-Related Regional Criteria Pollutant Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Site Preparation[1]						
Onsite	4.08	42.42	21.51	0.04	10.33	6.49
Offsite	0.11	0.70	0.96	0	0.24	0.07
Total	**4.19**	**43.12**	**22.47**	**0.04**	**10.57**	**6.56**
Grading[1]						
Onsite	2.40	26.39	16.05	0.03	7.82	4.54
Offsite	0.10	0.70	0.83	0.00	0.21	0.06
Total	**2.50**	**27.09**	**16.88**	**0.03**	**8.03**	**4.60**
Building Construction (Year 2021)						
Onsite	1.90	17.43	16.58	0.03	0.96	0.90
Offsite	0.83	3.80	6.92	0.03	1.94	0.53
Total	**2.73**	**21.23**	**23.50**	**0.06**	**2.90**	**1.43**
Combined Building Construction (Year 2021), Paving and Architectural Coatings						
Onsite	53.63	31.87	33.04	0.05	1.73	1.61
Offsite	1.04	3.95	8.73	0.03	2.46	0.67
Total	**54.67**	**35.82**	**41.77**	**0.08**	**4.19**	**2.28**
Maximum Daily Construction Emissions	**54.67**	**43.12**	**41.77**	**0.08**	**10.57**	**6.56**
SCQAMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Site Preparation and Grading based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
[2] Onsite emissions from equipment not operated on public roads.
[3] Offsite emissions from vehicles operating on public roads.
Source: CalEEMod Version 2016.3.2.

Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

The local air quality emissions from construction were analyzed through utilizing the methodology described in *Localized Significance Threshold Methodology* (LST Methodology), prepared by SCAQMD, revised October 2009. The LST Methodology found the primary criteria pollutant emissions of concern are NOx, CO, PM10, and PM2.5. In order to determine if any of these pollutants require a detailed analysis of the local air quality impacts, each phase of construction was screened using the SCAQMD's Mass Rate LST Look-up Tables. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily onsite emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality.

Table L shows the onsite emissions from the CalEEMod model for the different construction phases and the calculated localized emissions thresholds that have been detailed above in Section 9.2. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently towards the end of the building construction phase, Table L also shows the combined local criteria

pollutant emissions from year 2021 building construction, paving and architectural coating phases of construction.

Table L – Construction-Related Local Criteria Pollutant Emissions

Construction Phase	Pollutant Emissions (pounds/day)[1]			
	NOx	CO	PM10	PM2.5
Site Preparation[2]	42.51	21.63	10.36	6.50
Grading[2]	26.48	16.15	7.83	4.55
Building Construction (Year 2021)	17.91	17.45	1.20	0.97
Combined Building Construction (Year 2021), Paving and Architectural Coatings	32.36	34.13	2.04	1.69
Maximum Daily Construction Emissions	**42.51**	**34.13**	**10.36**	**6.50**
SCAQMD Local Construction Thresholds[3]	**236**	**1,566**	**12**	**7**
Exceeds Threshold?	No	No	No	No

Notes:
[1] The Pollutant Emissions include 100% of the On-Site emissions (off-road equipment and fugitive dust) and 1/8 of the Off-Site emissions (on road trucks and worker vehicles), in order to account for the on-road emissions that occur within a ¼ mile of the project site.
[2] Site Preparation and Grading phases based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
[3] The nearest offsite sensitive receptors are multi-family residential located adjacent to the east side of the project site and Cortez Magnet School, located adjacent to the south side of the project site. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25 meter threshold.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for five acres in Air Monitoring Area 10, Pomona/Walnut Valley.

The data provided in Table L shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds during either demolition, grading, or the combined building construction, paving, and architectural coatings phases. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

Operational Emissions

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips, emissions from energy usage, and onsite area source emissions created from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to regional air quality and local air quality impacts with the on-going operations of the proposed project.

Operations-Related Regional Criteria Pollutant Analysis

The operations-related regional criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model and the input parameters utilized in this analysis have been detailed in Section 8.1. The worst-case summer or winter VOC, NOx, CO, SO_2, PM10, and PM2.5 daily emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table M and the CalEEMod daily emissions printouts are shown in Appendix A.

The data provided in Table M shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

Table M – Operational Regional Criteria Pollutant Emissions

	Pollutant Emissions (pounds/day)					
Emissions Source	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
Area Sources[1]	5.48	0.14	12.55	0.00	0.07	0.07
Energy Usage[2]	0.06	0.50	0.21	0.00	0.04	0.04
Mobile Sources[3]	1.40	7.37	17.95	0.06	5.26	1.44
Total Emissions	**6.94**	**7.37**	**30.71**	**0.06**	**5.37**	**1.55**
SCQAMD Operational Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consist of emissions from natural gas usage.
[3] Mobile sources consist of emissions from vehicles and road dust.
Source: Calculated from CalEEMod Version 2016.3.2 and CAPCOA, 1997.

Pursuant to the Sierra Club v. Friant Ranch Supreme Court Ruling (Case No. S219783, December 24, 2018), which found on page 6 of the ruling that EIRs need to "makes a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." Also, on page 24 of the ruling it states "The Court of Appeal identified several ways in which the EIR could have framed the analysis so as to adequately inform the public and decision makers of possible adverse health effects. The City could have, for example, identified the project's impact on the days of nonattainment per year."

Table M above shows that the primary source of operational air emissions would be created from mobile source emissions that would be generated throughout the Air Basin. As such, any adverse health impacts created from the proposed project should be assessed on a basin-wide level. As indicated above in Table B, the Air Basin has been designated by EPA for the national standards as a non-attainment area for ozone, PM2.5, and partial non-attainment for lead. In addition, PM10 has been designated by the State as non-attainment. It should be noted that VOC and NOx are ozone precursors, as such they have been considered as non-attainment pollutants. According to the 2016 AQMP, in 2016 the total emissions of: VOC was 500 tons per year; NOx was 522 tons per year; SOx was 18 tons per year; and PM2.5 was 66 tons per year. Since the 2016 AQMP did not calculate total PM10 emissions, the total PM10 emissions were obtained from *The California Almanac of Emissions and Air Quality 2013 Edition,* prepared by CARB, for the year 2020. The project contribution to each criteria pollutant in the South Coast Air Basin is shown in Table N.

Table N – Project's Contribution to Criteria Pollutants in the South Coast Air Basin

	Pollutant Emissions (pounds/day)					
Emissions Source	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
Project Emissions[1]	6.94	7.37	30.71	0.06	5.37	1.55
Total Emissions in Air Basin[2]	1,000,000	1,044,000	4,246,000	36,000	322,000	132,000
Project's Percent of Air Emissions	**0.0007%**	**0.0007%**	**0.0007%**	**0.0002%**	**0.0017%**	**0.0012%**
SCQAMD Operational Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] From the project's total operational emissions shown above in Table M.
[2] VOC, NOx, CO, SO_2 and PM2.5 from 2016 AQMP and PM10 from the California Almanac of Emissions and Air Quality 2013 Edition.

As shown in Table N, the project would increase criteria pollutant emissions by as much as 0.0017 percent for PM10 in the South Coast Air Basin. Due to these nominal increases in the Air Basin-wide criteria pollutant emissions, no increases in days of non-attainment are anticipated to occur from operation of the proposed project. As such, operation of the project is not anticipated to result in a quantitative increase in premature deaths, asthma in children, days children will miss school, asthma-related emergency room visits, or an increase in acute bronchitis among children due to the criteria pollutants created by the proposed project. Impacts would be less than significant.

Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analyzes the vehicular CO emissions and local impacts from on-site operations.

Local CO Hotspot Impacts from Project-Generated Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards of 20 ppm over one hour or 9 ppm over eight hours.

At the time of the 1993 Handbook, the Air Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Air Basin and in the state have steadily declined. In 2007, the Air Basin was designated in attainment for CO under both the CAAQS and NAAQS. SCAQMD conducted a CO hot spot analysis for attainment at the busiest intersections in Los Angeles[1] during the peak morning and afternoon periods and did not predict a violation of CO standards. Since the nearby intersections to the proposed project are much smaller with less traffic than what was analyzed by the SCAQMD, no local CO Hotspot are anticipated to be created from the proposed project and no CO Hotspot modeling was performed. Therefore, a less than significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

Local Criteria Pollutant Impacts from Onsite Operations

Project-related air emissions from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances may have the potential to create emissions areas that exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

The local air quality emissions from onsite operations were analyzed using the SCAQMD's Mass Rate LST Look-up Tables and the methodology described in LST Methodology. The Look-up Tables were developed

[1] The four intersections analyzed by the SCAQMD were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning and LOS F in the evening peak hour.

by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. Table N shows the onsite emissions from the CalEEMod model that includes area sources, energy usage, and vehicles operating in the immediate vicinity of the project site and the calculated emissions thresholds.

Table O – Operations-Related Local Criteria Pollutant Emissions

Onsite Emission Source	Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Area Sources[1]	0.14	12.55	0.07	0.07
Energy Usage[2]	0.50	0.21	0.04	0.04
Mobile Sources[3]	0.84	2.24	0.66	0.18
Total Emissions	**1.48**	**15.00**	**0.77**	**0.29**
SCAQMD Local Operational Thresholds[4]	**236**	**1,566**	**3**	**2**
Exceeds Threshold?	No	No	No	No

Notes:
[1] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consist of emissions from natural gas usage.
[3] Mobile sources based on 1/8 of the gross vehicular emissions, which is the estimated portion of vehicle emissions occurring within a quarter mile of the project site.
[4] The nearest offsite sensitive receptors are multi-family residential located adjacent to the east side of the project site and Cortez Magnet School, located adjacent to the south side of the project site. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25 meter threshold.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for five acres in Air Monitoring Area 10, Pomona/Walnut Valley.

The data provided in Table N shows that the on-going operations of the proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance discussed above in Section 9.2. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to onsite emissions and no mitigation would be required.

Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant.

Level of Significance

Less than significant impact.

10.4 Sensitive Receptors

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the proposed project, which may expose sensitive receptors to substantial concentrations have been calculated above in Section 10.3 for both construction and operations, which are discussed separately below. The discussion below also includes an analysis of the potential impacts from toxic air contaminant emissions. The nearest sensitive receptors to the project site include multi-family residential homes located adjacent to the east side of the project site and Cortez Magnet School, which is located adjacent to the south side of the project site.

Construction-Related Sensitive Receptor Impacts

The construction activities for the proposed project are anticipated to include site preparation and grading of the 7.47 acre project site, building construction of the 152 townhomes, paving of the onsite roads and parking areas and application of architectural coatings. Construction activities may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from toxic air contaminant emissions created from onsite construction equipment, which are described below.

Local Criteria Pollutant Impacts from Construction

The local air quality impacts from construction of the proposed project has been analyzed above in Section 10.3 and found that the construction of the proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance discussed above in Section 9.2. Therefore, construction of the proposed project would create a less than significant construction-related impact to local air quality and no mitigation would be required.

Toxic Air Contaminants Impacts from Construction

The greatest potential for toxic air contaminant emissions would be related to diesel particulate matter (DPM) emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of "individual cancer risk". "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. It should be noted that the most current cancer risk assessment methodology recommends analyzing a 30 year exposure period for the nearby sensitive receptors (OEHHA, 2015).

Given the relatively limited number of heavy-duty construction equipment, the varying distances that construction equipment would operate to the nearby sensitive receptors, and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 30 or 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. In addition, California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than five minutes, requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet's usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each fleet, and currently no commercial operator is allowed to purchase Tier 0 or Tier 1 equipment and by January 2023 no commercial operator is allowed to purchase Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023. As of January, 2019, 25 percent or more of all contractors' equipment fleets must be Tier 2 or higher. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project. As such, construction of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Operations-Related Sensitive Receptor Impacts

The on-going operations of the proposed project may expose sensitive receptors to substantial pollutant concentrations of local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from onsite operations. The following analyzes the vehicular CO emissions. Local criteria pollutant impacts from onsite operations, and toxic air contaminant impacts.

Local CO Hotspot Impacts from Project-Generated Vehicle Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential impacts to sensitive receptors. The analysis provided above in Section 9.3 shows that no local CO Hotspots are anticipated to be created at any nearby intersections from the vehicle traffic generated by the proposed project. Therefore, operation of the proposed project would result in a less than significant exposure of offsite sensitive receptors to substantial pollutant concentrations.

Local Criteria Pollutant Impacts from Onsite Operations

The local air quality impacts from the operation of the proposed project would occur from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances. The analysis provided above in Section 10.3 found that the operation of the proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance discussed above in Section 9.2. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

Operations-Related Toxic Air Contaminant Impacts

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas and according to *The California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips that are anticipated to be generated by the proposed project, a less than significant TAC impact would occur during the on-going operations of the proposed project and no mitigation would be required.

Therefore, operation of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Level of Significance

Less than significant impact.

10.5 Odor Emissions

The proposed project would not create objectionable odors affecting a substantial number of people. Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of

thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people that live and work in the immediate vicinity of the project site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality, this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration. Potential odor impacts have been analyzed separately for construction and operations below.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement, paints and solvents and from emissions from diesel equipment. The objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. Due to the transitory nature of construction odors, a less than significant odor impact would occur and no mitigation would be required.

Operations-Related Odor Impacts

The proposed project would consist of the development of a 152 townhomes. Potential sources that may emit odors during the on-going operations of the proposed project would primarily occur from the trash storage areas. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402 and City trash storage regulations, no significant impact related to odors would occur during the on-going operations of the proposed project. Therefore, a less than significant odor impact would occur and no mitigation would be required.

Level of Significance

Less than significant impact.

10.6 Energy Consumption

The proposed project would impact energy resources during construction and operation. Energy resources that would be potentially impacted include electricity, natural gas, and petroleum based fuel supplies and distribution systems. This analysis includes a discussion of the potential energy impacts of the proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. A general definition of each of these energy resources are provided below.

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network and, therefore, resource availability is typically not an issue. Natural gas satisfies almost one-third of the State's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. Natural gas is measured in terms of cubic feet.

Petroleum-based fuels currently account for a majority of the California's transportation energy sources and primarily consist of diesel and gasoline types of fuels. However, the state has been working on developing strategies to reduce petroleum use. Over the last decade California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce vehicle miles traveled (VMT). Accordingly, petroleum-based fuel consumption in California has declined.

The following section calculates the potential energy consumption associated with the construction and operations of the proposed project and provides a determination if any energy utilized by the proposed project is wasteful, inefficient, or unnecessary consumption of energy resources.

Construction Energy

The construction activities for the proposed project are anticipated to include site preparation and grading of the 7.47 acre project site, building construction of the 152 townhomes, paving of the onsite roads and parking areas and application of architectural coatings. The proposed project would consume energy resources during construction in three (3) general forms:

1. Petroleum-based fuels used to power off-road construction vehicles and equipment on the Project Site, construction worker travel to and from the Project Site, as well as delivery and haul truck trips (e.g. hauling of demolition material to off-site reuse and disposal facilities);
2. Electricity associated with the conveyance of water that would be used during Project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power; and,
3. Energy used in the production of construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

Construction-Related Electricity

During construction the proposed project would consume electricity to construct the new structures and infrastructure. Electricity would be supplied to the project site by Southern California Edison (SCE) and would be obtained from the existing electrical lines in the vicinity of the project site. The use of electricity from existing power lines rather than temporary diesel or gasoline powered generators would minimize impacts on energy use. Electricity consumed during project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities include electricity associated with the conveyance of water that would be used during project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power. Such electricity demand would be temporary, nominal, and would cease upon the completion of construction. Overall, construction activities associated with the proposed project would require limited

electricity consumption that would not be expected to have an adverse impact on available electricity supplies and infrastructure. Therefore, the use of electricity during project construction would not be wasteful, inefficient, or unnecessary.

Since the project site was formerly developed and there are power lines that run to the project site, it is anticipated that only nominal improvements would be required to SCE distribution lines and equipment with development of the proposed project. Where feasible, the new service installations and connections would be scheduled and implemented in a manner that would not result in electrical service interruptions to other properties. Compliance with City's guidelines and requirements would ensure that the proposed project fulfills its responsibilities relative to infrastructure installation, coordinates any electrical infrastructure removals or relocations, and limits any impacts associated with construction of the project. Construction of the project's electrical infrastructure is not anticipated to adversely affect the electrical infrastructure serving the surrounding uses or utility system capacity.

Construction-Related Natural Gas

Construction of the proposed project typically would not involve the consumption of natural gas. Natural gas would not be supplied to support construction activities, thus there would be no demand generated by construction. Since the project site is currently developed that currently has natural gas service to the project site, construction of the proposed project would be limited to installation of new natural gas connections within the project site. Development of the proposed project would likely not require extensive infrastructure improvements to serve the project site. Construction-related energy usage impacts associated with the installation of natural gas connections are expected to be confined to trenching in order to place the lines below surface. In addition, prior to ground disturbance, the proposed project would notify and coordinate with SoCalGas to identify the locations and depth of all existing gas lines and avoid disruption of gas service. Therefore, construction-related impacts to natural gas supply and infrastructure would be less than significant.

Construction-Related Petroleum Fuel Use

Petroleum-based fuel usage represents the highest amount of transportation energy potentially consumed during construction, which would utilized by both off-road equipment operating on the project site and on-road automobiles transporting workers to and from the project site and on-road trucks transporting equipment and supplies to the project site.

The off-road construction equipment fuel usage was calculated through use of the off-road equipment assumptions and fuel use assumptions shown above in Section 8.2, which found that the off-road equipment utilized during construction of the proposed Project would consume 36,969 gallons of fuel. The on-road construction trips fuel usage was calculated through use of the construction vehicle trip assumptions and fuel use assumptions shown above in Section 8.2, which found that the on-road trips generated from construction of the proposed Project would consume 26,584 gallons of fuel. As such, the combined fuel used from off-road construction equipment and on-road construction trips for the proposed Project would result in the consumption of 63,553 gallons of petroleum fuel.

Construction activities associated with the proposed project would be required to adhere to all State and SCAQMD regulations for off-road equipment and on-road trucks, which provide minimum fuel efficiency standards. As such, construction activities for the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy resources. Impacts regarding transportation energy would be less than significant. Development of the Project would not result in the need to manufacture

construction materials or create new building material facilities specifically to supply the proposed project. It is difficult to measure the energy used in the production of construction materials such as asphalt, steel, and concrete, it is reasonable to assume that the production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest of minimizing the cost of doing business.

Operational Energy

The on-going operation of the proposed project would require the use of energy resources for multiple purposes including, but not limited to, heating/ventilating/air conditioning (HVAC), refrigeration, lighting, appliances, and electronics. Energy would also be consumed during operations related to water usage, solid waste disposal, landscape equipment and vehicle trips.

Operations-Related Electricity

Operation of the proposed project would result in consumption of electricity at the project site. As detailed above in Section 8.2 the proposed project would consume 652,102 kilowatt-hours per year of electricity. It should be noted that, the proposed project would comply with all Federal, State, and City requirements related to the consumption of electricity, that includes CCR Title 24, Part 6 *Building Energy Efficiency Standards* and CCR Title 24, Part 11: *California Green Building Standards.* The CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the proposed buildings, including enhanced insulation, use of energy efficient lighting and appliances as well as requiring a variety of other energy-efficiency measures to be incorporated into all of the proposed structures. Therefore, it is anticipated the proposed project will be designed and built to minimize electricity use and that existing and planned electricity capacity and electricity supplies would be sufficient to support the proposed project's electricity demand. Thus, impacts with regard to electrical supply and infrastructure capacity would be less than significant and no mitigation measures would be required.

Operations-Related Natural Gas

Operation of the proposed project would result in increased consumption of natural gas at the project site. As detailed above in Section 8.3 the proposed project would consume 1,962 MBTU per year of natural gas. It should be noted that, the proposed project would comply with all Federal, State, and City requirements related to the consumption of natural gas, that includes CCR Title 24, Part 6 *Building Energy Efficiency Standards* and CCR Title 24, Part 11: *California Green Building Standards.* The CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the proposed structures, including enhanced insulation as well as use of efficient natural gas appliances and HVAC units. Therefore, it is anticipated the proposed project will be designed and built to minimize natural gas use and that existing and planned natural gas capacity and natural gas supplies would be sufficient to support the proposed project's natural gas demand. Thus, impacts with regard to natural gas supply and infrastructure capacity would be less than significant and no mitigation measures would be required.

Operations-Related Vehicular Petroleum Fuel Usage

Operation of the proposed project would result in increased consumption of petroleum-based fuels related to vehicular travel to and from the project site. As detailed above in Section 8.2 the proposed project would consume 89,308 gallons of petroleum fuel per year from vehicle travel. Therefore, it is anticipated the proposed project will be designed and built to minimize transportation energy through the promotion of the use of clean air vehicles, including electric-powered vehicles and it is anticipated

that existing and planned capacity and supplies of transportation fuels would be sufficient to support the proposed project's demand. Thus, impacts with regard transportation energy supply and infrastructure capacity would be less than significant and no mitigation measures would be required.

In conclusion, the proposed project would comply with regulatory compliance measures outlined by the State and City related to Air Quality, Greenhouse Gas Emissions (GHG), Transportation/Circulation, and Water Supply. Additionally, the proposed project would be constructed in accordance with all applicable City Building and Fire Codes. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.7 Energy Plan Consistency

The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The applicable energy plan for the proposed project is the *City of Pomona Energy Action Plan*, November 2012. The proposed project's consistency with the applicable energy-related policies in the General Plan are shown in Table P.

Table P – Proposed Project Compliance with City of Pomona Energy Action Plan Energy Policies

General Plan Energy Policy	Proposed Project Consistency with General Plan Policies
Goal 3 - New buildings will have no net impact on community energy demand.	**Consistent.** The proposed project is required to meet the 2019 Title 24, Part 6 standards that require all new projects to be net-natural.
Policy 3.1 - Work with project applicants through the plan review process to encourage the maximization of energy-efficient design of new buildings.	**Consistent.** The proposed project is required to meet the 2019 Title 24, Part 6 standards that require all new projects to be net-natural.
Policy 3.2 - Participate in a regional effort to implement energy efficiency standards for new development.	**Not Applicable.** This policy is only applicable to the City's development of regional programs.
Policy 3.3 - Encourage the use of energy-efficient appliances and equipment in new buildings.	**Consistent.** The proposed project will be consistent with the 2019 Title 20 standards for energy-efficient appliances and equipment.
Goal 4 - Encourage all new developments and significant remodels to be compatible with Title 24 and CAL Green Standards.	**Consistent.** The proposed project will be consistent with Title 24 and Gal Green Standards.
Policy 4.1 - Work with major educational facilities located in the City to be a model for energy efficiency and green building standards.	**Not Applicable.** This policy is only applicable to the City goals with educational facilities.
Goal 5 - Reduce community water consumption in new and existing development to conserve electricity and promote energy efficiency.	**Consistent.** The proposed project has been designed to reduce water consumption to conserve electricity and promote energy efficiency.
Policy 5.1 - Encourage water-efficient practices through educational efforts to promote the conservation of electricity for water pumping and treatment.	**Not Applicable.** This policy is only applicable to the City goals for water pumping and treatment.
Policy 5.2 - Support water-wise landscaping with drought-resistant species to reduce the electricity demand for water transport and treatment.	**Consistent.** The proposed project has been designed with drought-resistant species to reduce the electricity demand for water transport and treatment.

General Plan Energy Policy	Proposed Project Consistency with General Plan Policies
Goal 6 - Maximize use of shading and cooling to sustain a comfortable and energy-efficient urban environmental.	**Consistent**. The proposed project maximizes the use of shading with structures as well as the strategic planting of new trees to help with the urban environment.
Policy 6.1 - Maximize the cooling of buildings through tree planting and shading to reduce electricity demands.	**Consistent.** The proposed project's landscape plan includes tree planting that promote shading to reduce electricity demands.
Policy 6.2 - Reduce building electricity demands through voluntary standards and outreach to promote cool roofs and surfaces.	**Not Applicable.** This policy is only applicable to the City goals for voluntary standards and outreach.
Policy 6.3 - Incorporate use of groundcovers rather than pavement to reduce heat reflection.	**Consistent.** The proposed project's landscape plan includes groundcover were possible to reduce payment.

Source: City of Pomona, 2012.

As shown in Table P, the proposed project would be consistent with all applicable energy-related policies provided in the City's Energy Plan. Therefore, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.8 Generation of Greenhouse Gas Emissions

The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The proposed project would consist of development of an active senior living facility. The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste disposal, water usage, and construction equipment. The project's GHG emissions have been calculated with the CalEEMod model based on the construction and operational parameters detailed above in Section 8.1. A summary of the results is shown below in Table Q and the CalEEMod model run is provided in Appendix C.

Table Q – Project Related Greenhouse Gas Annual Emissions

	Greenhouse Gas Emissions (Metric Tons per Year)			
Category	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Area Sources[1]	2.56	0.00	0.00	2.62
Energy Usage[2]	312.45	0.01	0.00	313.81
Mobile Sources[3]	1,047.50	0.05	0.00	1,048.87
Solid Waste[4]	7.10	0.41	0.00	17.58
Water and Wastewater[5]	56.14	0.26	0.01	64.60
Construction[6]	20.44	0.00	0.00	20.52
Total GHG Emissions	**1,446.19**	**0.73**	**0.01**	**1,468.00**
SCAQMD Draft Threshold of Significance				**3,000**
Exceed Thresholds?				**No**

Notes:

[1] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscaping equipment.

[2] Energy usage consists of GHG emissions from electricity and natural gas usage.

[3] Mobile sources consist of GHG emissions from vehicles.
[4] Waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[5] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[6] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.
Source: CalEEMod Version 2016.3.2.

The data provided in Table Q shows that the proposed project would create 1,468.00 $MTCO_2e$ per year. According to the SCAQMD draft threshold of significance detailed above in Section 9.6, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations would exceed 3,000 $MTCO_2e$ per year. Therefore, a less than significant generation of greenhouse gas emissions would occur from development of the proposed project. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.9 Greenhouse Gas Plan Consistency

The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The proposed project consists of the development of 152 townhomes. As detailed above in Section 10.8, the proposed project is anticipated to generate 1,468.00 $MTCO_2e$ per year, which is well below the SCAQMD draft threshold of significance of 3,000 $MTCO_2e$ per year. The SCAQMD developed this threshold through a Working Group, which also developed detailed methodology for evaluating significance under CEQA. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual threshold of 3,000 $MTCO_2e$ for all land use type projects, which was based on substantial evidence supporting the use of the recommended thresholds. Therefore, the proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Level of Significance

Less than significant impact.

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APPENDIX A

CalEEMod Model Daily Printouts

Dudley Street Multi-Family

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.28	Acre	2.28	99,316.80	0
Condo/Townhouse High Rise	152.00	Dwelling Unit	5.19	235,128.00	435

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Dudley Street Multi-Family - Los Angeles-South Coast County, Summer

Project Characteristics -

Land Use - 152 Multi-Family Townhomes units on 5.19 acres and 235,128 square feet of building space. 2.28 acres of parking area

Construction Phase - Construction schedule provided by applicant

Trips and VMT - 6 vendor trips per day added to Site Preparation and Grading phases to account for Water Truck emissions

Vehicle Trips - Daily Trip Rates set to 5.45 per unit from TIA

Woodstoves - No wood stoves or fireplaces would be installed in project

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for SCAQMD Rule 403 minimum requirements

Mobile Land Use Mitigation - Increase Density to 20.3 DU/AC. Improve Pedestrian Network onsite and connecting offsite

Energy Mitigation - Exceed Title 24 by 7% selected to account for 2019 Title 24 requirements

Water Mitigation - Install low-flow faucets, toilets and showers and use water-efficient irrigation systems selected to account for Title 24 Part 11 requirements

Waste Mitigation - 50% reduction in solid waste to account for AB 341

Dudley Street Multi-Family - Los Angeles-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblFireplaces	NumberGas	129.20	0.00
tblFireplaces	NumberNoFireplace	15.20	152.00
tblFireplaces	NumberWood	7.60	0.00
tblLandUse	LandUseSquareFeet	152,000.00	235,128.00
tblLandUse	LotAcreage	2.38	5.19
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	33.00	34.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	151.00	152.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblVehicleTrips	ST_TR	4.31	5.45
tblVehicleTrips	SU_TR	3.43	5.45
tblVehicleTrips	WD_TR	4.18	5.45
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1807	43.1145	22.4690	0.0417	18.3059	2.2021	20.5080	9.9951	2.0260	12.0211	0.0000	4,063.0167	4,063.0167	1.2087	0.0000	4,093.2330
2021	50.3099	21.1810	23.5603	0.0530	1.9167	0.9791	2.8958	0.5133	0.9204	1.4336	0.0000	5,218.8882	5,218.8882	0.7221	0.0000	5,236.9401
2022	50.2874	1.4883	2.9284	6.2800e-003	0.3353	0.0843	0.4197	0.0889	0.0841	0.1731	0.0000	611.0618	611.0618	0.0274	0.0000	611.7473
Maximum	**50.3099**	**43.1145**	**23.5603**	**0.0530**	**18.3059**	**2.2021**	**20.5080**	**9.9951**	**2.0260**	**12.0211**	**0.0000**	**5,218.8882**	**5,218.8882**	**1.2087**	**0.0000**	**5,236.9401**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1807	43.1145	22.4690	0.0417	8.3694	2.2021	10.5715	4.5332	2.0260	6.5593	0.0000	4,063.0167	4,063.0167	1.2087	0.0000	4,093.2330
2021	50.3099	21.1810	23.5603	0.0530	1.9167	0.9791	2.8958	0.5133	0.9204	1.4336	0.0000	5,218.8882	5,218.8882	0.7221	0.0000	5,236.9401
2022	50.2874	1.4883	2.9284	6.2800e-003	0.3353	0.0843	0.4197	0.0889	0.0841	0.1731	0.0000	611.0618	611.0618	0.0274	0.0000	611.7473
Maximum	**50.3099**	**43.1145**	**23.5603**	**0.0530**	**8.3694**	**2.2021**	**10.5715**	**4.5332**	**2.0260**	**6.5593**	**0.0000**	**5,218.8882**	**5,218.8882**	**1.2087**	**0.0000**	**5,236.9401**

Dudley Street Multi-Family - Los Angeles-South Coast County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	48.33	0.00	41.71	51.54	0.00	40.08	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4806	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694	0.0000	22.5805	22.5805	0.0218	0.0000	23.1251
Energy	0.0602	0.5141	0.2188	3.2800e-003		0.0416	0.0416		0.0416	0.0416		656.3152	656.3152	0.0126	0.0120	660.2153
Mobile	1.4938	7.1518	20.3445	0.0740	6.0195	0.0597	6.0791	1.6109	0.0556	1.6666		7,532.7892	7,532.7892	0.3766		7,542.2039
Total	**7.0345**	**7.8107**	**33.1172**	**0.0780**	**6.0195**	**0.1706**	**6.1901**	**1.6109**	**0.1666**	**1.7775**	**0.0000**	**8,211.6848**	**8,211.6848**	**0.4110**	**0.0120**	**8,225.5444**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4806	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694	0.0000	22.5805	22.5805	0.0218	0.0000	23.1251
Energy	0.0580	0.4953	0.2108	3.1600e-003		0.0400	0.0400		0.0400	0.0400		632.2670	632.2670	0.0121	0.0116	636.0242
Mobile	1.4021	6.5872	17.9865	0.0646	5.2091	0.0523	5.2613	1.3940	0.0488	1.4428		6,573.2673	6,573.2673	0.3331		6,581.5942
Total	**6.9406**	**7.2273**	**30.7512**	**0.0684**	**5.2091**	**0.1617**	**5.3707**	**1.3940**	**0.1582**	**1.5522**	**0.0000**	**7,228.1148**	**7,228.1148**	**0.3670**	**0.0116**	**7,240.7435**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	1.33	7.47	7.14	12.26	13.46	5.23	13.24	13.46	5.05	12.68	0.00	11.98	11.98	10.70	3.66	11.97

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/20/2020	12/3/2020	5	10	
2	Grading	Grading	12/4/2020	12/31/2020	5	20	
3	Building Construction	Building Construction	1/1/2021	11/18/2021	5	230	
4	Paving	Paving	11/19/2021	12/16/2021	5	20	
5	Architectural Coating	Architectural Coating	12/17/2021	1/29/2022	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 2.28

Residential Indoor: 476,134; Residential Outdoor: 158,711; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 5,959 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	16.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	152.00	34.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	30.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0213	0.6382	0.1672	1.5600e-003	0.0384	3.0000e-003	0.0414	0.0111	2.8700e-003	0.0139		166.2148	166.2148	0.0101		166.4684
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.1042**	**0.6972**	**0.9553**	**3.6900e-003**	**0.2396**	**4.6800e-003**	**0.2443**	**0.0644**	**4.4200e-003**	**0.0688**		**377.9151**	**377.9151**	**0.0168**		**378.3356**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0213	0.6382	0.1672	1.5600e-003	0.0384	3.0000e-003	0.0414	0.0111	2.8700e-003	0.0139		166.2148	166.2148	0.0101		166.4684
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.1042**	**0.6972**	**0.9553**	**3.6900e-003**	**0.2396**	**4.6800e-003**	**0.2443**	**0.0644**	**4.4200e-003**	**0.0688**		**377.9151**	**377.9151**	**0.0168**		**378.3356**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5523**	**1.2734**	**7.8258**	**3.3675**	**1.1716**	**4.5390**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0213	0.6382	0.1672	1.5600e-003	0.0384	3.0000e-003	0.0414	0.0111	2.8700e-003	0.0139		166.2148	166.2148	0.0101		166.4684
Worker	0.0736	0.0524	0.7006	1.8900e-003	0.1788	1.4900e-003	0.1803	0.0474	1.3800e-003	0.0488		188.1781	188.1781	5.9300e-003		188.3264
Total	**0.0950**	**0.6906**	**0.8678**	**3.4500e-003**	**0.2173**	**4.4900e-003**	**0.2218**	**0.0585**	**4.2500e-003**	**0.0627**		**354.3929**	**354.3929**	**0.0161**		**354.7948**

3.3 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9486	0.0000	2.9486	1.5154	0.0000	1.5154			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**2.9486**	**1.2734**	**4.2220**	**1.5154**	**1.1716**	**2.6869**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0213	0.6382	0.1672	1.5600e-003	0.0384	3.0000e-003	0.0414	0.0111	2.8700e-003	0.0139		166.2148	166.2148	0.0101		166.4684
Worker	0.0736	0.0524	0.7006	1.8900e-003	0.1788	1.4900e-003	0.1803	0.0474	1.3800e-003	0.0488		188.1781	188.1781	5.9300e-003		188.3264
Total	**0.0950**	**0.6906**	**0.8678**	**3.4500e-003**	**0.2173**	**4.4900e-003**	**0.2218**	**0.0585**	**4.2500e-003**	**0.0627**		**354.3929**	**354.3929**	**0.0161**		**354.7948**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1034	3.3010	0.8630	8.7400e-003	0.2177	6.7500e-003	0.2244	0.0627	6.4600e-003	0.0691		934.5941	934.5941	0.0551		935.9706
Worker	0.6516	0.4479	6.1222	0.0174	1.6990	0.0137	1.7127	0.4506	0.0127	0.4632		1,730.9302	1,730.9302	0.0510		1,732.2052
Total	**0.7549**	**3.7489**	**6.9851**	**0.0261**	**1.9167**	**0.0205**	**1.9372**	**0.5133**	**0.0191**	**0.5324**		**2,665.5243**	**2,665.5243**	**0.1061**		**2,668.1759**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1034	3.3010	0.8630	8.7400e-003	0.2177	6.7500e-003	0.2244	0.0627	6.4600e-003	0.0691		934.5941	934.5941	0.0551		935.9706
Worker	0.6516	0.4479	6.1222	0.0174	1.6990	0.0137	1.7127	0.4506	0.0127	0.4632		1,730.9302	1,730.9302	0.0510		1,732.2052
Total	**0.7549**	**3.7489**	**6.9851**	**0.0261**	**1.9167**	**0.0205**	**1.9372**	**0.5133**	**0.0191**	**0.5324**		**2,665.5243**	**2,665.5243**	**0.1061**		**2,668.1759**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.2987					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5542**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0686	0.0471	0.6444	1.8300e-003	0.1788	1.4500e-003	0.1803	0.0474	1.3300e-003	0.0488		182.2032	182.2032	5.3700e-003		182.3374
Total	**0.0686**	**0.0471**	**0.6444**	**1.8300e-003**	**0.1788**	**1.4500e-003**	**0.1803**	**0.0474**	**1.3300e-003**	**0.0488**		**182.2032**	**182.2032**	**5.3700e-003**		**182.3374**

3.5 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.2987					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5542**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0686	0.0471	0.6444	1.8300e-003	0.1788	1.4500e-003	0.1803	0.0474	1.3300e-003	0.0488		182.2032	182.2032	5.3700e-003		182.3374
Total	**0.0686**	**0.0471**	**0.6444**	**1.8300e-003**	**0.1788**	**1.4500e-003**	**0.1803**	**0.0474**	**1.3300e-003**	**0.0488**		**182.2032**	**182.2032**	**5.3700e-003**		**182.3374**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.9624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**50.1813**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1286	0.0884	1.2083	3.4300e-003	0.3353	2.7100e-003	0.3380	0.0889	2.5000e-003	0.0914		341.6310	341.6310	0.0101		341.8826
Total	**0.1286**	**0.0884**	**1.2083**	**3.4300e-003**	**0.3353**	**2.7100e-003**	**0.3380**	**0.0889**	**2.5000e-003**	**0.0914**		**341.6310**	**341.6310**	**0.0101**		**341.8826**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.9624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**50.1813**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1286	0.0884	1.2083	3.4300e-003	0.3353	2.7100e-003	0.3380	0.0889	2.5000e-003	0.0914		341.6310	341.6310	0.0101		341.8826
Total	**0.1286**	**0.0884**	**1.2083**	**3.4300e-003**	**0.3353**	**2.7100e-003**	**0.3380**	**0.0889**	**2.5000e-003**	**0.0914**		**341.6310**	**341.6310**	**0.0101**		**341.8826**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.9624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**50.1670**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1205	0.0798	1.1148	3.3100e-003	0.3353	2.6200e-003	0.3380	0.0889	2.4200e-003	0.0914		329.6137	329.6137	9.1000e-003		329.8411
Total	**0.1205**	**0.0798**	**1.1148**	**3.3100e-003**	**0.3353**	**2.6200e-003**	**0.3380**	**0.0889**	**2.4200e-003**	**0.0914**		**329.6137**	**329.6137**	**9.1000e-003**		**329.8411**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.9624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**50.1670**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1205	0.0798	1.1148	3.3100e-003	0.3353	2.6200e-003	0.3380	0.0889	2.4200e-003	0.0914		329.6137	329.6137	9.1000e-003		329.8411
Total	**0.1205**	**0.0798**	**1.1148**	**3.3100e-003**	**0.3353**	**2.6200e-003**	**0.3380**	**0.0889**	**2.4200e-003**	**0.0914**		**329.6137**	**329.6137**	**9.1000e-003**		**329.8411**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.4021	6.5872	17.9865	0.0646	5.2091	0.0523	5.2613	1.3940	0.0488	1.4428		6,573.2673	6,573.2673	0.3331		6,581.5942
Unmitigated	1.4938	7.1518	20.3445	0.0740	6.0195	0.0597	6.0791	1.6109	0.0556	1.6666		7,532.7892	7,532.7892	0.3766		7,542.2039

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse High Rise	828.40	828.40	828.40	2,830,769	2,449,650
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	828.40	828.40	828.40	2,830,769	2,449,650

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse High Rise	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Other Asphalt Surfaces	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0580	0.4953	0.2108	3.1600e-003		0.0400	0.0400		0.0400	0.0400		632.2670	632.2670	0.0121	0.0116	636.0242
NaturalGas Unmitigated	0.0602	0.5141	0.2188	3.2800e-003		0.0416	0.0416		0.0416	0.0416		656.3152	656.3152	0.0126	0.0120	660.2153

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse High Rise	5578.68	0.0602	0.5141	0.2188	3.2800e-003		0.0416	0.0416		0.0416	0.0416		656.3152	656.3152	0.0126	0.0120	660.2153
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0602**	**0.5141**	**0.2188**	**3.2800e-003**		**0.0416**	**0.0416**		**0.0416**	**0.0416**		**656.3152**	**656.3152**	**0.0126**	**0.0120**	**660.2153**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse High Rise	5.37427	0.0580	0.4953	0.2108	3.1600e-003		0.0400	0.0400		0.0400	0.0400		632.2670	632.2670	0.0121	0.0116	636.0242
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0580**	**0.4953**	**0.2108**	**3.1600e-003**		**0.0400**	**0.0400**		**0.0400**	**0.0400**		**632.2670**	**632.2670**	**0.0121**	**0.0116**	**636.0242**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.4806	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694	0.0000	22.5805	22.5805	0.0218	0.0000	23.1251
Unmitigated	5.4806	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694	0.0000	22.5805	22.5805	0.0218	0.0000	23.1251

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4107					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.6907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3792	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694		22.5805	22.5805	0.0218		23.1251
Total	**5.4806**	**0.1448**	**12.5539**	**6.6000e-004**		**0.0694**	**0.0694**		**0.0694**	**0.0694**	**0.0000**	**22.5805**	**22.5805**	**0.0218**	**0.0000**	**23.1251**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4107					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.6907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3792	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694		22.5805	22.5805	0.0218		23.1251
Total	**5.4806**	**0.1448**	**12.5539**	**6.6000e-004**		**0.0694**	**0.0694**		**0.0694**	**0.0694**	**0.0000**	**22.5805**	**22.5805**	**0.0218**	**0.0000**	**23.1251**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Dudley Street Multi-Family

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.28	Acre	2.28	99,316.80	0
Condo/Townhouse High Rise	152.00	Dwelling Unit	5.19	235,128.00	435

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Dudley Street Multi-Family - Los Angeles-South Coast County, Winter

Project Characteristics -

Land Use - 152 Multi-Family Townhomes units on 5.19 acres and 235,128 square feet of building space. 2.28 acres of parking area

Construction Phase - Construction schedule provided by applicant

Trips and VMT - 6 vendor trips per day added to Site Preparation and Grading phases to account for Water Truck emissions

Vehicle Trips - Daily Trip Rates set to 5.45 per unit from TIA

Woodstoves - No wood stoves or fireplaces would be installed in project

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for SCAQMD Rule 403 minimum requirements

Mobile Land Use Mitigation - Increase Density to 20.3 DU/AC. Improve Pedestrian Network onsite and connecting offsite

Energy Mitigation - Exceed Title 24 by 7% selected to account for 2019 Title 24 requirements

Water Mitigation - Install low-flow faucets, toilets and showers and use water-efficient irrigation systems selected to account for Title 24 Part 11 requirements

Waste Mitigation - 50% reduction in solid waste to account for AB 341

Dudley Street Multi-Family - Los Angeles-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblFireplaces	NumberGas	129.20	0.00
tblFireplaces	NumberNoFireplace	15.20	152.00
tblFireplaces	NumberWood	7.60	0.00
tblLandUse	LandUseSquareFeet	152,000.00	235,128.00
tblLandUse	LotAcreage	2.38	5.19
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	33.00	34.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	151.00	152.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblVehicleTrips	ST_TR	4.31	5.45
tblVehicleTrips	SU_TR	3.43	5.45
tblVehicleTrips	WD_TR	4.18	5.45
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1908	43.1207	22.4199	0.0415	18.3059	2.2021	20.5080	9.9951	2.0261	12.0212	0.0000	4,046.1067	4,046.1067	1.2089	0.0000	4,076.3299
2021	50.3244	21.2221	23.1273	0.0518	1.9167	0.9793	2.8960	0.5133	0.9206	1.4338	0.0000	5,092.1604	5,092.1604	0.7227	0.0000	5,110.2267
2022	50.3013	1.4968	2.8311	6.0800e-003	0.3353	0.0843	0.4197	0.0889	0.0841	0.1731	0.0000	591.8189	591.8189	0.0269	0.0000	592.4906
Maximum	**50.3244**	**43.1207**	**23.1273**	**0.0518**	**18.3059**	**2.2021**	**20.5080**	**9.9951**	**2.0261**	**12.0212**	**0.0000**	**5,092.1604**	**5,092.1604**	**1.2089**	**0.0000**	**5,110.2267**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1908	43.1207	22.4199	0.0415	8.3694	2.2021	10.5716	4.5332	2.0261	6.5593	0.0000	4,046.1067	4,046.1067	1.2089	0.0000	4,076.3299
2021	50.3244	21.2221	23.1273	0.0518	1.9167	0.9793	2.8960	0.5133	0.9206	1.4338	0.0000	5,092.1604	5,092.1604	0.7227	0.0000	5,110.2267
2022	50.3013	1.4968	2.8311	6.0800e-003	0.3353	0.0843	0.4197	0.0889	0.0841	0.1731	0.0000	591.8189	591.8189	0.0269	0.0000	592.4906
Maximum	**50.3244**	**43.1207**	**23.1273**	**0.0518**	**8.3694**	**2.2021**	**10.5716**	**4.5332**	**2.0261**	**6.5593**	**0.0000**	**5,092.1604**	**5,092.1604**	**1.2089**	**0.0000**	**5,110.2267**

Dudley Street Multi-Family - Los Angeles-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	48.33	0.00	41.71	51.54	0.00	40.08	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4806	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694	0.0000	22.5805	22.5805	0.0218	0.0000	23.1251
Energy	0.0602	0.5141	0.2188	3.2800e-003		0.0416	0.0416		0.0416	0.0416		656.3152	656.3152	0.0126	0.0120	660.2153
Mobile	1.4498	7.3275	19.2751	0.0704	6.0195	0.0599	6.0794	1.6109	0.0559	1.6668		7,170.4292	7,170.4292	0.3753		7,179.8113
Total	**6.9905**	**7.9864**	**32.0478**	**0.0744**	**6.0195**	**0.1709**	**6.1904**	**1.6109**	**0.1669**	**1.7778**	**0.0000**	**7,849.3248**	**7,849.3248**	**0.4097**	**0.0120**	**7,863.1517**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4806	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694	0.0000	22.5805	22.5805	0.0218	0.0000	23.1251
Energy	0.0580	0.4953	0.2108	3.1600e-003		0.0400	0.0400		0.0400	0.0400		632.2670	632.2670	0.0121	0.0116	636.0242
Mobile	1.3604	6.7299	17.1393	0.0614	5.2091	0.0526	5.2616	1.3940	0.0490	1.4431		6,254.5703	6,254.5703	0.3329		6,262.8925
Total	**6.8989**	**7.3699**	**29.9040**	**0.0652**	**5.2091**	**0.1620**	**5.3710**	**1.3940**	**0.1584**	**1.5525**	**0.0000**	**6,909.4178**	**6,909.4178**	**0.3668**	**0.0116**	**6,922.0418**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.31**	**7.72**	**6.69**	**12.28**	**13.46**	**5.21**	**13.24**	**13.46**	**5.05**	**12.67**	**0.00**	**11.97**	**11.97**	**10.46**	**3.66**	**11.97**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/20/2020	12/3/2020	5	10	
2	Grading	Grading	12/4/2020	12/31/2020	5	20	
3	Building Construction	Building Construction	1/1/2021	11/18/2021	5	230	
4	Paving	Paving	11/19/2021	12/16/2021	5	20	
5	Architectural Coating	Architectural Coating	12/17/2021	1/29/2022	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 2.28

Residential Indoor: 476,134; Residential Outdoor: 158,711; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 5,959 (Architectural Coating – sqft)

OffRoad Equipment

Dudley Street Multi-Family - Los Angeles-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	16.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	152.00	34.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	30.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0223	0.6381	0.1844	1.5100e-003	0.0384	3.0500e-003	0.0415	0.0111	2.9200e-003	0.0140		161.6694	161.6694	0.0108		161.9397
Worker	0.0920	0.0652	0.7218	2.0000e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		199.3357	199.3357	6.2800e-003		199.4927
Total	**0.1143**	**0.7033**	**0.9063**	**3.5100e-003**	**0.2396**	**4.7300e-003**	**0.2443**	**0.0644**	**4.4700e-003**	**0.0689**		**361.0051**	**361.0051**	**0.0171**		**361.4325**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0223	0.6381	0.1844	1.5100e-003	0.0384	3.0500e-003	0.0415	0.0111	2.9200e-003	0.0140		161.6694	161.6694	0.0108		161.9397
Worker	0.0920	0.0652	0.7218	2.0000e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		199.3357	199.3357	6.2800e-003		199.4927
Total	**0.1143**	**0.7033**	**0.9063**	**3.5100e-003**	**0.2396**	**4.7300e-003**	**0.2443**	**0.0644**	**4.4700e-003**	**0.0689**		**361.0051**	**361.0051**	**0.0171**		**361.4325**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5523**	**1.2734**	**7.8258**	**3.3675**	**1.1716**	**4.5390**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0223	0.6381	0.1844	1.5100e-003	0.0384	3.0500e-003	0.0415	0.0111	2.9200e-003	0.0140		161.6694	161.6694	0.0108		161.9397
Worker	0.0818	0.0580	0.6416	1.7800e-003	0.1788	1.4900e-003	0.1803	0.0474	1.3800e-003	0.0488		177.1873	177.1873	5.5800e-003		177.3269
Total	**0.1041**	**0.6961**	**0.8261**	**3.2900e-003**	**0.2173**	**4.5400e-003**	**0.2218**	**0.0585**	**4.3000e-003**	**0.0628**		**338.8567**	**338.8567**	**0.0164**		**339.2666**

3.3 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9486	0.0000	2.9486	1.5154	0.0000	1.5154			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**2.9486**	**1.2734**	**4.2220**	**1.5154**	**1.1716**	**2.6869**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0223	0.6381	0.1844	1.5100e-003	0.0384	3.0500e-003	0.0415	0.0111	2.9200e-003	0.0140		161.6694	161.6694	0.0108		161.9397
Worker	0.0818	0.0580	0.6416	1.7800e-003	0.1788	1.4900e-003	0.1803	0.0474	1.3800e-003	0.0488		177.1873	177.1873	5.5800e-003		177.3269
Total	**0.1041**	**0.6961**	**0.8261**	**3.2900e-003**	**0.2173**	**4.5400e-003**	**0.2218**	**0.0585**	**4.3000e-003**	**0.0628**		**338.8567**	**338.8567**	**0.0164**		**339.2666**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1085	3.2942	0.9546	8.5100e-003	0.2177	6.9700e-003	0.2246	0.0627	6.6600e-003	0.0693		908.9748	908.9748	0.0587		910.4418
Worker	0.7248	0.4957	5.5975	0.0164	1.6990	0.0137	1.7127	0.4506	0.0127	0.4632		1,629.8217	1,629.8217	0.0480		1,631.0206
Total	**0.8333**	**3.7900**	**6.5521**	**0.0249**	**1.9167**	**0.0207**	**1.9374**	**0.5133**	**0.0193**	**0.5326**		**2,538.7965**	**2,538.7965**	**0.1066**		**2,541.4624**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1085	3.2942	0.9546	8.5100e-003	0.2177	6.9700e-003	0.2246	0.0627	6.6600e-003	0.0693		908.9748	908.9748	0.0587		910.4418
Worker	0.7248	0.4957	5.5975	0.0164	1.6990	0.0137	1.7127	0.4506	0.0127	0.4632		1,629.8217	1,629.8217	0.0480		1,631.0206
Total	**0.8333**	**3.7900**	**6.5521**	**0.0249**	**1.9167**	**0.0207**	**1.9374**	**0.5133**	**0.0193**	**0.5326**		**2,538.7965**	**2,538.7965**	**0.1066**		**2,541.4624**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.2987					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5542**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0522	0.5892	1.7200e-003	0.1788	1.4500e-003	0.1803	0.0474	1.3300e-003	0.0488		171.5602	171.5602	5.0500e-003		171.6864
Total	**0.0763**	**0.0522**	**0.5892**	**1.7200e-003**	**0.1788**	**1.4500e-003**	**0.1803**	**0.0474**	**1.3300e-003**	**0.0488**		**171.5602**	**171.5602**	**5.0500e-003**		**171.6864**

3.5 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.2987					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5542**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0522	0.5892	1.7200e-003	0.1788	1.4500e-003	0.1803	0.0474	1.3300e-003	0.0488		171.5602	171.5602	5.0500e-003		171.6864
Total	**0.0763**	**0.0522**	**0.5892**	**1.7200e-003**	**0.1788**	**1.4500e-003**	**0.1803**	**0.0474**	**1.3300e-003**	**0.0488**		**171.5602**	**171.5602**	**5.0500e-003**		**171.6864**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.9624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**50.1813**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1431	0.0978	1.1048	3.2300e-003	0.3353	2.7100e-003	0.3380	0.0889	2.5000e-003	0.0914		321.6753	321.6753	9.4700e-003		321.9120
Total	**0.1431**	**0.0978**	**1.1048**	**3.2300e-003**	**0.3353**	**2.7100e-003**	**0.3380**	**0.0889**	**2.5000e-003**	**0.0914**		**321.6753**	**321.6753**	**9.4700e-003**		**321.9120**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.9624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**50.1813**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1431	0.0978	1.1048	3.2300e-003	0.3353	2.7100e-003	0.3380	0.0889	2.5000e-003	0.0914		321.6753	321.6753	9.4700e-003		321.9120
Total	**0.1431**	**0.0978**	**1.1048**	**3.2300e-003**	**0.3353**	**2.7100e-003**	**0.3380**	**0.0889**	**2.5000e-003**	**0.0914**		**321.6753**	**321.6753**	**9.4700e-003**		**321.9120**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.9624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**50.1670**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1344	0.0884	1.0175	3.1100e-003	0.3353	2.6200e-003	0.3380	0.0889	2.4200e-003	0.0914		310.3708	310.3708	8.5500e-003		310.5845
Total	**0.1344**	**0.0884**	**1.0175**	**3.1100e-003**	**0.3353**	**2.6200e-003**	**0.3380**	**0.0889**	**2.4200e-003**	**0.0914**		**310.3708**	**310.3708**	**8.5500e-003**		**310.5845**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.9624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**50.1670**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1344	0.0884	1.0175	3.1100e-003	0.3353	2.6200e-003	0.3380	0.0889	2.4200e-003	0.0914		310.3708	310.3708	8.5500e-003		310.5845
Total	**0.1344**	**0.0884**	**1.0175**	**3.1100e-003**	**0.3353**	**2.6200e-003**	**0.3380**	**0.0889**	**2.4200e-003**	**0.0914**		**310.3708**	**310.3708**	**8.5500e-003**		**310.5845**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.3604	6.7299	17.1393	0.0614	5.2091	0.0526	5.2616	1.3940	0.0490	1.4431		6,254.5703	6,254.5703	0.3329		6,262.8925
Unmitigated	1.4498	7.3275	19.2751	0.0704	6.0195	0.0599	6.0794	1.6109	0.0559	1.6668		7,170.4292	7,170.4292	0.3753		7,179.8113

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse High Rise	828.40	828.40	828.40	2,830,769	2,449,650
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	828.40	828.40	828.40	2,830,769	2,449,650

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse High Rise	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Other Asphalt Surfaces	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0580	0.4953	0.2108	3.1600e-003		0.0400	0.0400		0.0400	0.0400		632.2670	632.2670	0.0121	0.0116	636.0242
NaturalGas Unmitigated	0.0602	0.5141	0.2188	3.2800e-003		0.0416	0.0416		0.0416	0.0416		656.3152	656.3152	0.0126	0.0120	660.2153

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse High Rise	5578.68	0.0602	0.5141	0.2188	3.2800e-003		0.0416	0.0416		0.0416	0.0416		656.3152	656.3152	0.0126	0.0120	660.2153
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0602**	**0.5141**	**0.2188**	**3.2800e-003**		**0.0416**	**0.0416**		**0.0416**	**0.0416**		**656.3152**	**656.3152**	**0.0126**	**0.0120**	**660.2153**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse High Rise	5.37427	0.0580	0.4953	0.2108	3.1600e-003		0.0400	0.0400		0.0400	0.0400		632.2670	632.2670	0.0121	0.0116	636.0242
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0580**	**0.4953**	**0.2108**	**3.1600e-003**		**0.0400**	**0.0400**		**0.0400**	**0.0400**		**632.2670**	**632.2670**	**0.0121**	**0.0116**	**636.0242**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.4806	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694	0.0000	22.5805	22.5805	0.0218	0.0000	23.1251
Unmitigated	5.4806	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694	0.0000	22.5805	22.5805	0.0218	0.0000	23.1251

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4107					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.6907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3792	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694		22.5805	22.5805	0.0218		23.1251
Total	**5.4806**	**0.1448**	**12.5539**	**6.6000e-004**		**0.0694**	**0.0694**		**0.0694**	**0.0694**	**0.0000**	**22.5805**	**22.5805**	**0.0218**	**0.0000**	**23.1251**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4107					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.6907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3792	0.1448	12.5539	6.6000e-004		0.0694	0.0694		0.0694	0.0694		22.5805	22.5805	0.0218		23.1251
Total	**5.4806**	**0.1448**	**12.5539**	**6.6000e-004**		**0.0694**	**0.0694**		**0.0694**	**0.0694**	**0.0000**	**22.5805**	**22.5805**	**0.0218**	**0.0000**	**23.1251**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

EMFAC2017 Model Printouts

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: Air Basin
Region: SOUTH COAST
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Yea	Vehicle Cat	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consump	Miles per gallon
SOUTH CO/	2021	HHDT	Aggregated	Aggregated	GAS	81	7629	1628	1.9	
SOUTH CO/	2021	LDA	Aggregated	Aggregated	GAS	6276234	246181276	29647186	8195.8	30.0
SOUTH CO/	2021	LDT1	Aggregated	Aggregated	GAS	695146	26066042	3200417	1009.6	25.8
SOUTH CO/	2021	LDT2	Aggregated	Aggregated	GAS	2144804	81991236	10052342	3441.7	23.8
SOUTH CO/	2021	LHDT1	Aggregated	Aggregated	GAS	172430	6230805	2568953	598.1	
SOUTH CO/	2021	LHDT2	Aggregated	Aggregated	GAS	28914	1014315	430773	111.8	
SOUTH CO/	2021	MCY	Aggregated	Aggregated	GAS	279209	1958677	558419	53.9	
SOUTH CO/	2021	MDV	Aggregated	Aggregated	GAS	1520877	54421173	7026646	2808.6	
SOUTH CO/	2021	MH	Aggregated	Aggregated	GAS	34556	327721	3457	64.5	
SOUTH CO/	2021	MHDT	Aggregated	Aggregated	GAS	24684	1325210	493870	264.5	
SOUTH CO/	2021	OBUS	Aggregated	Aggregated	GAS	5845	246477	116955	49.6	
SOUTH CO/	2021	SBUS	Aggregated	Aggregated	GAS	2415	98099	9660	10.9	
SOUTH CO/	2021	UBUS	Aggregated	Aggregated	GAS	944	88729	3776	18.5	

Worker and Resident Trips Miles per Gallon (LDA 50%, LDT1 25% and LDT2 25%)* **27.4**

* Vehicle Mix breakdown obtained from Section 4.3.5 of CalEEMod User Guide

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: Air Basin
Region: SOUTH COAST
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	Fuel Consumption
SOUTH CO/	2021	HHDT	Aggregatec	Aggregatec	DSL	96727	11545820	974406	1774
SOUTH CO/	2021	LDA	Aggregatec	Aggregatec	DSL	53710	2185239	254840	46
SOUTH CO/	2021	LDT1	Aggregatec	Aggregatec	DSL	406	9520	1420	0
SOUTH CO/	2021	LDT2	Aggregatec	Aggregatec	DSL	12472	548394	61718	16
SOUTH CO/	2021	LHDT1	Aggregatec	Aggregatec	DSL	109610	4489670	1378756	211
SOUTH CO/	2021	LHDT2	Aggregatec	Aggregatec	DSL	43242	1730629	543933	90
SOUTH CO/	2021	MDV	Aggregatec	Aggregatec	DSL	29604	1222112	145605	46
SOUTH CO/	2021	MH	Aggregatec	Aggregatec	DSL	11829	115366	1183	11
SOUTH CO/	2021	MHDT	Aggregatec	Aggregatec	DSL	119075	7535147	1192855	727
SOUTH CO/	2021	OBUS	Aggregatec	Aggregatec	DSL	4131	308887	40390	38
SOUTH CO/	2021	SBUS	Aggregatec	Aggregatec	DSL	6314	199477	72863	27
SOUTH CO/	2021	UBUS	Aggregatec	Aggregatec	DSL	14	1478	57	0

Diesel Truck (HHDT, MDV, MHDT) vehicle miles per day	20,303,080	2,548	1,000 gall per day
		2,547,681	gallons per day
Diesel Truck Fleet Avg Miles per gallon	8.0		

APPENDIX C

CalEEMod Model Annual Printouts

Dudley Street Multi-Family

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.28	Acre	2.28	99,316.80	0
Condo/Townhouse High Rise	152.00	Dwelling Unit	5.19	235,128.00	435

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Dudley Street Multi-Family - Los Angeles-South Coast County, Annual

Project Characteristics -

Land Use - 152 Multi-Family Townhomes units on 5.19 acres and 235,128 square feet of building space. 2.28 acres of parking area

Construction Phase - Construction schedule provided by applicant

Trips and VMT - 6 vendor trips per day added to Site Preparation and Grading phases to account for Water Truck emissions

Vehicle Trips - Daily Trip Rates set to 5.45 per unit from TIA

Woodstoves - No wood stoves or fireplaces would be installed in project

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for SCAQMD Rule 403 minimum requirements

Mobile Land Use Mitigation - Increase Density to 20.3 DU/AC. Improve Pedestrian Network onsite and connecting offsite

Energy Mitigation - Exceed Title 24 by 7% selected to account for 2019 Title 24 requirements

Water Mitigation - Install low-flow faucets, toilets and showers and use water-efficient irrigation systems selected to account for Title 24 Part 11 requirements

Waste Mitigation - 50% reduction in solid waste to account for AB 341

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Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblFireplaces	NumberGas	129.20	0.00
tblFireplaces	NumberNoFireplace	15.20	152.00
tblFireplaces	NumberWood	7.60	0.00
tblLandUse	LandUseSquareFeet	152,000.00	235,128.00
tblLandUse	LotAcreage	2.38	5.19
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	33.00	34.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	151.00	152.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblVehicleTrips	ST_TR	4.31	5.45
tblVehicleTrips	SU_TR	3.43	5.45
tblVehicleTrips	WD_TR	4.18	5.45
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0462	0.4866	0.2810	5.4000e-004	0.1592	0.0238	0.1830	0.0842	0.0219	0.1061	0.0000	47.5633	47.5633	0.0141	0.0000	47.9147
2021	0.5989	2.5878	2.8406	6.2800e-003	0.2197	0.1199	0.3397	0.0589	0.1126	0.1716	0.0000	560.2675	560.2675	0.0819	0.0000	562.3158
2022	0.5029	0.0150	0.0286	6.0000e-005	3.2900e-003	8.4000e-004	4.1300e-003	8.7000e-004	8.4000e-004	1.7100e-003	0.0000	5.4157	5.4157	2.5000e-004	0.0000	5.4218
Maximum	**0.5989**	**2.5878**	**2.8406**	**6.2800e-003**	**0.2197**	**0.1199**	**0.3397**	**0.0842**	**0.1126**	**0.1716**	**0.0000**	**560.2675**	**560.2675**	**0.0819**	**0.0000**	**562.3158**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0462	0.4866	0.2810	5.4000e-004	0.0734	0.0238	0.0972	0.0384	0.0219	0.0603	0.0000	47.5633	47.5633	0.0141	0.0000	47.9147
2021	0.5989	2.5878	2.8406	6.2800e-003	0.2197	0.1199	0.3397	0.0589	0.1126	0.1716	0.0000	560.2671	560.2671	0.0819	0.0000	562.3154
2022	0.5029	0.0150	0.0286	6.0000e-005	3.2900e-003	8.4000e-004	4.1300e-003	8.7000e-004	8.4000e-004	1.7100e-003	0.0000	5.4157	5.4157	2.5000e-004	0.0000	5.4218
Maximum	**0.5989**	**2.5878**	**2.8406**	**6.2800e-003**	**0.2197**	**0.1199**	**0.3397**	**0.0589**	**0.1126**	**0.1716**	**0.0000**	**560.2671**	**560.2671**	**0.0819**	**0.0000**	**562.3154**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**22.43**	**0.00**	**16.27**	**31.82**	**0.00**	**16.40**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**11-1-2020**	**1-31-2021**	0.7979	0.7979
2	**2-1-2021**	**4-30-2021**	0.7602	0.7602
3	**5-1-2021**	**7-31-2021**	0.7832	0.7832
4	**8-1-2021**	**10-31-2021**	0.7845	0.7845
5	**11-1-2021**	**1-31-2022**	1.1148	1.1148
		Highest	1.1148	1.1148

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9784	0.0181	1.5692	8.0000e-005		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003	0.0000	2.5606	2.5606	2.4700e-003	0.0000	2.6223
Energy	0.0110	0.0938	0.0399	6.0000e-004		7.5900e-003	7.5900e-003		7.5900e-003	7.5900e-003	0.0000	317.2905	317.2905	0.0107	3.7700e-003	318.6826
Mobile	0.2579	1.3584	3.5598	0.0130	1.0744	0.0109	1.0853	0.2880	0.0101	0.2981	0.0000	1,200.4668	1,200.4668	0.0617	0.0000	1,202.0099
Waste						0.0000	0.0000		0.0000	0.0000	14.1931	0.0000	14.1931	0.8388	0.0000	35.1629
Water						0.0000	0.0000		0.0000	0.0000	3.1419	63.1881	66.3300	0.3253	8.1600e-003	76.8943
Total	**1.2473**	**1.4703**	**5.1690**	**0.0137**	**1.0744**	**0.0271**	**1.1015**	**0.2880**	**0.0264**	**0.3144**	**17.3350**	**1,583.5060**	**1,600.8410**	**1.2390**	**0.0119**	**1,635.3720**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9784	0.0181	1.5692	8.0000e-005		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003	0.0000	2.5606	2.5606	2.4700e-003	0.0000	2.6223
Energy	0.0106	0.0904	0.0385	5.8000e-004		7.3100e-003	7.3100e-003		7.3100e-003	7.3100e-003	0.0000	312.4526	312.4526	0.0106	3.6900e-003	313.8180
Mobile	0.2415	1.2474	3.1605	0.0113	0.9298	9.5200e-003	0.9393	0.2492	8.8800e-003	0.2581	0.0000	1,047.5004	1,047.5004	0.0547	0.0000	1,048.8674
Waste						0.0000	0.0000		0.0000	0.0000	7.0966	0.0000	7.0966	0.4194	0.0000	17.5814
Water						0.0000	0.0000		0.0000	0.0000	2.5135	53.6225	56.1360	0.2604	6.5500e-003	64.5985
Total	**1.2305**	**1.3559**	**4.7682**	**0.0120**	**0.9298**	**0.0255**	**0.9553**	**0.2492**	**0.0249**	**0.2741**	**9.6101**	**1,416.1361**	**1,425.7462**	**0.7475**	**0.0102**	**1,447.4877**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.35**	**7.78**	**7.75**	**12.28**	**13.46**	**6.01**	**13.28**	**13.47**	**5.83**	**12.82**	**44.56**	**10.57**	**10.94**	**39.67**	**14.17**	**11.49**

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/20/2020	12/3/2020	5	10	
2	Grading	Grading	12/4/2020	12/31/2020	5	20	
3	Building Construction	Building Construction	1/1/2021	11/18/2021	5	230	
4	Paving	Paving	11/19/2021	12/16/2021	5	20	
5	Architectural Coating	Architectural Coating	12/17/2021	1/29/2022	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 2.28

Residential Indoor: 476,134; Residential Outdoor: 158,711; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 5,959 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	16.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	152.00	34.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	30.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.2500e-003	8.8000e-004	1.0000e-005	1.9000e-004	2.0000e-005	2.0000e-004	5.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.7453	0.7453	5.0000e-005	0.0000	0.7465
Worker	4.2000e-004	3.4000e-004	3.7000e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9192	0.9192	3.0000e-005	0.0000	0.9199
Total	**5.3000e-004**	**3.5900e-003**	**4.5800e-003**	**2.0000e-005**	**1.1800e-003**	**3.0000e-005**	**1.1900e-003**	**3.1000e-004**	**2.0000e-005**	**3.4000e-004**	**0.0000**	**1.6645**	**1.6645**	**8.0000e-005**	**0.0000**	**1.6664**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0407**	**0.0110**	**0.0516**	**0.0223**	**0.0101**	**0.0325**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.2500e-003	8.8000e-004	1.0000e-005	1.9000e-004	2.0000e-005	2.0000e-004	5.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.7453	0.7453	5.0000e-005	0.0000	0.7465
Worker	4.2000e-004	3.4000e-004	3.7000e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9192	0.9192	3.0000e-005	0.0000	0.9199
Total	**5.3000e-004**	**3.5900e-003**	**4.5800e-003**	**2.0000e-005**	**1.1800e-003**	**3.0000e-005**	**1.1900e-003**	**3.1000e-004**	**2.0000e-005**	**3.4000e-004**	**0.0000**	**1.6645**	**1.6645**	**8.0000e-005**	**0.0000**	**1.6664**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2639	0.1605	3.0000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	26.0588	26.0588	8.4300e-003	0.0000	26.2694
Total	**0.0243**	**0.2639**	**0.1605**	**3.0000e-004**	**0.0655**	**0.0127**	**0.0783**	**0.0337**	**0.0117**	**0.0454**	**0.0000**	**26.0588**	**26.0588**	**8.4300e-003**	**0.0000**	**26.2694**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-004	6.5000e-003	1.7600e-003	2.0000e-005	3.8000e-004	3.0000e-005	4.1000e-004	1.1000e-004	3.0000e-005	1.4000e-004	0.0000	1.4906	1.4906	9.0000e-005	0.0000	1.4929
Worker	7.4000e-004	6.0000e-004	6.5900e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6342	1.6342	5.0000e-005	0.0000	1.6355
Total	**9.6000e-004**	**7.1000e-003**	**8.3500e-003**	**4.0000e-005**	**2.1300e-003**	**4.0000e-005**	**2.1800e-003**	**5.8000e-004**	**4.0000e-005**	**6.2000e-004**	**0.0000**	**3.1247**	**3.1247**	**1.4000e-004**	**0.0000**	**3.1284**

3.3 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0295	0.0000	0.0295	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2639	0.1605	3.0000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	26.0587	26.0587	8.4300e-003	0.0000	26.2694
Total	**0.0243**	**0.2639**	**0.1605**	**3.0000e-004**	**0.0295**	**0.0127**	**0.0422**	**0.0152**	**0.0117**	**0.0269**	**0.0000**	**26.0587**	**26.0587**	**8.4300e-003**	**0.0000**	**26.2694**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-004	6.5000e-003	1.7600e-003	2.0000e-005	3.8000e-004	3.0000e-005	4.1000e-004	1.1000e-004	3.0000e-005	1.4000e-004	0.0000	1.4906	1.4906	9.0000e-005	0.0000	1.4929
Worker	7.4000e-004	6.0000e-004	6.5900e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6342	1.6342	5.0000e-005	0.0000	1.6355
Total	**9.6000e-004**	**7.1000e-003**	**8.3500e-003**	**4.0000e-005**	**2.1300e-003**	**4.0000e-005**	**2.1800e-003**	**5.8000e-004**	**4.0000e-005**	**6.2000e-004**	**0.0000**	**3.1247**	**3.1247**	**1.4000e-004**	**0.0000**	**3.1284**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2186	2.0047	1.9062	3.1000e-003		0.1102	0.1102		0.1037	0.1037	0.0000	266.3829	266.3829	0.0643	0.0000	267.9895
Total	**0.2186**	**2.0047**	**1.9062**	**3.1000e-003**		**0.1102**	**0.1102**		**0.1037**	**0.1037**	**0.0000**	**266.3829**	**266.3829**	**0.0643**	**0.0000**	**267.9895**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0121	0.3859	0.1046	9.9000e-004	0.0246	7.9000e-004	0.0254	7.1100e-003	7.5000e-004	7.8600e-003	0.0000	96.3802	96.3802	5.9100e-003	0.0000	96.5280
Worker	0.0752	0.0586	0.6610	1.9100e-003	0.1916	1.5800e-003	0.1931	0.0509	1.4500e-003	0.0523	0.0000	172.8627	172.8627	5.0900e-003	0.0000	172.9899
Total	**0.0874**	**0.4444**	**0.7656**	**2.9000e-003**	**0.2162**	**2.3700e-003**	**0.2185**	**0.0580**	**2.2000e-003**	**0.0602**	**0.0000**	**269.2429**	**269.2429**	**0.0110**	**0.0000**	**269.5178**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2186	2.0047	1.9062	3.1000e-003		0.1102	0.1102		0.1037	0.1037	0.0000	266.3826	266.3826	0.0643	0.0000	267.9892
Total	**0.2186**	**2.0047**	**1.9062**	**3.1000e-003**		**0.1102**	**0.1102**		**0.1037**	**0.1037**	**0.0000**	**266.3826**	**266.3826**	**0.0643**	**0.0000**	**267.9892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0121	0.3859	0.1046	9.9000e-004	0.0246	7.9000e-004	0.0254	7.1100e-003	7.5000e-004	7.8600e-003	0.0000	96.3802	96.3802	5.9100e-003	0.0000	96.5280
Worker	0.0752	0.0586	0.6610	1.9100e-003	0.1916	1.5800e-003	0.1931	0.0509	1.4500e-003	0.0523	0.0000	172.8627	172.8627	5.0900e-003	0.0000	172.9899
Total	**0.0874**	**0.4444**	**0.7656**	**2.9000e-003**	**0.2162**	**2.3700e-003**	**0.2185**	**0.0580**	**2.2000e-003**	**0.0602**	**0.0000**	**269.2429**	**269.2429**	**0.0110**	**0.0000**	**269.5178**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	2.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0156**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.4000e-004	6.0500e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5823	1.5823	5.0000e-005	0.0000	1.5834
Total	**6.9000e-004**	**5.4000e-004**	**6.0500e-003**	**2.0000e-005**	**1.7500e-003**	**1.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5823**	**1.5823**	**5.0000e-005**	**0.0000**	**1.5834**

3.5 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	2.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0156**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.4000e-004	6.0500e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5823	1.5823	5.0000e-005	0.0000	1.5834
Total	**6.9000e-004**	**5.4000e-004**	**6.0500e-003**	**2.0000e-005**	**1.7500e-003**	**1.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5823**	**1.5823**	**5.0000e-005**	**0.0000**	**1.5834**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2748					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	8.4000e-003	0.0100	2.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	1.4043	1.4043	1.0000e-004	0.0000	1.4067
Total	**0.2760**	**8.4000e-003**	**0.0100**	**2.0000e-005**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**1.4043**	**1.4043**	**1.0000e-004**	**0.0000**	**1.4067**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	5.5000e-004	6.2400e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.6317	1.6317	5.0000e-005	0.0000	1.6329
Total	**7.1000e-004**	**5.5000e-004**	**6.2400e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.6317**	**1.6317**	**5.0000e-005**	**0.0000**	**1.6329**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2748					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	8.4000e-003	0.0100	2.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	1.4043	1.4043	1.0000e-004	0.0000	1.4067
Total	**0.2760**	**8.4000e-003**	**0.0100**	**2.0000e-005**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**1.4043**	**1.4043**	**1.0000e-004**	**0.0000**	**1.4067**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	5.5000e-004	6.2400e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.6317	1.6317	5.0000e-005	0.0000	1.6329
Total	**7.1000e-004**	**5.5000e-004**	**6.2400e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.6317**	**1.6317**	**5.0000e-005**	**0.0000**	**1.6329**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4996					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.5017**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2100e-003	9.1000e-004	0.0105	3.0000e-005	3.2900e-003	3.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.8625	2.8625	8.0000e-005	0.0000	2.8644
Total	**1.2100e-003**	**9.1000e-004**	**0.0105**	**3.0000e-005**	**3.2900e-003**	**3.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.8625**	**2.8625**	**8.0000e-005**	**0.0000**	**2.8644**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4996					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.5017**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2100e-003	9.1000e-004	0.0105	3.0000e-005	3.2900e-003	3.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.8625	2.8625	8.0000e-005	0.0000	2.8644
Total	**1.2100e-003**	**9.1000e-004**	**0.0105**	**3.0000e-005**	**3.2900e-003**	**3.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.8625**	**2.8625**	**8.0000e-005**	**0.0000**	**2.8644**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2415	1.2474	3.1605	0.0113	0.9298	9.5200e-003	0.9393	0.2492	8.8800e-003	0.2581	0.0000	1,047.5004	1,047.5004	0.0547	0.0000	1,048.8674
Unmitigated	0.2579	1.3584	3.5598	0.0130	1.0744	0.0109	1.0853	0.2880	0.0101	0.2981	0.0000	1,200.4668	1,200.4668	0.0617	0.0000	1,202.0099

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse High Rise	828.40	828.40	828.40	2,830,769	2,449,650
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	828.40	828.40	828.40	2,830,769	2,449,650

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse High Rise	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Other Asphalt Surfaces	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	207.7737	207.7737	8.5800e-003	1.7700e-003	208.5170
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	208.6302	208.6302	8.6100e-003	1.7800e-003	209.3766
NaturalGas Mitigated	0.0106	0.0904	0.0385	5.8000e-004		7.3100e-003	7.3100e-003		7.3100e-003	7.3100e-003	0.0000	104.6789	104.6789	2.0100e-003	1.9200e-003	105.3010
NaturalGas Unmitigated	0.0110	0.0938	0.0399	6.0000e-004		7.5900e-003	7.5900e-003		7.5900e-003	7.5900e-003	0.0000	108.6603	108.6603	2.0800e-003	1.9900e-003	109.3061

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse High Rise	2.03622e+006	0.0110	0.0938	0.0399	6.0000e-004		7.5900e-003	7.5900e-003		7.5900e-003	7.5900e-003	0.0000	108.6603	108.6603	2.0800e-003	1.9900e-003	109.3061
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0110**	**0.0938**	**0.0399**	**6.0000e-004**		**7.5900e-003**	**7.5900e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**108.6603**	**108.6603**	**2.0800e-003**	**1.9900e-003**	**109.3061**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse High Rise	1.96161e+006	0.0106	0.0904	0.0385	5.8000e-004		7.3100e-003	7.3100e-003		7.3100e-003	7.3100e-003	0.0000	104.6789	104.6789	2.0100e-003	1.9200e-003	105.3010
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0106**	**0.0904**	**0.0385**	**5.8000e-004**		**7.3100e-003**	**7.3100e-003**		**7.3100e-003**	**7.3100e-003**	**0.0000**	**104.6789**	**104.6789**	**2.0100e-003**	**1.9200e-003**	**105.3010**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse High Rise	654790	208.6302	8.6100e-003	1.7800e-003	209.3766
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**208.6302**	**8.6100e-003**	**1.7800e-003**	**209.3766**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse High Rise	652102	207.7737	8.5800e-003	1.7700e-003	208.5170
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**207.7737**	**8.5800e-003**	**1.7700e-003**	**208.5170**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9784	0.0181	1.5692	8.0000e-005		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003	0.0000	2.5606	2.5606	2.4700e-003	0.0000	2.6223
Unmitigated	0.9784	0.0181	1.5692	8.0000e-005		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003	0.0000	2.5606	2.5606	2.4700e-003	0.0000	2.6223

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0749					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8561					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0474	0.0181	1.5692	8.0000e-005		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003	0.0000	2.5606	2.5606	2.4700e-003	0.0000	2.6223
Total	**0.9784**	**0.0181**	**1.5692**	**8.0000e-005**		**8.6700e-003**	**8.6700e-003**		**8.6700e-003**	**8.6700e-003**	**0.0000**	**2.5606**	**2.5606**	**2.4700e-003**	**0.0000**	**2.6223**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0749					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8561					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0474	0.0181	1.5692	8.0000e-005		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003	0.0000	2.5606	2.5606	2.4700e-003	0.0000	2.6223
Total	**0.9784**	**0.0181**	**1.5692**	**8.0000e-005**		**8.6700e-003**	**8.6700e-003**		**8.6700e-003**	**8.6700e-003**	**0.0000**	**2.5606**	**2.5606**	**2.4700e-003**	**0.0000**	**2.6223**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	56.1360	0.2604	6.5500e-003	64.5985
Unmitigated	66.3300	0.3253	8.1600e-003	76.8943

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse High Rise	9.90341 / 6.24346	66.3300	0.3253	8.1600e-003	76.8943
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**66.3300**	**0.3253**	**8.1600e-003**	**76.8943**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse High Rise	7.92273 / 5.8626	56.1360	0.2604	6.5500e-003	64.5985
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**56.1360**	**0.2604**	**6.5500e-003**	**64.5985**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.0966	0.4194	0.0000	17.5814
Unmitigated	14.1931	0.8388	0.0000	35.1629

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse High Rise	69.92	14.1931	0.8388	0.0000	35.1629
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**14.1931**	**0.8388**	**0.0000**	**35.1629**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse High Rise	34.96	7.0966	0.4194	0.0000	17.5814
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**7.0966**	**0.4194**	**0.0000**	**17.5814**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

A PHASE I CULTURAL RESOURCES ASSESSMENT FOR THE 1442 MURCHISON AVENUE PROJECT

POMONA, CALIFORNIA

APNs 8358-035-908 to -915, -917, -918, -922, -923, -925, -926, -928, -929, -935 to -939, and -941

Project Location: Unsectioned portion of the San Jose (Dalton et al.) Land Grant, Township 1 South, Range 9 West of the *San Dimas* USGS Quadrangle Topographic Map

Prepared on Behalf of:

MLC Holdings, Inc.
5 Peters Canyon Road, Suite 310
Irvine, California 92606

Prepared for:

City of Pomona
505 Garey Avenue
Pomona, California 91766

Prepared by:

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14010 Poway Road, Suite A
Poway, California 92064

November 8, 2019; Revised October 8, 2020

Fieldwork Performed: October 22, 2019
Key Words: Survey of 7.47 acres; no cultural resources identified.

Archaeological Report Summary Information

Author(s):	Andrew J. Garrison, M.A., RPA and Brian F. Smith, M.A.
Prepared by:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064
Report Date:	November 8, 2019; Revised October 8, 2020
Report Title:	A Phase I Cultural Resources Assessment for the 1442 Murchison Avenue Project, Pomona, California
Prepared on Behalf of:	MLC Holdings, Inc. 5 Peters Canyon Road, Suite 310 Irvine, California 92606
Prepared for:	City of Pomona 505 Garey Avenue Pomona, California 91766
Assessor's Parcel Number(s):	8358-035-908, -909, -910, -911, -912, -913, -914, -915, -917, -918, -922, -923, -925, -926, -928, -929, -935, -936, -937, -938, -939, -941
USGS Quadrangle:	Unsectioned portion of the San Jose (Dalton et al.) Land Grant, Township 1 South, Range 9 West of the *San Dimas* USGS Quadrangle Map
Study Area:	7.47 acres
Key Words:	Archaeological survey program; negative; City of Pomona; *San Dimas* USGS topographic quadrangle; no cultural resources identified.

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1.0 MANAGEMENT SUMMARY/ABSTRACT

The following report describes the results of the cultural resources survey conducted by Brian F. Smith and Associates, Inc. (BFSA) for the 1442 Murchison Avenue Project. The survey included 7.47 acres located in the city of Pomona, Los Angeles County, California. The project includes the construction of a planned multi-family residential development. The subject property is located at 1442 Murchison Avenue within the city of Pomona and is bound by Interstate 10 to the north, North Dudley Street to the west, residential development to the east, and Cortez Elementary School to the south. Further, the project is located within the unsectioned San Jose (Dalton et al.) land grant (Township 1 South, Range 9 West [Projected]) as shown on the USGS 7.5' *San Dimas* topographic quadrangle map. The project includes 22 parcels identified as Assessor's Parcel Numbers (APNs) 8358-035-908 to -915, -917, -918, -922, -923, -925, -926, -928, -929, -935 to -939, and -941). This study by BFSA was conducted in compliance with the California Environmental Quality Act (CEQA) and the environmental guidelines of the City of Pomona to locate and record any cultural resources present within the project.

The subject property previously contained multi-family residential structures which were removed from the property in the late twentieth century. As such, the project currently is vacant, although remnants of former streets, sidewalks, fire hydrants, and other signs of modern development are still visible. Vegetation within the project is limited to pockets of non-native weeds and grasses, as well as a few oak and palm trees located along the former street alignments. BFSA conducted the assessment to locate and record any cultural resources identified within the project in compliance with CEQA and following City of Pomona cultural resource guidelines. During the survey, no artifacts or cultural resources were discovered, and therefore, no further archaeological study is required to complete the archaeological assessment of the 1442 Murchison Avenue Project. A copy of this report will be permanently filed with the South Central Coastal Information Center (SCCIC) at California State University, Fullerton (CSU Fullerton). All notes, photographs, and other materials related to this project will be curated at the archaeological laboratory of BFSA in Poway, California.

1.1 Purpose of Investigation

The purpose of this investigation was to complete a records search of previously recorded archaeological sites on or near the property, survey the project acreage, identify any archaeological resources within the project, and test and evaluate any cultural resources that may be impacted by the proposed development. The project's conceptual site plan (see Figure 2.0–3) shows the configuration of the multi-family residential development within the project.

1.2 Recommendation Summary

The 1442 Murchison Avenue Project will not result in direct impacts to recorded cultural resources and no mitigation measures will be recommended as a condition of approval.

2.0 INTRODUCTION

BFSA was retained by MLC Holdings, Inc., the project applicant, to conduct a cultural resources survey of the proposed 1442 Murchison Avenue Project located within in the city of Pomona, Los Angeles County. The archaeological survey was conducted in order to comply with CEQA and City of Pomona cultural resource guidelines with regards to development-generated impacts to cultural resources. The project is located in an area of moderate cultural resource sensitivity, as is suggested by known site density and predictive modeling. Sensitivity for prehistoric resources in a given area is usually indicated by known settlement patterns, which in the southeastern Los Angeles area are focused around environments with accessible food and water. Historic resources in the area tend to be associated with either the built environment or the agricultural history of the region.

The 1442 Murchison Avenue Project consists of the planned construction of a multi-family residential development. The project is a 7.47-acre property located in the city of Pomona within southeastern Los Angeles County, California (Figure 2.0–1). The subject property is located at 1442 Murchison Avenue within the city of Pomona and is bound by Interstate 10 to the north, North Dudley Street to the west, residential development to the east, and Cortez Elementary School to the south. Further, the project is located within the unsectioned San Jose (Dalton et al.) land grant (Township 1 South, Range 9 West [Projected]), as shown on the USGS 7.5' *San Dimas* topographic quadrangle map (Figure 2.0–2). The project includes 22 parcels identified as APNs 8358-035-908 to -915, -917, -918, -922, -923, -925, -926, -928, -929, -935 to -939, and -941. The project, as proposed by the applicant, will consist of the construction of a multi-family residential development along with associated parking lots, landscaping, and infrastructure (Figure 2.0–3).

Senior Project Archaeologist Andrew Garrison conducted the cultural resources study for the project. The survey was accomplished by walking survey transects in 10-meter intervals across the property. Due to previous disturbances associated with the removal of structures and infrastructure, ground visibility was excellent throughout the majority of the subject property. Visibility was only restricted in areas where the previous hardscape and infrastructure had not been fully removed. Vegetation within the project is minimal, consisting of small pockets of non-native weeds and grasses, as well as a few oak and palm trees located along the former street alignments. Andrew Garrison and Brian F. Smith prepared the technical report, Andrew Garrison generated the report graphics, and Courtney Accardy conducted technical editing and report production. Qualifications of key personnel are provided in Appendix A.

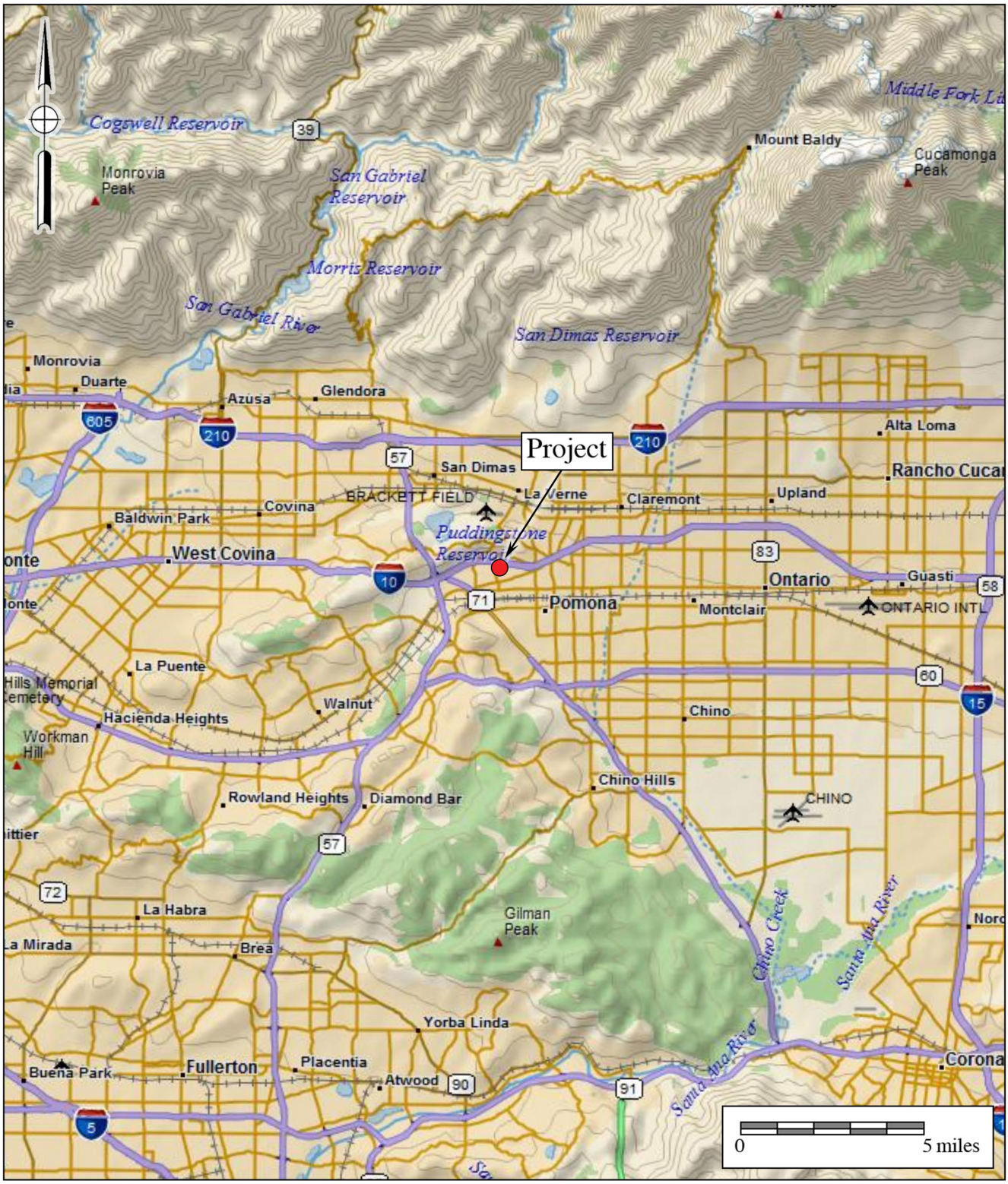


Figure 2.0–1

General Location Map

The 1442 Murchison Avenue Project

DeLorme (1:250,000)

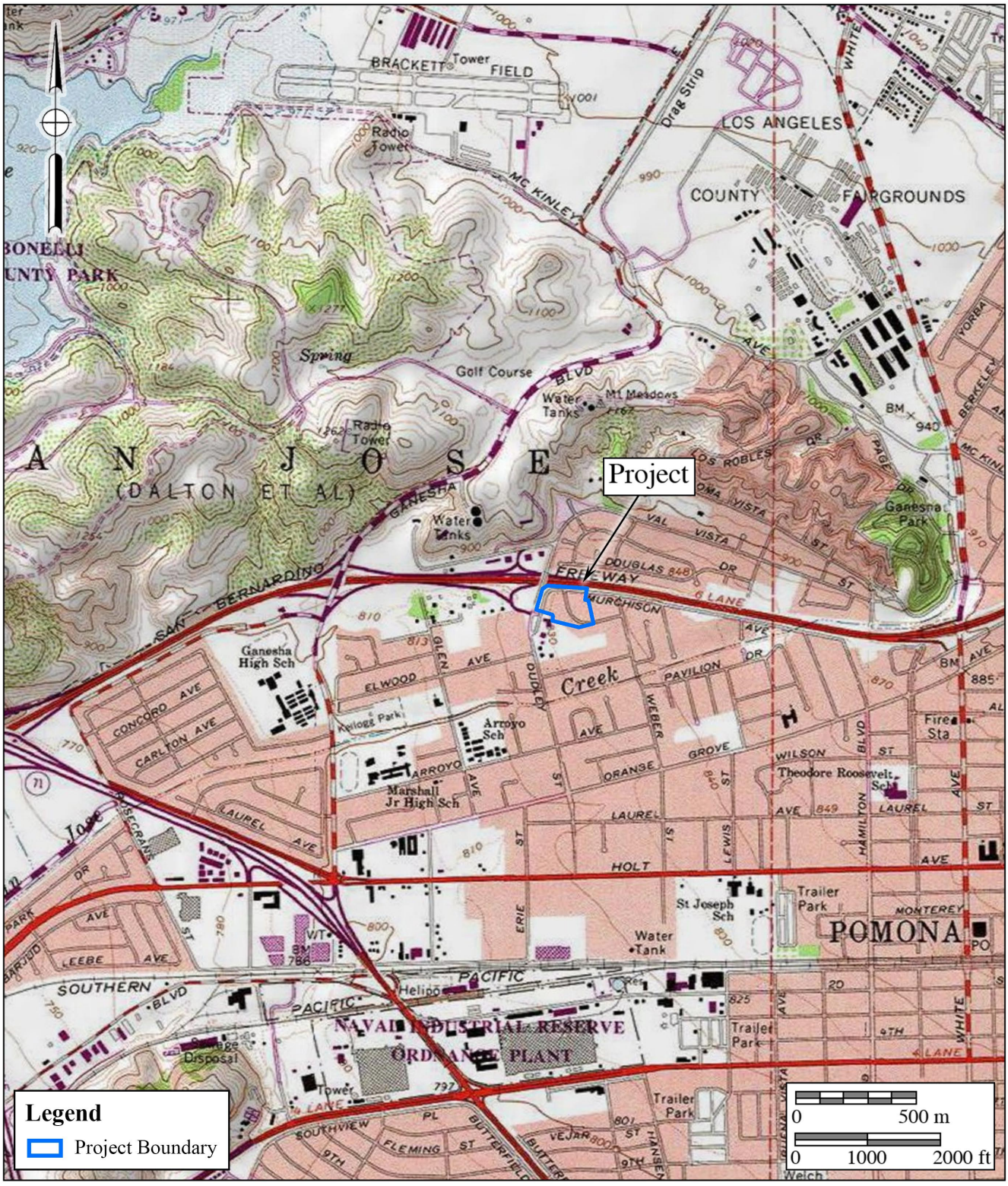


Figure 2.0–2

Project Location Map

The 1442 Murchison Avenue Project

USGS *San Dimas* Quadrangle (7.5-minute series)



Figure 2.0–3

Conceptual Site Plan

The 1442 Murchison Avenue Project

2.1 Previous Work

The records search for the property conducted at the SCCIC at CSU Fullerton reported that no cultural resources have been recorded within the subject property. However, 16 cultural resources have been recorded within one mile of the project, one of which, a single family residence (P-19-1503967), is recorded adjacent to project. In addtion, a total of 26 cultural resource studies have been conducted within a one-mile radius of the proposed project. None of the previously conducted studies identified during the records search include the current project; however, three are mapped directly adjacent (Wlodarski 1993; Smith 1994a; Smith 1994b). A discussion of the complete records search is provided in Section 4.1 of this report.

2.2 Project Setting

The proposed project is generally located in southeastern Los Angeles County at 1442 Murchison Avenue and is bound by interstate 10 to the north, North Dudley Street to the west, residential development to the east, and Cortez Elementary School to the south. The property has been graded and is generally flat with an average elevation of 835 feet above mean sea level (AMSL).

The project is located within the Pomona Valley south of the San Jose Hills which separates the Pomona Valley from the San Gabriel Valley. The San Gabriel Mountains which extend from Newall Pass in Los Angeles County to the east to the Cajon Pass in San Bernardino County are located to the north of the San Gabriel and Pomona valleys. These mountains are part of the Transverse Ranges with peaks exceeding 9,000 feet AMSL. Geologically, the subject property is located south of the inferred trace of the San Jose fault zone in areas of Holocene sedimentary units of terrestrial origin. As mapped by Morton and Miller (2003), the project area is underlain by the middle Holocene Young alluvial-fan deposits (Qyf_3) (Wirths and Kennedy 2015).

The subject property previously contained multi-family residential structures which were removed from the property in the late twentieth century. Further, aerial photographs from the early 2000s indicate the project was utilized for staging during the construction of Cortez Elementry School which is located immediately south of the subject property. As such, the project currently is vacant, although remnants of former streets, sidewalks, fire hydrants, and other signs of modern development are still visible. This includes a now-abandoned segment of Murchison Avenue located within the project along the western and northern boundary of the property. Vegetation within the project is limited to pockets of non-native weeds and grasses, as well as a few oak and palm trees located along the former street alignments.

2.3 Cultural Setting

2.3.1 Prehistoric Period

Several prehistoric cultural chronologies have been proposed for the southern California coast and nearby inland areas, such as two of the most frequently cited sequences developed by William Wallace (1955) and Claude Warren (1968). Such chronologies provide a framework to

discuss archaeological data in relation to broad cultural changes seen in the archaeological record. The chronological sequence presented herein represents an updated synthesis of these schemes for Los Angeles County and the surrounding regions. The prehistoric sequence of the area can be divided into four broad temporal categories. It should be noted that the prehistoric chronology for the region is being refined on a continuing basis, with new discoveries and improvements being made in the accuracy of dating techniques.

Terminal Pleistocene and Early Holocene: Paleo-Coastal Period (circa 9500 to 7000/6500 B.C.)

Although data on early human occupation for the southern California coast is limited, archaeological evidence from the northern Channel Islands suggests initial settlement within the region occurred at least 12,000 years before the present (YBP). At Daisy Cave (SMI-261) on San Miguel Island, radiocarbon dates indicate an early period of use in the terminal Pleistocene, sometime between 9600 and 9000 calibrated (cal) B.C. (Erlandson et al. 1996). Nearby on Santa Rosa Island, human remains from the Arlington Springs Site (SRI-1730) have been dated between 11,000 and 10,000 cal B.C. (Johnson et al. 2002). Archaeological data recovered from these and other coastal Paleo Indian sites indicate a distinctively maritime cultural adaptation, termed the "Paleo-Coastal Tradition" (Moratto 1984), which involved the use of seafaring technology and a subsistence regime focused upon shellfish gathering and fishing (Rick et al. 2001).

Relatively few sites have been identified in Los Angeles County that date to the terminal Pleistocene and early Holocene. Evidence of possible early human occupation has been found at the sand dune bluff site of Malaga Cove (LAN-138), located between Redondo Beach and Palos Verdes (Walker 1951). Researchers have proposed that archaeological remains recovered from the lowermost cultural stratum at the site, including shell, animal bone, and chipped stone tools, may date to as early as 8000 cal B.C. (Moratto 1984:168; Wallace 1986).

Middle Holocene: Milling Stone Period (circa 7000/6500 to 1500/1000 B.C.)

The Milling Stone Period or Horizon, also referred to as the "Encinitas Tradition," is the earliest well-established cultural occupation of the coastal areas of the region (Sutton 2010; Sutton and Gardner 2010). The onset of this period, which began sometime between 7000 and 6500 cal B.C., is marked by the expansion of populations throughout southern California. Regional variations in technology, settlement patterns, and mortuary practices among Milling Stone sites have led researchers to define several local manifestations or "patterns" of the tradition (Sutton and Gardner 2010). Groups that occupied modern-day Los Angeles County are thought to have been relatively small and highly mobile during this time, with a general subsistence economy focused upon the gathering of shellfish and plant foods, particularly hard seeds, with hunting being of less importance (Glassow et al. 2007).

Two temporal subdivisions have been defined for the portion of the Topanga Pattern falling within the Milling Stone Period: Topanga I (circa 6500 to 3000 B.C.) and Topanga II (circa 3000 to 1000 B.C.) (Sutton and Gardner 2010). Topanga I assemblages are characterized by abundant

manos and metates, core tools and scrapers, charmstones, cogged stone, and discoidals. Projectile points are quite rare, with those present resembling earlier, large, leaf-shaped forms (Glassow et al. 2007). Secondary inhumations with associated cairns are the most common burial form at Milling Stone sites, with small numbers of identified extended inhumations. The subsequent Topanga II phase largely represents a continuation of the Topanga pattern with site assemblages characterized by numerous manos and metates, charmstones, cogged stones, discoidals, and some stone balls. A significant technological change in ground stone occurs at this time, with the appearance of mortars and pestles at Topanga II sites suggesting the adoption of balanophagy by coastal populations (Sutton and Gardner 2010). The quantity of projectile points also notably increases in Topanga II site deposits, indicating that the hunting of large game may have played a greater role in the subsistence economy than in earlier times. While secondary burials continue to be quite common, a few flexed inhumations have also been recovered from archaeological contexts dating to the Topanga II phase.

A number of Milling Stone sites have been identified in Los Angeles County. The lower component of the Tank Site (LAN-1), located in the Santa Monica Mountains, was excavated in the 1940s and was determined to be Topanga I in age. In the San Fernando Valley, the Encino Site (LAN-111) is thought to have contained a Topanga I component. The artifact assemblage is definitive of the Topanga I period, containing many milling implements, but few projectile points. The presence of mortars and pestles along with stemmed projectile points at the Chatsworth Site (LAN-21), located at the western edge of the San Fernando Valley, suggests a Topanga II presence. The Big Tujunga Wash Site (LAN-167), located at the eastern edge of the San Fernando Valley, may have also contained a Topanga II component (Sutton and Gardner 2010).

Late Holocene: Intermediate Period (1500/1000 B.C. to A.D. 750)

The Intermediate Period, which encompasses the early portion of the "Del Rey Tradition," as defined by Sutton (Sutton 2010), begins around 3,500 YBP. At this time, significant changes are seen throughout the coastal areas of southern California in material culture, settlement systems, subsistence strategies, and mortuary practices. These new cultural traits have been attributed to the arrival of Takic-speaking people from the southern San Joaquin Valley (Sutton 2009). Biological, archaeological, and linguistic data indicates that the Takic groups who settled in the Los Angeles Basin were ethnically distinct from the preexisting Hokan-speaking Topanga populations, and are believed to be ancestral to ethnographic Gabrielino groups (Sutton 2009). While archaeological evidence indicates that "relic" Topanga III populations continued to survive in isolation in the Santa Monica Mountains, these indigenous groups appear to have been largely replaced or absorbed by the Gabrielino, or Chumash, by 2,000 YBP (Sutton and Gardner 2010:17).

Intermediate Period sites in the region are represented by the "Angeles Pattern" of the Del Rey Tradition (Sutton 2010). Three temporal subdivisions have been defined for the portion of the Angeles Pattern that falls within the Intermediate Period: Angeles I (1500 to 600 B.C.), Angeles II (600 B.C. to A.D. 400), and Angeles III (A.D. 400 to 750) (Sutton and Gardner 2010:8). The

onset of the Angeles I phase is characterized by the increase and aggregation of regional populations and the appearance of the first village settlements. The prevalence of projectile points, single-piece shell fishhooks, and bone harpoon points at Angeles I sites suggests a subsistence shift in the Intermediate Period, an increased emphasis on fishing and terrestrial hunting, and less reliance upon the gathering of shellfish resources. Regional trade or interaction networks also appeared to develop at this time, with coastal populations in Los Angeles County obtaining small steatite artifacts and *Olivella* sp. shell beads from the southern Channel Islands and obsidian from the Coso Volcanic Field (Koerper et al. 2002). Finally, marked changes are seen in mortuary practices during the Angeles I phase with flexed primary inhumations and cremations replacing extended inhumations and cairns.

The Angeles II phase largely represents a continuation and elaboration of the Angeles I technology, settlement, and subsistence systems. One exception to this pattern is the introduction of a new funerary complex around 2,600 YBP, consisting of large rock cairns or platforms, which contain abundant broken tools, faunal remains, and cremated human bone. These mortuary features have generally been thought to represent the predecessor of the Southern California Mourning Ceremony (Sutton 2010:14).

Several important changes in the archaeological record mark the beginning of the Angeles III phase. At this time, larger seasonal villages characterized by well-developed middens and cemeteries were established along the coast or the inland areas. Archaeological data from Angeles III sites indicates that residents of these settlements practiced a fairly diverse subsistence strategy, which included the exploitation of both marine and terrestrial resources (Sutton 2010:16). Notable technological changes at this time included the introduction of the plank canoe and the bow and arrow (Glassow et al. 2007:203-204). The appearance of new *Olivella* sp. bead types at Angeles III sites indicates a reconfiguration of existing regional exchange networks with increased interaction with populations in the Gulf of California (Koerper et al. 2002). Finally, cremations increase slightly in frequency at this time, with inhumations no longer placed in an extended position (Sutton 2010:18). Intermediate Period sites in Los Angeles County include LAN-2 and LAN-197, which are located in the Santa Monica Mountains. The formal cemeteries at these sites are representative of the increased sedentism that occurred during the Intermediate Period (Glassow et al. 2007:202).

Late Holocene: Late Period (A.D. 750 to Spanish Contact)

The Late Period dates from approximately A.D. 750 until Spanish contact in 1542. Sutton (2010) has divided this period, which falls within the larger Del Rey Tradition, into two phases: Angeles IV (A.D. 750 to 1200) and Angeles V (A.D. 1200 to 1550). The Angeles IV phase is characterized by the continued growth of regional populations and the development of large, sedentary villages. Although chiefdoms appear to have developed in the northern Channel Islands and the Santa Barbara region after 850 YBP (Arnold 1992; Gamble 2005), little direct evidence has been found to suggest that this level of social complexity existed in the Los Angeles area

during the Late Prehistoric Period (Sutton 2010).

Several new types of material culture appear during the Angeles IV phase, including Cottonwood series points, birdstone and "spike" effigies, *Olivella* sp. cupped beads, and *Mytilus* sp. shell disc beads. The presence of southwestern pottery, Patayan ceramic figurines, and Hohokam shell bracelets at Angeles IV sites suggests some interaction between groups in southern California and the Southwest. Notable changes are seen in regional exchange networks after 800 YBP, with an increase in the number and size of steatite artifacts, including large vessels, elaborate effigies, and comals (cooking dishes) recovered from Angeles V sites. The presence of these artifacts suggests a strengthening of trade ties between coastal Los Angeles populations and the southern Channel Islands (Koerper et al. 2002:69). Finally, Late Period mortuary practices remain largely unchanged from the Intermediate Period, with flexed primary inhumations continuing to be the preferred burial method.

Late Period sites in Los Angeles County include LAN-227 and LAN-229, which are located in the Santa Monica Mountains. Both sites contain fewer manos and metates than earlier sites, but more mortars, pestles, projectile points, drills, beads, pipes, and bone tools (Moratto 1984:141). Although these sites represent a move toward centralized sedentary villages during this period, it is unclear whether they represent year-round occupation or semi-permanent villages used as base settlements (Glassow et al. 2007:210).

Late Holocene / Protohistoric Period / The Gabrielino (1769 to Present)

During the late Holocene, population size and density increased dramatically, calling for an even more diversified economy (Altschul and Grenda 2002). Ethnographic data, the first of which came from Spanish explorers and missionaries, indicates that the Gabrielino (Tongva) were the major tribe established within the San Gabriel Valley and surrounding areas. The Spanish attributed this name to the Native Americans in the area served by the Mission San Gabriel Arcángel.

The territory of the Gabrielino at the time of Spanish contact covers much of present-day Los Angeles and Orange counties. The southern extent of this culture area is bounded by Aliso Creek, the eastern extent is located east of present-day San Bernardino along the Santa Ana River, the northern extent includes the San Fernando Valley, and the western extent includes portions of the Santa Monica Mountains. The Gabrielino also occupied several Channel Islands including Santa Barbara Island, Santa Catalina Island, San Nicholas Island, and San Clemente Island. Because of their access to certain resources, including a steatite source from Santa Catalina Island, this group was among the wealthiest and most populous aboriginal groups in all of southern California. This highly prized material was used for making pipes, animal carvings, ritual objects, ornaments, and cooking utensils. The Gabrielino profited well from trading steatite since it was valued so much by groups throughout southern California (Bean and Smith 1978a; Kroeber 1976). Trade of materials and resources controlled by the Gabrielino extended as far north as the San Joaquin Valley, as far east as the Colorado River, and as far south as Baja California (Bean and

Smith 1978a; Kroeber 1976).

The Gabrielino spoke a Cupan language that was part of the Shoshonean or Takic family of Uto-Aztecan linguistic stock; these linguistic ties united a dispersed ethnic group occupying 1,500 square miles in the Los Angeles Basin region (Altschul and Grenda 2002). Interestingly, this language stock was different from that of the Chumash to the north in the Santa Barbara region, as well as from the Kumeyaay (Tipai and Ipai) in the San Diego region, both of which spoke languages of the Hokan stock, using different dialects.

The Gabrielino lived in permanent villages and smaller resource gathering camps occupied at various times of the year depending upon the seasonality of the resource. Larger villages were comprised of several families or clans, while smaller seasonal camps typically housed smaller family units. The coastal area between San Pedro and Topanga Canyon was the location of primary subsistence villages, while secondary sites were located near inland sage stands, oak groves, and pine forests. Permanent villages were located along rivers and streams, as well as in sheltered areas along the coast. As previously mentioned, the Channel Islands were also the locations of relatively large settlements (Bean and Smith 1978a; Kroeber 1976).

Resources procured along the coast and on the islands were primarily marine in nature and included tuna, swordfish, ray, shark, California sea lion, Stellar sea lion, harbor seal, northern elephant seal, sea otter, dolphin, porpoise, various waterfowl species, numerous fish species, purple sea urchin, and mollusks such as rock scallop, California mussel, and limpet. Inland resources included oak acorn, pine nut, Mohave yucca, cacti, sage, grass nut, deer, rabbit, hare, rodent, quail, duck, and a variety of reptiles such as western pond turtle and snakes (Bean and Smith 1978a; Kroeber 1976).

The social structure of the Gabrielino is little known; however, there appears to have been at least three social classes: 1) the elite, which included the rich, chiefs, and their immediate family; 2) a middle class, which included people of relatively high economic status or long-established lineages; and 3) a class of people that included most other individuals in the society. Villages were politically autonomous units comprised of several lineages. During times of the year when certain seasonal resources were available, the village would divide into lineage groups and move out to exploit them, returning to the village between forays (Bean and Smith 1978a; Kroeber 1976).

Each lineage had its own leader, with the village chief coming from the dominant lineage. Several villages might be allied under a paramount chief. Chiefly positions were of an ascribed status, most often passed to the eldest son. Chiefly duties included providing village cohesion, leading warfare and peace negotiations with other groups, collecting tribute from the village(s) under his jurisdiction, and arbitrating disputes within the village(s). The status of the chief was legitimized by his safekeeping of the sacred bundle, which was a representation of the link between the material and spiritual realms and the embodiment of power (Bean and Smith 1978a; Kroeber 1976).

Shamans were leaders in the spirit realm. The duties of the shaman included conducting healing and curing ceremonies, guarding the sacred bundle, locating lost items, identifying and

collecting poisons for arrows, and making rain (Bean and Smith 1978a; Kroeber 1976).

Marriages were made between individuals of equal social status and, in the case of powerful lineages, marriages were arranged to establish political ties between the lineages (Bean and Smith 1978a; Kroeber 1976).

Men conducted the majority of the heavy labor, hunting, fishing, and trading with other groups. Women's duties included gathering and preparing plant and animal resources, and making baskets, pots, and clothing (Bean and Smith 1978a; Kroeber 1976).

Gabrielino houses were domed, circular structures made of thatched vegetation. Houses varied in size and could house from one to several families. Sweathouses (semicircular, earth-covered buildings) were public structures used in male social ceremonies. Other structures included menstrual huts and a ceremonial structure called a *yuvar,* an open-air structure built near the chief's house (Bean and Smith 1978a; Kroeber 1976).

Clothing was minimal. Men and children most often went naked, while women wore deerskin or bark aprons. In cold weather, deerskin, rabbit fur, or bird skin (with feathers intact) cloaks were worn. Island and coastal groups used sea otter fur for cloaks. In areas of rough terrain, yucca fiber sandals were worn. Women often used red ochre on their faces and skin for adornment or protection from the sun. Adornment items included feathers, fur, shells, and beads (Bean and Smith 1978a; Kroeber 1976).

Hunting implements included wood clubs, sinew-backed bows, slings, and throwing clubs. Maritime implements included rafts, harpoons, spears, hook and line, and nets. A variety of other tools included deer scapulae saws, bone and shell needles, bone awls, scrapers, bone or shell flakers, wedges, stone knives and drills, metates, mullers, manos, shell spoons, bark platters, and wood paddles and bowls. Baskets were made from rush, deer grass, and skunkbush. Baskets were fashioned for hoppers, plates, trays, and winnowers for leaching, straining, and gathering. Baskets were also used for storing, preparing, and serving food, and for keeping personal and ceremonial items (Bean and Smith 1978a; Kroeber 1976).

As with other Native American populations in southern California, the arrival of the Spanish drastically changed life for the Gabrielino. Incorporation into the mission system disrupted their culture and changed their subsistence practices (Altschul and Grenda 2002). Ranchos were established throughout the area, often in major drainages where Native American villages tended to be located. By the early 1800s, Mission San Gabriel had expanded its holdings for grazing to include much of the former Gabrielino territory (Altschul and Grenda 2002). Eventually, widespread relocation of Native American groups occurred, resulting in further disruption of the native lifeways. Together with the introduction of Euro-American diseases, the Gabrielino and other groups of southern California experienced drastic population declines; in the early 1860s, a smallpox epidemic nearly wiped out the remaining Gabrielino population (Moratto 1984). While people of Gabrielino descent still live in the Los Angeles area, the Gabrielino were no longer listed as a culturally identifiable group in the 1900 Federal Census (Bean and Smith 1978; Moratto 1984).

2.3.2 Historic Period

The historic background of the project area began with the Spanish colonization of Alta California. The first Spanish colonizing expedition reached southern California in 1769 with the intention of converting and civilizing the indigenous populations, as well as expanding the knowledge of and access to new resources in the region (Brigandi 1998). In the late eighteenth century, the San Gabriel (Los Angeles County), San Juan Capistrano (Orange County), and San Luis Rey (San Diego County) missions began colonizing southern California, gradually expanding their use of the interior valley (into what is now western Riverside County) for raising grain and cattle to support the missions (Riverside County n.d.). The San Gabriel Mission claimed lands in what is now Jurupa, Riverside, San Jacinto, and the San Gorgonio Pass, while the San Luis Rey Mission claimed land in what is now Lake Elsinore, Temecula, and Murrieta (American Local History Network: Riverside County, California 1998). The indigenous groups who occupied these lands were recruited by missionaries, converted, and put to work in the missions (Pourade 1964). Throughout this period, the Native American populations were decimated by introduced diseases, a drastic shift in diet resulting in poor nutrition, and social conflicts due to the introduction of an entirely new social order (Cook 1976).

On September 8, 1771, Father Pedro Cambón and Father Angel Somera established the Mission San Gabriel de Arcángel near the present-day city of Montebello. In 1775, the mission was moved to its current location in San Gabriel due to better agricultural lands. This mission marked the first sustained European occupation of the Los Angeles County area. Mission San Gabriel, despite a slow start, partially due to misconduct by Spanish soldiers, eventually became so prosperous that it was known as "The Queen of the Missions" (Johnson et al. 1972).

The pueblo that eventually became the city of Los Angeles was established in 1781. During this period, Spain also deeded ranchos to prominent citizens and soldiers (though very few in comparison to the later Mexican Period). One such rancho, Rancho San Pedro, was deeded to soldier Juan Jose Dominguez in 1784 and comprised 75,000 acres, encompassing the modern South Bay region from the Los Angeles River on the east to the Pacific Ocean on the west.

The area that became Los Angeles County saw an increase in European settlement during the Mexican Period, largely due to the many land grants (ranchos) to Mexican citizens by various governors. The period ended in early January of 1847, when Mexican forces fought the combined United States Army and Navy forces in the Battle of the San Gabriel River on January 8, 1847 and the Battle of La Mesa on January 9, 1847 (Nevin 1978). On January 10, 1847, leaders of the pueblo of Los Angeles surrendered peacefully after Mexican General Jose Maria Flores withdrew his forces. Shortly thereafter, newly appointed Mexican Military Commander of California, Andrés Pico, surrendered all of Alta California to United States Army Lieutenant Colonel John C. Fremont in the Treaty of Cahuenga (Nevin 1978).

Settlement of the Los Angeles region accelerated during the early American Period. The county was established on February 18, 1850. It was one of 27 counties established in the months prior to California becoming a state. Many ranchos in the county were sold or otherwise acquired

by Americans, and most were subdivided into agricultural parcels or towns. Nonetheless, ranching retained its importance, and by the late 1860s, Los Angeles was one of the top dairy production centers in the country (Rolle 1963). In 1854, the United States Congress agreed to let San Pedro become an official port of entry, and by the 1880s, the railroads had established networks throughout the county, resulting in fast and affordable shipment of goods, as well as a means to transport new residents to the booming region (Dumke 1944). New residents included many health-seekers drawn to the area by the fabled climate in the 1870s to the 1880s (Baur 1959). In 1876, the county had a population of 30,000 (Dumke 1944:7); by 1900, it had reached 100,000.

In the early to mid-1900s, population growth accelerated due to industry that was associated with both world wars, as well as emigration from the Midwest "dust bowl" states during the Great Depression. The county became one of the most densely occupied areas in the United States. The county's mild climate and successful economy continued to draw new residents in the late 1900s, and much of the county transformed from ranches and farms into residential subdivisions surrounding commercial and industrial centers. Hollywood's development into the entertainment capital of the world and southern California's booming aerospace industry were key factors in the county's growth.

General History of Pomona

The project is located within the former Rancho San Jose land grant which was established by Don Ygnacio Palomares, Don Ricardo Vejar, and Luis Arenas. The Rancho was large encompassing what is now Pomona, La Verne, Claremont, San Dimas, Glendora, Covina, and Azusa. Palomares and Vejar retained control of most of the land even after California was brought under American rule in 1848. Throughout the 1850s, many new settlers came to the region; however, the 1860s were devastating as large floods, drought, locusts, and a smallpox epidemic took its toll on the population. As a result, Vejar lost most of his land while Palomares sold parts of his property to Louis Phillips (City of Pomona 2014).

In 1872, a number of Los Angeles County residents, including Louis Phillips, formed a group to entice the Southern Pacific Railroad to extend into the Pomona Valley. Phillips was focused on a station being constructed within the community of Spadra which was near his home. Further, Phillips owned most of the land within the Spadra community. In 1874, a station which was, at the time, the terminus of the rail line was constructed in Spadra and the community began to flourish. However, the line was extended to Colton in 1875, somewhat diminishing the importance of the Spadra station. In response, a group calling itself the Los Angeles Immigration and Cooperative Land Association purchased land for a new townsite, which would eventually become downtown Pomona, around a new station that had been built along the rail line just east of Spadra. A one square mile townsite was plotted and, in 1876, a land auction was held to sell the lots. As a result, the new townsite grew while Spadra dwindled (City of Pomona 2014; Meares 2017). The economy of the new townsite heavily depended on the citrus industry. The town was ultimately named "Pomona," after the Roman goddess of fruit, by nurseryman Soloman Gates

(City of Pomona 2014).

Pomona experienced a boom in the early to mid-1880s as a result of the founding of the Pomona Land and Water Development Company. The company was run by Reverend C.T. Mills and M.L. Eicks. Mills and Wicks purchased 12,000 acres of land along with all the water development rights. The company drilled wells and built a pipeline to the town and surrounding farm lot. As a result, "Pomona's population grew from 200 in 1882 to 2,300 in 1886. By 1886 there were 98 businesses" (City of Pomona 2014).

The city of Pomona was incorporated in 1888. Throughout the late nineteenth century, the citrus industry, which was focused primarily to the east within what became known as the Inland Empire, grew. Pomona's agricultural areas, as well as the city's transportation-oriented development surrounding the train station, helped the city become an important part of the Inland Empire citrus industry. The prosperity brought about by the citrus industry allowed the city to invest heavily in infrastructure throughout the early twentieth century. This investment led to commercial and residential development spurred on by rapid population growth across Southern California. Development also included the establishment of the Los Angeles County Fair in 1922 as well as improvements to major highways and roads (City of Pomona 2014).

During World War II, the fairgrounds were utilized to temporarily house troops as well as a temporary detention center for Japanese Americans. The population throughout Pomona grew as civilians came to the city looking for war-time related work. This growth continued after the war, fueling the demand for affordable housing. Ultimately, the housing demand led to the subdivision of 43 percent of former agricultural land for the construction of tract housing (City of Pomona 2014). Between 1959 and 1963, Pomona issued permits for more residential buildings than any other city in the San Gabriel Valley (City of Pomona 2014).

The postwar development of the city along with the development of the interstate highway system played a major part in how the city expanded. Increased mobility made it possible for cities like Pomona to be less dense in population and resulted in urban sprawl. This trend continued throughout the mid- to late twentieth century. In addition, the suburban expansion changed and transformed Pomona, leading to a decline in the use of the downtown core, as well as an increase in a variety of economic and social issues. However, in recent years, there has been an attempt by the city to revitalize and redevelop many portions of the city, including the downtown area, to better meet the demands of its citizens (City of Pomona 2014).

2.4 Research Goals

The primary goal of the research design is to attempt to understand the way in which humans have used the land and resources within the project area through time, as well as to aid in the determination of resource significance. For the current project, the study area under investigation is the southeastern portion of Los Angeles County. The scope of work for the archaeological program conducted for the 1442 Murchison Avenue Project included the survey of 7.47 acres to evaluate the potential for cultural resources. Given the area involved and the narrow

focus of the cultural resources study, the research design for this project was necessarily limited and general in nature. Since the main objective of the investigation was to identify the presence of, significance of, and potential impacts to cultural resources, the goal here is not necessarily to answer wide-reaching theories regarding the development of early southern California, but to investigate the role and importance of the identified resources. Nevertheless, the assessment of the significance of a resource must take into consideration a variety of characteristics, as well as the ability of the resource to address regional research topics and issues.

Although initial site evaluation investigations are limited in terms of the amount of information available, several specific research questions were developed that could be used to guide the initial investigations of any observed cultural resources. The basic research effort employed is focused upon gathering sufficient data to determine the boundaries of any identified resource, the depth, stratigraphy, and contents of any subsurface deposits, and the overall integrity of the site. Testing and recordation of the contents of the site would provide the basis to complete an analysis of spatial relationships of artifacts, features, and natural resources. Ultimately, this information forms the foundation to determine the cultural affiliation of the site, the period of occupation, site function, and potential to address more focused research questions. The following research questions take into account the size and location of the project discussed above.

Research Questions:

- Can located cultural resources be situated with a specific time period, population, or individual?
- Do the types of located cultural resources allow a site activity/function to be determined from a preliminary investigation? What are the site activities? What is the site function? What resources were exploited?
- How do the located sites compare to others reported from different surveys conducted in the area?
- How do the located sites fit existing models of settlement and subsistence for valley environments of the region?

Data Needs

At the survey level, the principle research objective is a generalized investigation of changing settlement patterns in both the prehistoric and historic periods within the study area. The overall goal is to understand settlement and resource procurement patterns of the project area occupants. Therefore, adequate information on site function, context, and chronology from an archaeological perspective is essential for the investigation. The fieldwork and archival research were undertaken with these primary research goals in mind:

1) To identify cultural resources occurring within the project;
2) To determine, if possible, site type and function, context of the deposit, and

chronological placement of each cultural resource identified;

3) To place each cultural resource identified within a regional perspective; and
4) To provide recommendations for the treatment of each of the cultural resources identified.

3.0 METHODOLOGY

The archaeological program for the 1442 Murchison Avenue Project consisted of an institutional records search, an intensive pedestrian survey of the 7.47-acre property, and preparation of a technical study. This archaeological study conformed to City of Pomona cultural resource guidelines. Statutory requirements of CEQA and subsequent legislation (Section 15064.5) were followed in evaluating the significance of cultural resources. Specific definitions for archaeological resource type(s) used in this report are those established by the State Historic Preservation Office (SHPO 1995).

3.1 Archaeological Records Search

The records search conducted by the SCCIC at CSU Fullerton was reviewed for an area of one mile surrounding the project in order to determine the presence of any previously recorded sites. Results of the records search are provided in Appendix B and discussed in Section 4.1. The SCCIC also provided the standard review of the National Register of Historic Places and the Office of Historic Preservation Historic Property Directory. Land patent records, held by the Bureau of Land Management (BLM) and accessible through the BLM General Land Office (GLO) website, were also searched for pertinent project information and the BFSA research library was consulted for any relevant historical information.

3.2 Field Methodology

In accordance with City of Pomona and CEQA review requirements, an intensive pedestrian reconnaissance was conducted that employed a series of parallel survey transects spaced at 10-meter intervals to locate archaeological sites within the project. The archaeological survey of the project was conducted on October 22, 2019. The entire project was covered by the survey process and photographs were taken to document project conditions during the survey (see Section 4.2). Due to previous disturbances associated with the removal of structures and infrastructure, ground visibility was excellent throughout the majority of the subject property. No artifacts or cultural resources were observed as a result of the survey.

3.3 Report Preparation and Recordation

This report contains information regarding previous studies, statutory requirements for the project, a brief description of the setting, the research methods employed, and the overall results of the survey. The report includes all appropriate illustrations and tabular information needed to make a complete and comprehensive presentation of these activities, including the methodologies employed and the personnel involved. A copy of this report will be placed at the SCCIC at CSU Fullerton.

3.4 Native American Consultation

A SLF search was also requested from the NAHC. The SLF search results were positive for resources within the general area of the project. In accordance with the recommendations of the NAHC, BFSA contacted all Native American consultants listed in the NAHC response letter to request any relevant information concerning the property. This request is not part of any Assembly Bill 52 Native American consultation. All correspondence with the tribes is summarized within Section 4.1 and provided in Appendix C.

3.5 Applicable Regulations

Resource importance is assigned to districts, sites, buildings, structures, and objects that possess exceptional value or quality illustrating or interpreting the heritage of Los Angeles County in history, architecture, archaeology, engineering, and culture. A number of criteria are used in demonstrating resource importance. Specifically, criteria outlined in CEQA provide the guidance for making such a determination. The following sections detail the CEQA criteria that a resource must meet in order to be determined important.

3.5.1 California Environmental Quality Act

According to CEQA (§15064.5a), the term "historical resource" includes the following:

1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the California Register of Historical Resources (Public Resources Code SS5024.1, Title 14 CCR. Section 4850 et seq.).
2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3) Any object, building, structure, site, area, place, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Public Resources Code SS5024.1, Title 14, Section 4852) including the following:

    a) Is associated with events that have made a significant contribution to the broad

patterns of California's history and cultural heritage;
b) Is associated with the lives of persons important in our past;
c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
d) Has yielded, or may be likely to yield, information important in prehistory or history.

4) The fact that a resource is not listed in, or determined eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Section 5020.1(j) or 5024.1.

According to CEQA (§15064.5b), 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 defines a substantial adverse change as:

1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
2) The significance of an historical resource is materially impaired when a project:

a) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or,
c) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance

and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects on archaeological sites and contains the following additional provisions regarding archaeological sites:

1) When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).
2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, Section 15126.4 of the guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
3) If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archaeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of Section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.
4) If an archaeological resource is neither a unique archaeological nor historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5 (d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides:

(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC as provided in Public Resources Code SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC. Action implementing such an agreement is exempt from:

    1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
    2) The requirement of CEQA and the Coastal Act.

4.0 RESULTS

4.1 Records Search Results

An archaeological records search for the project and the surrounding area within a one-mile radius was conducted by BFSA at the SCCIC at CSU Fullerton. The records search for the project did not identify any previously recorded cultural resources within the subject property. However, 16 cultural resources have been recorded within one-mile of the project, one of which, a single-family residence (P-19-150397), is recorded adjacent to project. Of the previously recorded resources, only one, LAN-208, is an archaeological site. Located just under one mile northeast of the current project within the San Jose Hills, LAN-208 is characterized as a multicomponent resource. Site LAN-208 consists of a prehistoric/protohistoric Native American village and cemetery site which is also situated within the boundaries of the historic Ganesha Park (Belmont and Seymour 1979). The remaining resources identified by the records search are all historic and associated with the built environment. These historic resources consist of nine single-family residences, a trailer park, the Fairplex clubhouse, a church, the Los Angeles County Fair grandstand, a segment of railroad track, and the location of a temporary World War II-era Japanese American detention camp. Brief descriptions of the sites located within a one-mile radius are provided in Table 4.1–1 and the complete records search results are provided in Appendix B.

Table 4.1–1
Cultural Resources Located
Within One Mile of the 1442 Murchison Avenue Project

Site(s)	Description
LAN-208	Multicomponent prehistoric/protohistoric Native American village and cemetery site and historic Ganesha Park
P-19-150397, P-19-150398, P-19-150399, P-19-150400, P-19-150401, P-19-150404, P-19-187025, P-19-188037, and P-19-188909	Historic single-family residence
P-19-188036	Historic trailer park
P-19-187041	Historic Fairplex clubhouse
P-19-188186	Historic church
P-19-187106	Historic Los Angeles County Fair grandstand
P-19-186112	Historic Union Pacific Railroad/Southern Pacific Railroad
P-19-186564	Historic temporary detention camp for Japanese Americans

A total of 26 cultural resource studies have been conducted within a one-mile radius of the proposed project. None of the previously conducted studies identified during the records search

include the current project; however, three are mapped directly adjacent (Wlodarski 1993; Smith 1994a, 1994b). Although located near the subject property, the studies conducted adjacent to the project are all long linear studies associated with Interstate 10. As such, they do not directly address the current study area. A bibliographic list of all the previous studies identified during the records search are provided in Appendix B.

BFSA also reviewed the following sources of historic information:

- The National Register of Historic Places Index
- The Office of Historic Preservation, Archaeological Determinations of Eligibility
- The Office of Historic Preservation, Directory of Properties in the Historic Property Data File
- Historic USGS maps including the 1897 15' *Pomona*, 1928 7.5' *Claremont,* and the 1954 7.5' *San Dimas* quadrangles.

None of these additional sources identified any recorded resources within the subject property. However, the historic maps do show structures were previously located within the project. Therefore, BFSA also reviewed historic aerial photographs dating between 1927 and 2018.

Based upon the earliest aerial photographs (1927 and 1948), the project historically was an agricultural property which contained orchards. In addition, the 1927 and 1948 aerial photographs show a rural residence and associated ancillary structures within the northwest corner of the property. By the 1953 aerial photograph, an additional structure appears to have been added to the southwest corner of the property. By 1964, the next available photograph, all but the very far southwest corner of the subject property had been fully redeveloped. As such, by the mid-1960s, most of the orchard and the previous rural structures had been replaced by a multi-family residential development, streets, and associated infrastructure. By the early 1970s, all remnants of the orchard had been removed and a gas station is visible within the southwest corner of the subject property. Between 1980 and 1994, most of the property had again been cleared as the multi-family residential development is no longer visible. In the early 2000s, the entire property was cleared of all remaining structures, including the 1970s-era gas station. Aerial photographs between 2002 and 2007 show the subject property being cleared, graded, and utilized for the staging of equipment associated with the construction of the adjacent Cortez Elementary School. As a result of the impacts associated with the school construction, only Murchison Avenue, small segments of a now-vacated interior street (Jacqueline Drive), and a few oak trees planted along the late twentieth century street alignments remain.

Furthermore, a 2019 geotechnical investigation indicated that, during exploratory test borings, undocumented fill was found throughout the property at depths ranging between two and 4.5 feet (Russell et al. 2019). However, the report also noted that "[d]ue to the prior development of the site, greater depths of undocumented fill should be expected in some areas of the site, especially in areas where old underground utilities are still in-place or were previously removed

and backfilled" (Russell et al. 2019).

BFSA also requested a records search of the SLF of the NAHC. The SLF search results were positive for resources within the general area of the project. In accordance with the recommendations of the NAHC, BFSA contacted all Native American consultants listed in the NAHC response letter. The only response BFSA has received was from the Gabrieleño Band of Mission Indians – Kizh Nation (Kizh) stating they would be happy to provide further information. The Kizh also responded requesting contact information for the lead agency (the City of Pomona) for the project. BFSA has followed up with the Kizh; however, as of the date of this report, no additional information has been provided. All correspondence is provided in Appendix C.

The records search and literature review suggest that there is a low potential for cultural resources to be contained within the boundaries of the property. Although both prehistoric and historic resources are present within a one-mile radius of the project, none have been recorded within the project boundary. Further, the subject property has been previously graded and developed, does not contain any natural sources of water, and prehistorically, likely had minimal food resources. Given the historic and prehistoric settlement of the region, the level of disturbance within the subject property, and the frequency of cultural sites known to be surrounding the project, there is a low potential for archaeological discoveries.

4.2 Results of the Field Survey

The archaeological survey of the project was conducted on October 22, 2019. All elements of the survey were completed by Senior Project Archaeologist Andrew Garrison. The archaeological survey of the property was an intensive reconnaissance consisting of a series of parallel survey transects spaced at approximately 10-meter intervals. The entire property was accessible and currently consists of a vacant lot.

The property topography is relatively flat and no seasonal drainages were observed within the project. Vegetation within the project is sparse, comprised mainly of non-native weeds, grasses, and trees. A few oak and palm trees were noted within the subject property, which were generally located along the former late twentieth century street alignments. Piles of pushed dirt, rubble, modern garbage, and modern building materials were found throughout the property. Remnants of the previous development of the project, such as sidewalk segments, curbs, fire hydrants, and partially-removed segments of roads were noted throughout the property. This characterization of a disturbed landscape is relevant to the consideration of the presence of cultural resources within the project. Overviews of the project are provided in Plates 4.2–1 to 4.2–4.

The intensive archaeological survey of the property did not result in the identification of any cultural resources. The observation that the property has been previously developed, cleared, and graded suggests that previous disturbance may have contributed to the negative survey results. However, the records search results indicate that historic built resources are the most common in the area, and only identified one archaeological site, which was located within the hills to the northeast. Conversely, the project is located within a valley setting and does not contain any

natural sources of water or other features that would be advantageous for the prehistoric inhabitants of the area. Therefore, based upon the results of the records search and previous development of the property, it is likely that development has eliminated the possibility of resources to be present within the property and the potential for buried cultural resources is low.



Plate 4.2–1: Overview of the project from the southeast corner showing Murchison Avenue, facing north.



Plate 4.2–2: View of a pile of rubble within the southeast corner of the project containing modern building materials, facing north.



Plate 4.2–3: Overview of the project from the northeast corner, facing southwest.



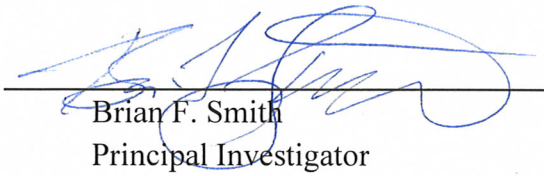
Plate 4.2–4: Overview of the project, facing south.

5.0 RECOMMENDATIONS

The cultural resources study conducted by BFSA for the 1442 Murchison Avenue Project was negative for the presence of cultural resources within the subject property. As such, no potential impacts to cultural resources are associated with the proposed development of the project. The archaeological study was completed in accordance with City of Pomona cultural resource guidelines and CEQA significance evaluation criteria. Based upon the absence of any cultural resources on or near the subject property, mitigation measures will not be required for this project. Additionally, based upon recent geotechnical exploratory borings, undocumented fill is present across the property at depths of at least two to 4.5 feet below the existing grade, and estimated to be present at greater depths, especially "in areas where old underground utilities are still in-place or were previously removed and backfilled" (Russell et al. 2019). Given that the maximum depth of cut and fill for the project is estimated to be less than five feet (Russell et al. 2019), it is unlikely that future earth disturbance will encroach into previously undisturbed soils. Therefore, given the lack of potential for buried resources due to the level of previous disturbance and development within the project, monitoring of any future grading is not recommended.

6.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this archaeological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



October 8, 2020

Brian F. Smith
Principal Investigator

Date

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APPENDIX A

Qualifications of Key Personnel

Brian F. Smith, MA

Owner, Principal Investigator

Brian F. Smith and Associates, Inc.
14010 Poway Road • Suite A •
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: bsmith@bfsa-ca.com

Education

Master of Arts, History, University of San Diego, California **1982**

Bachelor of Arts, History, and Anthropology, University of San Diego, California **1975**

Professional Memberships

Society for California Archaeology

Experience

Principal Investigator **1977–Present**
Brian F. Smith and Associates, Inc. **Poway, California**

Brian F. Smith is the owner and principal historical and archaeological consultant for Brian F. Smith and Associates. Over the past 32 years, he has conducted over 2,500 cultural resource studies in California, Arizona, Nevada, Montana, and Texas. These studies include every possible aspect of archaeology from literature searches and large-scale surveys to intensive data recovery excavations. Reports prepared by Mr. Smith have been submitted to all facets of local, state, and federal review agencies, including the US Army Crops of Engineers, the Bureau of Land Management, the Bureau of Reclamation, the Department of Defense, and the Department of Homeland Security. In addition, Mr. Smith has conducted studies for utility companies (Sempra Energy) and state highway departments (CalTrans).

Professional Accomplishments

These selected major professional accomplishments represent research efforts that have added significantly to the body of knowledge concerning the prehistoric life ways of cultures once present in the Southern California area and historic settlement since the late 18th century. Mr. Smith has been principal investigator on the following select projects, except where noted.

Downtown San Diego Mitigation and Monitoring Reporting Programs: Large numbers of downtown San Diego mitigation and monitoring projects submitted to the Centre City Development Corporation, some of which included Strata (2008), Hotel Indigo (2008), Lofts at 707 10th Avenue Project (2007), Breeza (2007), Bayside at the Embarcadero (2007), Aria (2007), Icon (2007), Vantage Pointe (2007), Aperture (2007), Sapphire Tower (2007), Lofts at 655 Sixth Avenue (2007), Metrowork (2007), The Legend (2006), The Mark (2006), Smart Corner (2006), Lofts at 677 7th Avenue (2005), Aloft on Cortez Hill (2005), Front and

Beech Apartments (2003), Bella Via Condominiums (2003), Acqua Vista Residential Tower (2003), Northblock Lofts (2003), Westin Park Place Hotel (2001), Parkloft Apartment Complex (2001), Renaissance Park (2001), and Laurel Bay Apartments (2001).

Archaeology at the Padres Ballpark: Involved the analysis of historic resources within a seven-block area of the "East Village" area of San Diego, where occupation spanned a period from the 1870s to the 1940s. Over a period of two years, BFSA recovered over 200,000 artifacts and hundreds of pounds of metal, construction debris, unidentified broken glass, and wood. Collectively, the Ballpark Project and the other downtown mitigation and monitoring projects represent the largest historical archaeological program anywhere in the country in the past decade (2000-2007).

4S Ranch Archaeological and Historical Cultural Resources Study: Data recovery program consisted of the excavation of over 2,000 square meters of archaeological deposits that produced over one million artifacts, containing primarily prehistoric materials. The archaeological program at 4S Ranch is the largest archaeological study ever undertaken in the San Diego County area and has produced data that has exceeded expectations regarding the resolution of long-standing research questions and regional prehistoric settlement patterns.

Charles H. Brown Site: Attracted international attention to the discovery of evidence of the antiquity of man in North America. Site located in Mission Valley, in the city of San Diego.

Del Mar Man Site: Study of the now famous Early Man Site in Del Mar, California, for the San Diego Science Foundation and the San Diego Museum of Man, under the direction of Dr. Spencer Rogers and Dr. James R. Moriarty.

Old Town State Park Projects: Consulting Historical Archaeologist. Projects completed in the Old Town State Park involved development of individual lots for commercial enterprises. The projects completed in Old Town include Archaeological and Historical Site Assessment for the Great Wall Cafe (1992), Archaeological Study for the Old Town Commercial Project (1991), and Cultural Resources Site Survey at the Old San Diego Inn (1988).

Site W-20, Del Mar, California: A two-year-long investigation of a major prehistoric site in the Del Mar area of the city of San Diego. This research effort documented the earliest practice of religious/ceremonial activities in San Diego County (circa 6,000 years ago), facilitated the projection of major non-material aspects of the La Jolla Complex, and revealed the pattern of civilization at this site over a continuous period of 5,000 years. The report for the investigation included over 600 pages, with nearly 500,000 words of text, illustrations, maps, and photographs documenting this major study.

City of San Diego Reclaimed Water Distribution System: A cultural resource study of nearly 400 miles of pipeline in the city and county of San Diego.

Master Environmental Assessment Project, City of Poway: Conducted for the City of Poway to produce a complete inventory of all recorded historic and prehistoric properties within the city. The information was used in conjunction with the City's General Plan Update to produce a map matrix of the city showing areas of high, moderate, and low potential for the presence of cultural resources. The effort also included the development of the City's Cultural Resource Guidelines, which were adopted as City policy.

Draft of the City of Carlsbad Historical and Archaeological Guidelines: Contracted by the City of Carlsbad to produce the draft of the City's historical and archaeological guidelines for use by the Planning Department of the City.

The Mid-Bayfront Project for the City of Chula Vista: Involved a large expanse of undeveloped agricultural land situated between the railroad and San Diego Bay in the northwestern portion of the city. The study included the analysis of some potentially historic features and numerous prehistoric sites.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Audie Murphy Ranch, Riverside County, California: Project manager/director of the investigation of 1,113.4 acres and 43 sites, both prehistoric and historic—included project coordination; direction of field crews; evaluation of sites for significance based on County of Riverside and CEQA guidelines; assessment of cupule, pictograph, and rock shelter sites, co-authoring of cultural resources project report. February-September 2002.

Cultural Resources Evaluation of Sites Within the Proposed Development of the Otay Ranch Village 13 Project, San Diego County, California: Project manager/director of the investigation of 1,947 acres and 76 sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of San Diego and CEQA guidelines; co-authoring of cultural resources project report. May-November 2002.

Cultural Resources Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County: Project manager/director for a survey of 29 individual sites near the U.S./Mexico Border for proposed video surveillance camera locations associated with the San Diego Border barrier Project—project coordination and budgeting; direction of field crews; site identification and recordation; assessment of potential impacts to cultural resources; meeting and coordinating with U.S. Army Corps of Engineers, U.S. Border Patrol, and other government agencies involved; co-authoring of cultural resources project report. January, February, and July 2002.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee West GPA, Riverside County, California: Project manager/director of the investigation of nine sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of Riverside and CEQA guidelines; historic research; co-authoring of cultural resources project report. January-March 2002.

Mitigation of An Archaic Cultural Resource for the Eastlake III Woods Project for the City of Chula Vista, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. September 2001-March 2002.

Cultural Resources Survey and Test of Sites Within the Proposed French Valley Specific Plan/EIR, Riverside County, California: Project manager/director of the investigation of two prehistoric and three historic sites—included project coordination and budgeting; survey of project area; Native American consultation; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Lawson Valley Project, San Diego County, California: Project manager/director of the investigation of 28 prehistoric and two historic sites—included project coordination; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resource Survey and Geotechnical Monitoring for the Mohyi Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; field survey; assessment of parcel for potentially buried cultural deposits; monitoring of geotechnichal borings; authoring of cultural resources project report. Brian F. Smith and Associates, San Diego, California. June 2000.

Enhanced Cultural Resource Survey and Evaluation for the Prewitt/Schmucker/Cavadias Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; direction of field crews; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. June 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee Ranch, Riverside County, California: Project manager/director of the investigation of one prehistoric and five historic sites—included project coordination and budgeting; direction of field crews; feature recordation; historic structure assessments; assessment of sites for significance based on CEQA guidelines; historic research; co-authoring of cultural resources project report. February-June 2000.

Salvage Mitigation of a Portion of the San Diego Presidio Identified During Water Pipe Construction for the City of San Diego, California: Project archaeologist/director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project, Pacific Beach, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. March-April 2000.

Salvage Mitigation of a Portion of Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project and Caltrans, Carlsbad, California: Project achaeologist/ director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. December 1999-January 2000.

Survey and Testing of Two Prehistoric Cultural Resources for the Airway Truck Parking Project, Otay Mesa, California: Project archaeologist/director—included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; authoring of cultural resources project report, in prep. December 1999-January 2000.

Cultural Resources Phase I and II Investigations for the Tin Can Hill Segment of the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for a survey and testing of a prehistoric quarry site along the border—NRHP eligibility assessment; project coordination and budgeting; direction of field crews; feature recordation; meeting and coordinating with U.S. Army Corps of Engineers; co-authoring of cultural resources project report. December 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Westview High School Project for the City of San Diego, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. October 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Otay Ranch SPA-One West Project for the City of Chula Vista, California: Project archaeologist/director—included direction of field crews; development of data recovery program; management of artifact collections cataloging and curation; assessment of

site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report, in prep. September 1999-January 2000.

Monitoring of Grading for the Herschel Place Project, La Jolla, California: Project archaeologist/ monitor—included monitoring of grading activities associated with the development of a single-dwelling parcel. September 1999.

Survey and Testing of a Historic Resource for the Osterkamp Development Project, Valley Center, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program; budget development; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Testing of a Prehistoric Cultural Resource for the Proposed College Boulevard Alignment Project, Carlsbad, California: Project manager/director —included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report, in prep. July-August 1999.

Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California: Project archaeologist—included direction of field crews; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Evaluation of Cultural Resources at the Village 2 High School Site, Otay Ranch, City of Chula Vista, California: Project manager/director —management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report. July 1999.

Cultural Resources Phase I, II, and III Investigations for the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for the survey, testing, and mitigation of sites along border—supervision of multiple field crews, NRHP eligibility assessments, Native American consultation, contribution to Environmental Assessment document, lithic and marine shell analysis, authoring of cultural resources project report. August 1997-January 2000.

Phase I, II, and II Investigations for the Scripps Poway Parkway East Project, Poway California: Project archaeologist/project director—included recordation and assessment of multicomponent prehistoric and historic sites; direction of Phase II and III investigations; direction of laboratory analyses including prehistoric and historic collections; curation of collections; data synthesis; coauthorship of final cultural resources report. February 1994; March-September 1994; September-December 1995.

Archaeological Evaluation of Cultural Resources Within the Proposed Corridor for the San Elijo Water Reclamation System Project, San Elijo, California: Project manager/director —test excavations; direction of artifact identification and analysis; graphics production; coauthorship of final cultural resources report. December 1994-July 1995.

Evaluation of Cultural Resources for the Environmental Impact Report for the Rose Canyon Trunk Sewer Project, San Diego, California: Project manager/Director —direction of test excavations; identification and analysis of prehistoric and historic artifact collections; data synthesis; co-authorship of final cultural resources report, San Diego, California. June 1991-March 1992.

Reports/Papers

Author, coauthor, or contributor to over 2,500 cultural resources management publications, a selection of which are presented below.

2015 An Archaeological/Historical Study for the Safari Highlands Ranch Project, City of Escondido, County of San Diego.

2015 A Phase I and II Cultural Resources Assessment for the Decker Parcels II Project, Planning Case No. 36962, Riverside County, California.

2015 A Phase I and II Cultural Resources Assessment for the Decker Parcels I Project, Planning Case No. 36950, Riverside County, California.

2015 Cultural Resource Data Recovery and Mitigation Monitoring Program for Site SDI-10,237 Locus F, Everly Subdivision Project, El Cajon, California.

2015 Phase I Cultural Resource Survey for the Woodward Street Senior Housing Project, City of San Marcos, California (APN 218-120-31).

2015 An Updated Cultural Resource Survey for the Box Springs Project (TR 33410), APNs 255-230-010, 255-240-005, 255-240-006, and Portions of 257-180-004, 257-180-005, and 257-180-006.

2015 A Phase I and II Cultural Resource Report for the Lake Ranch Project, TR 36730, Riverside County, California.

2015 A Phase II Cultural Resource Assessment for the Munro Valley Solar Project, Inyo County, California.

2014 Cultural Resources Monitoring Report for the Diamond Valley Solar Project, Community of Winchester, County of Riverside.

2014 National Historic Preservation Act Section 106 Compliance for the Proposed Saddleback Estates Project, Riverside County, California.

2014 A Phase II Cultural Resource Evaluation Report for RIV-8137 at the Toscana Project, TR 36593, Riverside County, California.

2014 Cultural Resources Study for the Estates at Del Mar Project, City of Del Mar, San Diego, California (TTM 14-001).

2014 Cultural Resources Study for the Aliso Canyon Major Subdivision Project, Rancho Santa Fe, San Diego County, California.

2014 Cultural Resources Due Diligence Assessment of the Ocean Colony Project, City of Encinitas.

2014 A Phase I and Phase II Cultural Resource Assessment for the Citrus Heights II Project, TTM 36475, Riverside County, California.

2013 A Phase I Cultural Resource Assessment for the Modular Logistics Center, Moreno Valley, Riverside County, California.

2013 A Phase I Cultural Resources Survey of the Ivey Ranch Project, Thousand Palms, Riverside County, California.

2013 Cultural Resources Report for the Emerald Acres Project, Riverside County, California.

2013 A Cultural Resources Records Search and Review for the Pala Del Norte Conservation Bank Project, San Diego County, California.

2013 An Updated Phase I Cultural Resources Assessment for Tentative Tract Maps 36484 and 36485, Audie Murphy Ranch, City of Menifee, County of Riverside.

2013 El Centro Town Center Industrial Development Project (EDA Grant No. 07-01-06386); Result of Cultural Resource Monitoring.

2013 Cultural Resources Survey Report for the Renda Residence Project, 9521 La Jolla Farms Road, La Jolla, California.

2013 A Phase I Cultural Resource Study for the Ballpark Village Project, San Diego, California.

2013 Archaeological Monitoring and Mitigation Program, San Clemente Senior Housing Project, 2350 South El Camino Real, City of San Clemente, Orange County, California (CUP No. 06-065; APN-060-032-04).

2012 Mitigation Monitoring Report for the Los Peñasquitos Recycled Water Pipeline.

2012 Cultural Resources Report for Menifee Heights (Tract 32277).

2012 A Phase I Cultural Resource Study for the Altman Residence at 9696 La Jolla Farms Road, La Jolla, California 92037.

2012 Mission Ranch Project (TM 5290-1/MUP P87-036W3): Results of Cultural Resources Monitoring During Mass Grading.

2012 A Phase I Cultural Resource Study for the Payan Property Project, San Diego, California.

2012 Phase I Archaeological Survey of the Rieger Residence, 13707 Durango Drive, Del Mar, California 92014, APN 300-369-49.

2011 Mission Ranch Project (TM 5290-1/MUP P87-036W3): Results of Cultural Resources Monitoring During Mass Grading.

2011 Mitigation Monitoring Report for the 1887 Viking Way Project, La Jolla, California.

2011 Cultural Resource Monitoring Report for the Sewer Group 714 Project.

2011 Results of Archaeological Monitoring at the 10th Avenue Parking Lot Project, City of San Diego, California (APNs 534-194-02 and 03).

2011 Archaeological Survey of the Pelberg Residence for a Bulletin 560 Permit Application; 8335 Camino Del Oro; La Jolla, California 92037 APN 346-162-01-00 .

2011 A Cultural Resources Survey Update and Evaluation for the Robertson Ranch West Project and an Evaluation of National Register Eligibility of Archaeological sites for Sites for Section 106 Review (NHPA).

2011 Mitigation Monitoring Report for the 43rd and Logan Project.

2011 Mitigation Monitoring Report for the Sewer Group 682 M Project, City of San Diego Project #174116.

2011 A Phase I Cultural Resource Study for the Nooren Residence Project, 8001 Calle de la Plata, La Jolla, California, Project No. 226965.

2011 A Phase I Cultural Resource Study for the Keating Residence Project, 9633 La Jolla Farms Road, La Jolla, California 92037.

2010 Mitigation Monitoring Report for the 15th & Island Project, City of San Diego; APNs 535-365-01, 535-365-02 and 535-392-05 through 535-392-07.

2010 Archaeological Resource Report Form: Mitigation Monitoring of the Sewer and Water Group 772 Project, San Diego, California, W.O. Nos. 187861 and 178351.

2010 Pottery Canyon Site Archaeological Evaluation Project, City of San Diego, California, Contract No. H105126.

2010 Archaeological Resource Report Form: Mitigation Monitoring of the Racetrack View Drive Project, San Diego, California; Project No. 163216.

2010 A Historical Evaluation of Structures on the Butterfield Trails Property.

2010 Historic Archaeological Significance Evaluation of 1761 Haydn Drive, Encinitas, California (APN 260-276-07-00).

2010 Results of Archaeological Monitoring of the Heller/Nguyen Project, TPM 06-01, Poway, California.

2010 Cultural Resource Survey and Evaluation Program for the Sunday Drive Parcel Project, San Diego County, California, APN 189-281-14.

2010 Archaeological Resource Report Form: Mitigation Monitoring of the Emergency Garnet Avenue Storm Drain Replacement Project, San Diego, California, Project No. B10062

2010 An Archaeological Study for the 1912 Spindrift Drive Project

2009 Cultural Resource Assessment of the North Ocean Beach Gateway Project City of San Diego #64A-003A; Project #154116.

2009 Archaeological Constraints Study of the Morgan Valley Wind Assessment Project, Lake County, California.

2008 Results of an Archaeological Review of the Helen Park Lane 3.1-acre Property (APN 314-561-31), Poway, California.

2008 Archaeological Letter Report for a Phase I Archaeological Assessment of the Valley Park Condominium Project, Ramona, California; APN 282-262-75-00.

2007 Archaeology at the Ballpark. Brian F. Smith and Associates, San Diego, California. Submitted to the Centre City Development Corporation.

2007 Result of an Archaeological Survey for the Villages at Promenade Project (APNs 115-180-007-3,115-180-049-1, 115-180-042-4, 115-180-047-9) in the City of Corona, Riverside County.

2007 Monitoring Results for the Capping of Site CA-SDI-6038/SDM-W-5517 within the Katzer Jamul Center Project; P00-017.

2006 Archaeological Assessment for The Johnson Project (APN 322-011-10), Poway, California.

2005 Results of Archaeological Monitoring at the El Camino Del Teatro Accelerated Sewer Replacement Project (Bid No. K041364; WO # 177741; CIP # 46-610.6.

2005 Results of Archaeological Monitoring at the Baltazar Draper Avenue Project (Project No. 15857; APN: 351-040-09).

2004 TM 5325 ER #03-14-043 Cultural Resources.

2004 An Archaeological Survey and an Evaluation of Cultural Resources at the Salt Creek Project. Report on file at Brian F. Smith and Associates.

2003 An Archaeological Assessment for the Hidden Meadows Project, San Diego County, TM 5174, Log No. 99-08-033. Report on file at Brian F. Smith and Associates.

2003 An Archaeological Survey for the Manchester Estates Project, Coastal Development Permit #02-009, Encinitas, California. Report on file at Brian F. Smith and Associates.

2003 Archaeological Investigations at the Manchester Estates Project, Coastal Development Permit #02-009, Encinitas, California. Report on file at Brian F. Smith and Associates.

2003 Archaeological Monitoring of Geological Testing Cores at the Pacific Beach Christian Church Project. Report on file at Brian F. Smith and Associates.

2003 San Juan Creek Drilling Archaeological Monitoring. Report on file at Brian F. Smith and Associates.

2003 Evaluation of Archaeological Resources Within the Spring Canyon Biological Mitigation Area, Otay Mesa, San Diego County, California. Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for the Otay Ranch Village 13 Project (et al.). Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for the Audie Murphy Ranch Project (et al.). Brian F. Smith and Associates, San Diego, California.

2002 Results of an Archaeological Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County, California. Brian F. Smith and Associates, San Diego, California.

2002 A Cultural Resources Survey and Evaluation for the Proposed Robertson Ranch Project, City of Carlsbad. Brian F. Smith and Associates, San Diego, California.

2002 Archaeological Mitigation of Impacts to Prehistoric Site SDI-7976 for the Eastlake III Woods Project, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for Tract No. 29777, Menifee West GPA Project, Perris Valley, Riverside County. Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for Tract No. 29835, Menifee West GPA Project, Perris Valley, Riverside County. Brian F. Smith and Associates, San Diego, California.

2001 An Archaeological Survey and Evaluation of a Cultural Resource for the Moore Property, Poway. Brian F. Smith and Associates, San Diego, California.

2001 An Archaeological Report for the Mitigation, Monitoring, and Reporting Program at the Water and Sewer Group Job 530A, Old Town San Diego. Brian F. Smith and Associates, San Diego, California.

2001 A Cultural Resources Impact Survey for the High Desert Water District Recharge Site 6 Project, Yucca Valley. Brian F. Smith and Associates, San Diego, California.

2001 Archaeological Mitigation of Impacts to Prehistoric Site SDI-13,864 at the Otay Ranch SPA-One West Project. Brian F. Smith and Associates, San Diego, California.

2001 A Cultural Resources Survey and Site Evaluations at the Stewart Subdivision Project, Moreno Valley, County of San Diego. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological/Historical Study for the French Valley Specific Plan/EIR, French Valley, County of Riverside. Brian F. Smith and Associates, San Diego, California.

2000 Results of an Archaeological Survey and the Evaluation of Cultural Resources at The TPM#24003– Lawson Valley Project. Brian F. Smith and Associates, San Diego, California.

2000 Archaeological Mitigation of Impacts to Prehistoric Site SDI-5326 at the Westview High School Project for the Poway Unified School District. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological/Historical Study for the Menifee Ranch Project. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological Survey and Evaluation of Cultural Resources for the Bernardo Mountain Project, Escondido, California. Brian F. Smith and Associates, San Diego, California.

2000 A Cultural Resources Impact Survey for the Nextel Black Mountain Road Project, San Diego, California. Brian F. Smith and Associates, San Diego, California.

2000 A Cultural Resources Impact Survey for the Rancho Vista Project, 740 Hilltop Drive, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.

2000 A Cultural Resources Impact Survey for the Poway Creek Project, Poway, California. Brian F. Smith and Associates, San Diego, California.

2000 Cultural Resource Survey and Geotechnical Monitoring for the Mohyi Residence Project. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Prewitt/Schmucker/ Cavadias Project. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project. Brian F. Smith and Associates, San Diego, California.

2000 Salvage Excavations at Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project, Carlsbad, California. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California. Brian F. Smith and Associates, San Diego, California.

2000 A Report for an Archaeological Evaluation of Cultural Resources at the Otay Ranch Village Two SPA, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological Evaluation of Cultural Resources for the Airway Truck Parking Project, Otay Mesa, County of San Diego. Brian F. Smith and Associates, San Diego, California.

2000 Results of an Archaeological Survey and Evaluation of a Resource for the Tin Can Hill Segment of the Immigration and Naturalization and Immigration Service Border Road, Fence, and Lighting Project, San Diego County, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey of the Home Creek Village Project, 4600 Block of Home Avenue, San Diego, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey for the Sgobassi Lot Split, San Diego County, California. Brian F. Smith and Associates, San Diego, California.

1999 An Evaluation of Cultural Resources at the Otay Ranch Village 11 Project. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological/Historical Survey and Evaluation of a Cultural Resource for The Osterkamp Development Project, Valley Center, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey and Evaluation of a Cultural Resource for the Proposed College Boulevard Alignment Project. Brian F. Smith and Associates, San Diego, California.

1999 Results of an Archaeological Evaluation for the Anthony's Pizza Acquisition Project in Ocean Beach, City of San Diego (with L. Pierson and B. Smith). Brian F. Smith and Associates, San Diego, California.

1996 An Archaeological Testing Program for the Scripps Poway Parkway East Project. Brian F. Smith and Associates, San Diego, California.

1995 Results of a Cultural Resources Study for the 4S Ranch. Brian F. Smith and Associates, San Diego, California.

1995 Results of an Archaeological Evaluation of Cultural Resources Within the Proposed Corridor for the San Elijo Water Reclamation System. Brian F. Smith and Associates, San Diego, California.

1994 Results of the Cultural Resources Mitigation Programs at Sites SDI-11,044/H and SDI-12,038 at the Salt Creek Ranch Project . Brian F. Smith and Associates, San Diego, California.

1993 Results of an Archaeological Survey and Evaluation of Cultural Resources at the Stallion Oaks Ranch Project. Brian F. Smith and Associates, San Diego, California.

1992 Results of an Archaeological Survey and the Evaluation of Cultural Resources at the Ely Lot Split Project. Brian F. Smith and Associates, San Diego, California.

1991 The Results of an Archaeological Study for the Walton Development Group Project. Brian F. Smith and Associates, San Diego, California.

Andrew J. Garrison, M.A., RPA

Senior Project Archaeologist

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14010 Poway Road • Suite A •
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: agarrison@bfsa-ca.com

Education

Master of Arts, Public History, University of California, Riverside **2009**

Bachelor of Science, Anthropology, University of California, Riverside **2005**

Bachelor of Arts, History, University of California, Riverside **2005**

Professional Memberships

Register of Professional Archaeologists
Society for California Archaeology
Society for American Archaeology
California Council for the Promotion of History
Society of Primitive Technology
Lithic Studies Society
California Preservation Foundation
Pacific Coast Archaeological Society

Experience

Senior Project Archaeologist **June 2017–Present**
Brian F. Smith and Associates, Inc. **Poway, California**

Project management of all phases of archaeological investigations for local, state, and federal agencies including National Register of Historic Places (NRHP) and California Environmental Quality Act (CEQA) level projects interacting with clients, sub-consultants, and lead agencies. Supervise and perform fieldwork including archaeological survey, monitoring, site testing, comprehensive site records checks, and historic building assessments. Perform and oversee technological analysis of prehistoric lithic assemblages. Author or co-author cultural resource management reports submitted to private clients and lead agencies.

Senior Archaeologist and GIS Specialist **2009–2017**
Scientific Resource Surveys, Inc. **Orange, California**

Served as Project Archaeologist or Principal Investigator on multiple projects, including archaeological monitoring, cultural resource surveys, test excavations, and historic building assessments. Directed projects from start to finish, including budget and personnel hours proposals, field and laboratory direction, report writing, technical editing, Native American consultation, and final report submittal. Oversaw all GIS projects including data collection, spatial analysis, and map creation.

Preservation Researcher **2009**
City of Riverside Modernism Survey **Riverside, California**

Completed DPR Primary, District, and Building, Structure and Object Forms for five sites for a grant-funded project to survey designated modern architectural resources within the City of Riverside.

Information Officer **2005, 2008–2009**
Eastern Information Center (EIC), University of California, Riverside **Riverside, California**

Processed and catalogued restricted and unrestricted archaeological and historical site record forms. Conducted research projects and records searches for government agencies and private cultural resource firms.

Reports/Papers

2017 A Phase I Cultural Resources Assessment for the Marbella Villa Project, City of Desert Hot Springs, Riverside County, California. Brian F. Smith and Associates, Inc.

2017 Phase I Cultural Resources Survey for TTM 37109, City of Jurupa Valley, County of Riverside. Brian F. Smith and Associates, Inc.

2017 A Phase I Cultural Resources Survey for the Jefferson & Ivy Project, City of Murrieta, California. Brian F. Smith and Associates, Inc.

2017 A Phase I Cultural Resources Assessment for the Nuevo Dollar General Store Project, Riverside County, California. Brian F. Smith and Associates, Inc.

2017 A Phase I Cultural Resource Study for the Westmont Project, Encinitas, California. Brian F. Smith and Associates, Inc.

2017 A Phase I Cultural Resources Assessment for the Winchester Dollar General Store Project, Riverside County, California. Brian F. Smith and Associates, Inc.

2017 Phase I Cultural Resource Assessment for TTM 31810 (42.42 acres) Predico Properties Olive Grove Project. Scientific Resource Surveys, Inc.

2016 John Wayne Airport Jet Fuel Pipeline and Tank Farm Archaeological Monitoring Plan. Scientific Resource Surveys, Inc. On file at the County of Orange, California.

2016 Phase I Cultural Resources Assessment: All Star Super Storage City of Menifee Project, 2015-156. Scientific Resource Surveys, Inc. On file at the Eastern Information Center, University of California, Riverside.

2016 Historic Resource Assessment for 220 South Batavia Street, Orange, CA 92868 Assessor's Parcel Number 041-064-4. Scientific Resource Surveys, Inc. Submitted to the City of Orange as part of Mills Act application.

2015 Historic Resource Report: 807-813 Harvard Boulevard, Los Angeles. Scientific Resource Surveys, Inc. On file at the South Central Coastal Information Center, California State University, Fullerton.

2015 Exploring a Traditional Rock Cairn: Test Excavation at CA-SDI-13/RBLI-26: The Rincon Indian Reservation, San Diego County, California. Scientific Resource Surveys, Inc.

2015 Class III Scientific Resource Surveys, Inc. Survey for The Lynx Cat Granite Quarry and Water Valley Road Widening Project County of San Bernardino, California, Near the Community of Hinkley. Scientific Resource Surveys, Inc. On file at the South Central Coastal Information Center, California State University, Fullerton.

2014 Archaeological Phase I: Cultural Resource Survey of the South West Quadrant of Fairview Park, Costa Mesa. Scientific Resource Surveys, Inc. On file at the South Central Coastal Information Center, California State University, Fullerton.

2014 Archaeological Monitoring Results: The New Los Angeles Federal Courthouse. Scientific Resource Surveys, Inc. On file at the South Central Coastal Information Center, California State University, Fullerton.

2012 Bolsa Chica Archaeological Project Volume 7, Technological Analysis of Stone Tools, Lithic Technology at Bolsa Chica: Reduction Maintenance and Experimentation. Scientific Resource Surveys, Inc.

2010 Phase II Cultural Resources Report Site CA=RIV-2160 PM No. 35164. Scientific Resource Surveys, Inc. On file at the Eastern Information Center, University of California, Riverside.

2009 Riverside Modernism Context Survey, contributing author. Available online at the City of Riverside.

Presentations

2017 "Repair and Replace: Lithic Production Behavior as Indicated by the Debitage Assemblage from CA-MRP-283 the Hackney Site." Presented at the Society for California Archaeology Annual Meeting, Fish Camp, California.

2016 "Bones, Stones, and Shell at Bolsa Chica: A Ceremonial Relationship?" Presented at the Society for California Archaeology Annual Meeting, Ontario, California.

2016 "Markers of Time: Exploring Transitions in the Bolsa Chica Assemblage." Presented at the Society for California Archaeology Annual Meeting, Ontario, California.

2016 "Dating Duress: Understanding Prehistoric Climate Change at Bolsa Chica." Presented at the Society for California Archaeology Annual Meeting, Ontario, California.

2015 "Successive Cultural Phasing Of Prehistoric Northern Orange County, California." Presented at the Society for California Archaeology Annual Meeting, Redding, California.

2015 "Southern California Cogged Stone Replication: Experimentation and Results." Presented at the Society for California Archaeology Annual Meeting, Redding, California.

2015 "Prehistoric House Keeping: Lithic Analysis of an Intermediate Horizon House Pit." Presented at the Society for California Archaeology Annual Meeting, Redding, California.

2015 "Pits and Privies: The Use and Disposal of Artifacts from Historic Los Angeles." Presented at the Society for California Archaeology Annual Meeting, Redding, California.

2015 "Grooving in the Past: A Demonstration of the Manufacturing of OGR beads and a look at Past SRS, Inc. Replicative Studies." Demonstration of experimental manufacturing techniques at the January meeting of The Pacific Coast Archaeological Society, Irvine, California.

2014 "From Artifact to Replication: Examining *Olivella* Grooved Bead Manufacturing." Presented at the Society for California Archaeology Annual Meeting, Visalia, California.

2014 "New Discoveries from an Old Collection: Comparing Recently Identified OGR Beads to Those Previously Analyzed from the Encino Village Site." Presented at the Society for California Archaeology Annual Meeting, Visalia, California.

2012 Bolsa Chica Archaeology: Part Seven: Culture and Chronology. Lithic demonstration of experimental manufacturing techniques at the April meeting of The Pacific Coast Archaeological Society, Irvine, California.

2012 "Expedient Flaked Tools from Bolsa Chica: Exploring the Lithic Technological Organization." Presented at the Society for California Archaeology Annual Meeting, San Diego, California.

2012 "Utilitarian and Ceremonial Ground Stone Production at Bolsa Chica Identified Through Production Tools." Presented at the Society for California Archaeology Annual Meeting, San Diego, California.

2012 "Connecting Production Industries at Bolsa Chica: Lithic Reduction and Bead Manufacturing." Presented at the Society for California Archaeology Annual Meeting, San Diego, California.

2011 Bolsa Chica Archaeology: Part Four: Mesa Production Industries. Co-presenter at the April meeting of The Pacific Coast Archaeological Society, Irvine, California.

2011 "Hammerstones from Bolsa Chica and Their Relationship towards Site Interpretation." Presented at the Society for California Archaeology Annual Meeting, Rohnert Park, California.

2011 "Exploring Bipolar Reduction at Bolsa Chica: Debitage Analysis and Replication." Presented at the Society for California Archaeology Annual Meeting, Rohnert Park, California.

APPENDIX B

Archaeological Records Search Results

(Deleted for Public Review; Bound Separately)

APPENDIX C

NAHC Sacred Lands File Search Results

(Deleted for Public Review; Bound Separately)

A PHASE I CULTURAL RESOURCES ASSESSMENT FOR THE 1442 MURCHISON AVENUE PROJECT

POMONA, CALIFORNIA

CONFIDENTIAL APPENDIX

APNs 8358-035-908, -909, -910, -911, -912, -913, -914, -915, -917, -918, -922, -923, -925, -926, -928, -929, -935, -936, -937, -938, -939, -941

Project Location: Unsectioned portion of the San Jose (Dalton et al.) Land Grant, Township 1 South, Range 9 West of the *San Dimas* USGS Quadrangle Topographic Map

Prepared on Behalf of:

MLC Holdings, Inc.
5 Peters Canyon Road, Suite 310
Irvine, California 92606

Prepared for:

City of Pomona
505 Garey Avenue
Pomona, California 91766

Prepared by:

Andrew J. Garrison and Brian F. Smith
Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064



November 8, 2019; Revised October 8, 2020

Fieldwork Performed: October 22, 2019
Key Words: Survey of 7.47 acres; no cultural resources identified.

APPENDIX B

Archaeological Records Search Results

BRIAN F. SMITH and ASSOCIATES

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEMS

RECORDS SEARCH

Company:	Brian F. Smith and Associates
Processed By:	Andrew Garrison
Date Processed:	10-30-19
Project Identification:	Dudley Pomona
Information Center:	South Central Coastal Information Center
Search Radius:	One-Mile

Historical Resources:

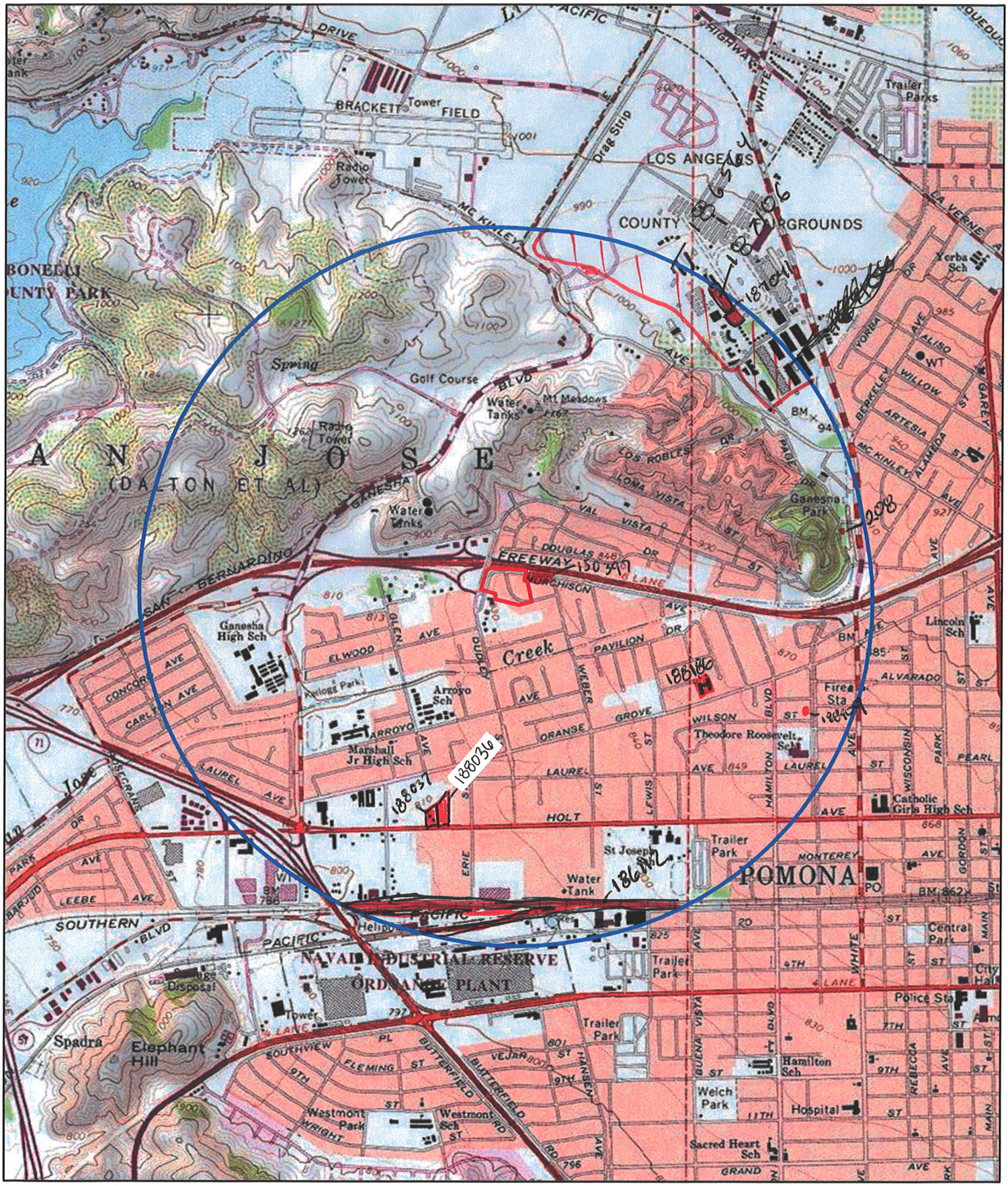
Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been reviewed for all recorded sites.

There are 16 resources located within one-mile of the current project area. None of the resources intersect the current project; however, one P-19-150397 is mapped directly adjacent to the subject property.

Previous Survey Report Boundaries:

Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been reviewed.

There are 26 reports within a mile. None of the previous studies intersect the current project; however, three (LA-2932, -5925, and -3799) are mapped directly adjacent to the subject property


Project
mile_radius
Dudley Pomona (19-195)
USGS *San Dimas* Quadrangle
(7.5-minute series)
Resources for 2
N
AJG BFSA: 10/11/2019
1:24,000



Project

mile_radius

Dudley Pomona (19-195)
USGS *San Dimas* Quadrangle
(7.5-minute series)

Resources 2 of 2

N

AJG BFSA: 10/11/2019

1:24,000

Resources

PrimaryString	TrinomialString	OtherIDs	Age	Attribs	RecordingEvents	Reports
P-19-000208	CA-LAN-000208	Resource Name - Ganesha Park Site	Prehistoric	AP03 (Ceramic scatter); AP09 (Burials)	1968 (T. Blackburn)	LA-02665, LA-03509, LA-10092, LA-11350, LA-11351, LA-11352, LA-12254
P-19-150397		OHP Property Number - 092972; Resource Name - House for A E Packard	Historic	HP02 (Single family property)	1993 (F. Smith, Myra L Frank & Associates)	LA-03779
P-19-150398		OHP Property Number - 092973; Resource Name - 1304 N Hamilton Blvd	Historic	HP02 (Single family property)	1993 (F. Smith, Myra L Frank & Associates)	
P-19-150399		Resource Name - Speculative House for C P Stensgard	Historic	HP02 (Single family property)	1993 (F. Smith, Myra L Frank & Associates)	
P-19-150400		OHP Property Number - 092975; Resource Name - House for Farell Fikel	Historic	HP02 (Single family property)	1993 (F. Smith, Myra L Frank & Associates)	LA-08828
P-19-150401		OHP Property Number - 092977; Resource Name - House for C P Stensgard	Historic	HP02 (Single family property)	1993 (F. Smith, Myra L Frank & Associates)	LA-08828
P-19-150404		OHP Property Number - 092982; Resource Name - 493 E Kenoak Pl	Historic	HP02 (Single family property)	1993 (F. Smith, Myra L frank & Associates)	

Resources

PrimaryString	TrinomialString	OtherIDs	Age	Attribs	RecordingEvents	Reports
P-19-186112		Resource Name - Union Pacific RR, Southern Pacific R R Los Angeles Division; Other - C-Los Angeles-A-1; Other - MetroLink Riverside Line; Other - SPRR Los Angeles Division; Other - SPRR Sunset Line; Other - Map Reference #2-35	Historic	AH07 (Roads/trails/railroad grades); HP11 (Engineering structure); HP39 (Other) - railroad grade	1999 (S. Ashkar, Jones & Stokes); 2002 (Rand F. Herbert, JPR Historical Consulting Services); 2009 (R. Ramirez and F. Smith, SWCA Environmental Consultants); 2009 (F. Smith and J. Steely, SWCA Environmental Consultants); 2012 (Alyssa Newcomb, SWCA Environmental Consultants); 2018 (Audrey von Ahrens, GPA); 2019 (Jenna Kachour, GPA)	LA-04835, LA-05125, LA-05501, LA-05643, LA-07528, LA-07834, LA-07943, LA-07954, LA-08231, LA-08249, LA-08298, LA-08299, LA-08517, LA-08635, LA-08667, LA-08671, LA-08701, LA-08703, LA-08733, LA-08744, LA-08821, LA-08822, LA-08826, LA-08827, LA-08911, LA-09156, LA-09199, LA-09236, LA-09271, LA-09441, LA-09660, LA-09795, LA-09880, LA-09894, LA-10189, LA-10284, LA-10299, LA-10323, LA-10340, LA-10394, LA-10513, LA-10638, LA-10698, LA-10911, LA-10937, LA-10940, LA-10942, LA-10997, LA-10998, LA-11048, LA-11060, LA-11065, LA-11077, LA-11180, LA-11253, LA-11293, LA-11405, LA-11537, LA-11590, LA-11775, LA-11808, LA-11821, LA-11988, LA-11989, LA-12133, LA-12211, LA-12212, LA-12349, LA-12499, LA-12526, LA-12552, LA-12558, LA-12697, LA-12928, LA-13458, VN-03153
P-19-186564		OHP Property Number - 091575, 091576; Resource Name - Temporary Detention Camps for Japanese Americans; Other - Pomona Assembly Center, Pomona; Other - Santa Anita Park Assembly Center, Santa Anita; CHL - 934	Historic	HP39 (Other)	1980 (Raymond Y. Okamura)	LA-03800, LA-07876, LA-09052, LA-12254
P-19-187025		OHP Property Number - 123678; Resource Name - C P Stensgard Residence	Historic	HP03 (Multiple family property)	1999 (D. Kane, Caltrans)	
P-19-187041		OHP Property Number - 091576; Resource Name - Fairplex Clubhouse	Historic	HP20 (Canal/aqueduct)	1998 (J. Tearnen & L. Bricker)	

Resources

PrimaryString	TrinomialString	OtherIDs	Age	Attribs	RecordingEvents	Reports
P-19-187106		OHP Property Number - 091576; Resource Name - Los Angeles County Fair Grandstand; Other - Fairplex Park Grandstand	Historic	HP39 (Other)	2010	LA-10958
P-19-188036		Resource Name - Western Mobile Garden Trailer Park	Historic	HP39 (Other)	2007 (R. Goodwin & C. Tibbet, LSA)	LA-08830
P-19-188037			Historic	HP02 (Single family property)	2007 (R. Goodwin & C. Tibbet, LSA)	LA-08830, LA-11293
P-19-188186		Resource Name - Pomona Church of the Brethren; Other - Pomona Fellowship Church	Historic	HP16 (Religious building)	2004 (C.J. Hetzel)	
P-19-188909		OHP Property Number - 166120; Other - 8357-009-008 / Garcia/991 Huntington	Historic	HP02 (Single family property)	2007 (Sandra Campbell, City of Pomona)	LA-10853

University of California

19-000208

3770400N.

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Site LAn-208 2. Map San Dimas Quad 3. County Los Angeles

4. Twp. 1S Range 8W; ____ 1/4 of ____ 1/4 of Sec. ____

5. Location 200' north of intersection of Val Vista St + Paige Dr, between Paige Dr and small patio built as picnic area. 6. On contour elevation 900

7. Previous designations for site ____

8. Owner City of Pomona 9. Address Pomona, Calif.

10. Previous owners, dates ____

11. Present tenant Ganesha Park

12. Attitude toward excavation Favorable

13. Description of site Apparent cemetery

14. Area unknown 15. Depth 18" - 24" 16. Height ____

17. Vegetation scattered trees 18. Nearest water San Jose Creek - 100'

19. Soil of site Brown adobe-loam 20. Surrounding soil type Same

21. Previous excavation ____

22. Cultivation None 23. Erosion slight

24. Buildings, roads, etc. Portion covered / destroyed by picnic patio

25. Possibility of destruction See above - otherwise slight

26. House pits ____

27. Other features ____

28. Burials Apparently extended, head to west.

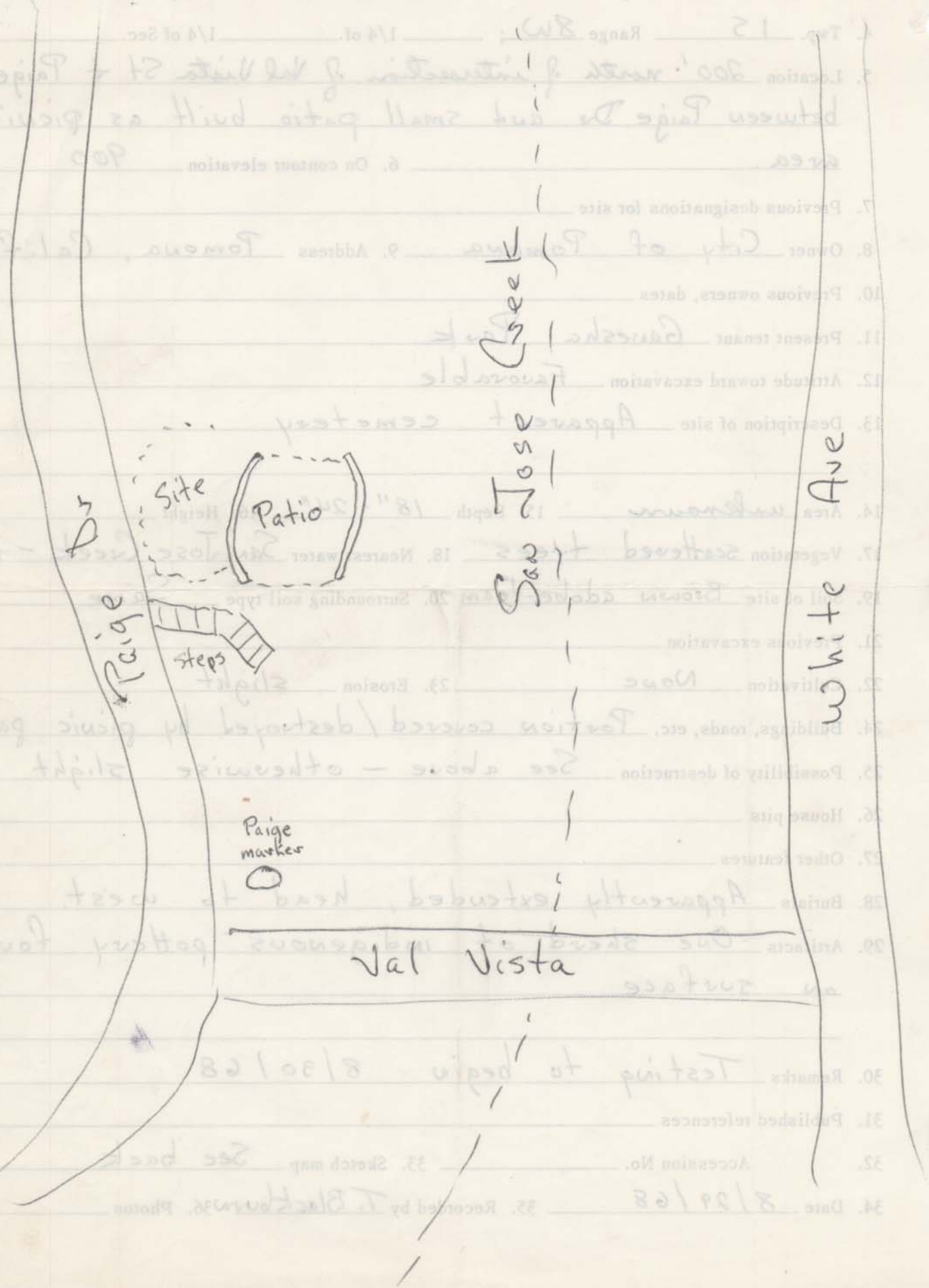
29. Artifacts One sherd of indigenous pottery found on surface

30. Remarks Testing to begin 8/30/68

31. Published references ____

32. Accession No. ____ 33. Sketch map See back

34. Date 8/29/68 35. Recorded by T. Blackburn 36. Photos ____


Site
Patio
Paige
steps
Paige marker
Val Vista
Rose
San
White Ave

State of California
DEPARTMENT OF TRANSPORTATION
ARCHITECTURAL INVENTORY/EVALUATION FORM

19-150397
HRI#092972

__ LISTED	__ DETERMINED ELIGIBLE
__ APPEARS ELIGIBLE	X APPEARS INELIGIBLE

IDENTIFICATION AND LOCATION

1. Historic name House for A. E. Packard
*2. Common or current name
*3. Number & street 1318 East Murchison Avenue Cross-corridor
City Pomona Vicinity only Zip County LAN
4. UTM zone A B C D
5. Quad map No. Parcel No. 8358-034-002 Other Project APE Map 08, Site No. 1

DESCRIPTION

6. Property category Building. If district, number of documented resources
*7. Briefly describe the present physical appearance of the property, including condition, boundaries, related features, surroundings, and (if appropriate) architectural style.

The residential building located at 1318 East Murchison Avenue is a typical interpretation of the Craftsman style. The single story building is configured in a rectangular plan. Alterations to the exterior of the building include the enclosure of the Arroyo stone front porch. The house is clad in clapboard with cornerboards and has an asphalt shingled roof. The building is sited on a suburban lot, directly across from the freeway landscaped with mature trees, and shrubs.



San Dimas Quad

8. Planning agency
Pomona Planning Dept.

9. Owner & address
Calvin C. Crum
10122 Rangeview Dr.
Santa Ana CA 92705

10. Type of ownership Private
11. Present use Residential SF
12. Zoning R2YY PO
13. Threats Project Related

*Complete these items for historic preservation compliance projects under Section 106 (36 CFR 800). All items must be completed for historical resources survey information.

19-150397

HISTORICAL INFORMATION

*14. Construction date(s) 1931 F. Original location _____ Date moved _____

15. Alterations & date Porch enclosed.

16. Architect _____ Builder Short, G. A.

17. Historic attributes (with number from list) 02--Single Family Property

SIGNIFICANCE AND EVALUATION

18. Context for evaluation: Theme Residential Architecture Area Pomona
Period 1930-1945 Property type Craftsman Context formally developed? No.

*19. Briefly discuss the property's importance within the context. Use historical and architectural analysis as appropriate. Compare with similar properties.

The building located at 1318 East Murchison Avenue is a rather ordinary example of the Craftsman style. It was constructed for $2000 in 1931 by contractor G. A. Short at the request of owner A. E. Packard. Similar examples of houses from the early 1930s are still commonplace in the Pomona area. Its overall architectural integrity has been diminished by alterations, particularly by the enclosure of the front porch. Because of this alterations, and the common presence of other such examples in the area, the building does not appear eligible for inclusion in the National Register of Historic Places under Criterion C. Furthermore, there are no known associations with significant historic events or persons for it to be further considered for eligibility under either Criterion A or B.

20. Sources
Pomona Dept. of Building & Safety, original permit No. 4166, May 22, 1931.
TRW-Redi Property Data Disk, 1931.

21. Applicable National Register criteria Not Applicable

22. Other recognition _____
State Landmark No. (if applicable) _____

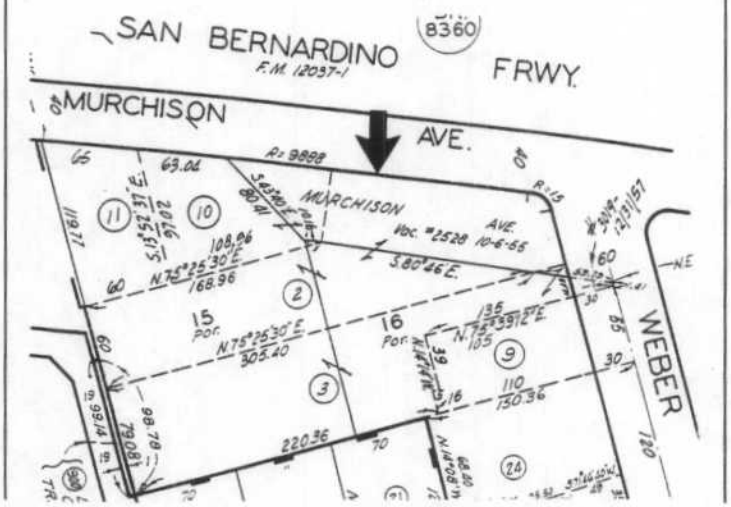
23. Evaluator _____
Date of evaluation _____

24. Survey type Caltrans Project Related

25. Survey name I-10 HOV Segment 4A

*26. Year form prepared 10/08/93
By (name) Francesca Smith
Organization Myra L. Frank & Assoc., Inc.
Address 811 West 7th Street, Suite 800
City & Zip Los Angeles, CA 90017
Phone (213) 627-5376

*Sketch map. Show location and boundaries of property in relation to nearby streets, railways, natural landmarks, etc. Name each feature.



State of California
DEPARTMENT OF TRANSPORTATION
ARCHITECTURAL INVENTORY/EVALUATION FORM

19-150398

___ LISTED	___ DETERMINED ELIGIBLE
___ APPEARS ELIGIBLE	X APPEARS INELIGIBLE

IDENTIFICATION AND LOCATION

1. Historic name _____
*2. Common or current name _____
*3. Number & street 1304 North Hamilton Boulevard Cross-corridor _____
City Pomona Vicinity only _____ Zip _____ County LAN
4. UTM zone _____ A _____ B _____ C _____ D _____
5. Quad map No. _____ Parcel No. 8358-006-035 Other Project APE Map 11, Site No. 2

DESCRIPTION

6. Property category Building. If district, number of documented resources _____
*7. Briefly describe the present physical appearance of the property, including condition, boundaries, related features, surroundings, and (if appropriate) architectural style.

The residential building located at 1304 North Hamilton Boulevard is a typical interpretation of the Colonial Revival style. The 1-story building is configured in an L, with intersecting gabled roof forms. The house is clad in clapboard, has a brick chimney and there is a stucco garage on the north side of the property. Alterations to the exterior of the house include minor changes to the porch area and the addition of aluminum awnings. The building is sited on a suburban lot, landscaped with mature trees, shrubs, and flowering plants.



8. Planning agency
Pomona Planning Dept.

9. Owner & address
Malvern D. Weathers
Ernestine W. Weathers
1304 N. Hamilton Blvd.
Pomona CA 91768-2431

10. Type of ownership Private

11. Present use Residential SF

12. Zoning R106 PO

13. Threats Project Related

*Complete these items for historic preservation compliance projects under Section 106 (36 CFR 800). All items must be completed for historical resources survey information.

19-150398

HISTORICAL INFORMATION

*14. Construction date(s) 1926 A. Original location _____ Date moved _____

15. Alterations & date Minor alterations to porch area and aluminum awnings added.

16. Architect _____ Builder _____

17. Historic attributes (with number from list) 02--Single Family Property

SIGNIFICANCE AND EVALUATION

18. Context for evaluation: Theme Residential Architecture Area Pomona
Period 1914-1929 Property type Colonial Revival Context formally developed? No.

*19. Briefly discuss the property's importance within the context. Use historical and architectural analysis as appropriate. Compare with similar properties.

The building located at 1304 North Hamilton Boulevard is a rather ordinary example of the Colonial Revival style. It was constructed in 1926, and similar examples are still commonplace in the Pomona area. Its overall architectural integrity has been diminished by alterations, particularly by the minor alterations to the front entrance area and the addition of aluminum awnings. Because of these alterations, and the common presence of other such examples in the area, the building does not appear eligible for inclusion in the National Register of Historic Places under Criterion C. Furthermore, there are no known associations with significant historic events or persons for it to be further considered for eligibility under either Criterion A or B.

20. Sources

21. Applicable National Register criteria Not Applicable

22. Other recognition _____
State Landmark No. (if applicable) _____

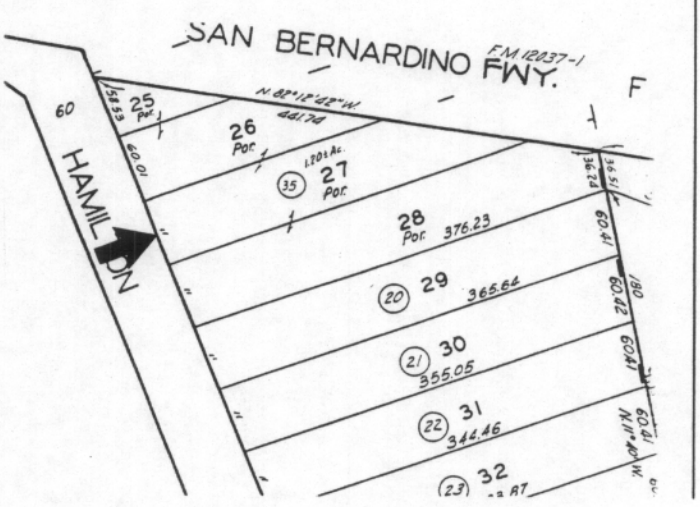
23. Evaluator _____
Date of evaluation _____

24. Survey type Caltrans Project Related

25. Survey name I-10 HOV Segment 4A

*26. Year form prepared 10/08/93
By (name) Francesca Smith
Organization Myra L. Frank & Assoc., Inc.
Address 811 West 7th Street, Suite 800
City & Zip Los Angeles, CA 90017
Phone (213) 627-5376

*Sketch map. Show location and boundaries of property in relation to nearby streets, railways, natural landmarks, etc. Name each feature.



State of California
DEPARTMENT OF TRANSPORTATION
ARCHITECTURAL INVENTORY/EVALUATION FORM

19-150399

HRI#092974

__ LISTED	__ DETERMINED ELIGIBLE
__ APPEARS ELIGIBLE	X APPEARS INELIGIBLE

IDENTIFICATION AND LOCATION

1. Historic name Speculative House for C. P. Stensgaard
*2. Common or current name
*3. Number & street 1314 North Huntington Boulevard Cross-corridor
City Pomona Vicinity only Zip County LAN
4. UTM zone A B C D
5. Quad map No. Parcel No. 8358-004-003 Other Project APE Map 12, Site No. 3

DESCRIPTION

6. Property category Building. If district, number of documented resources
*7. Briefly describe the present physical appearance of the property, including condition, boundaries, related features, surroundings, and (if appropriate) architectural style.

The residential building located at 1314 North Huntington Boulevard is a typical interpretation of the Spanish Eclectic style. The 1-story building is configured in a rectangular plan. Alterations to the exterior of the building include the application of a heavily textured stucco finish to exterior wall surface and the enclosure of the entry by aluminum awnings and security bars. The building is sited on a suburban lot, landscaped with mature trees, shrubs, and flowering plants.



8. Planning agency
Pomona Planning Dept.

9. Owner & address
Fermin Trujillo
Trujillo Evangelina
1314 N. Huntington Blvd.
Pomona CA 91768-2419

10. Type of ownership Private

11. Present use Residential SF

12. Zoning R3YY PO

13. Threats Project Related

*Complete these items for historic preservation compliance projects under Section 106 (36 CFR 800). All items must be completed for historical resources survey information.

19-150399

HISTORICAL INFORMATION

*14. Construction date(s) 1930 F. Original location _____ Date moved _____

15. Alterations & date Significant -- Stucco applied to exterior wall surface and porch enclosed

16. Architect _____ Builder Stensgaard, C. P.

17. Historic attributes (with number from list) 02--Single Family Property

SIGNIFICANCE AND EVALUATION

18. Context for evaluation: Theme Residential Architecture Area Pomona
Period 1930-1945 Property type Spanish Eclectic Context formally developed? No.

*19. Briefly discuss the property's importance within the context. Use historical and architectural analysis as appropriate. Compare with similar properties.

The building located at 1314 North Huntington Boulevard is a rather ordinary example of the Spanish Eclectic style. In 1930 it was constructed for an estimated cost of $3,500 as a speculative venture by builder C. P. Stensgaard. Stensgaard also built other homes in Pomona during this period, including the house located at 551 Burdick Drive. Similar examples of homes built in the early 1930s are still commonplace in the Pomona area. Its overall architectural integrity has been diminished by alterations, particularly by the heavily textured stucco application to the exterior wall surface and the porch enclosure. Because of these alterations, and the common presence of other such examples in the area, the building does not appear eligible for inclusion in the National Register of Historic Places under Criterion C. Furthermore, there are no known associations with significant historic events or persons for it to be further considered for eligibility under either Criterion A or B.

20. Sources
Pomona Dept. of Building & Safety, original permit No. 3240, Jan. 20, 1930.
TRW-REDI Property Data Disk, 1993.

21. Applicable National Register criteria Not Applicable

22. Other recognition _____
State Landmark No. (if applicable) _____

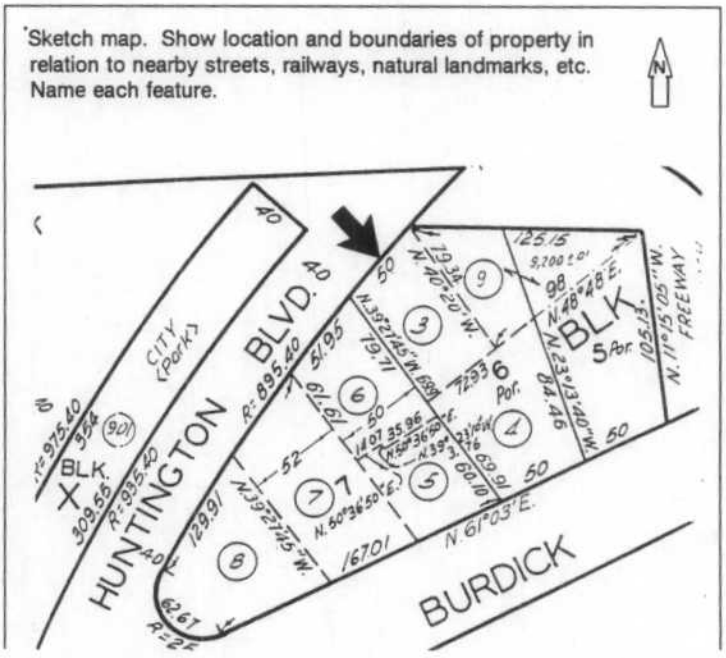
23. Evaluator _____
Date of evaluation _____

24. Survey type Caltrans Project Related

25. Survey name I-10 HOV Segment 4A

*26. Year form prepared 10/08/93
By (name) Francesca Smith
Organization Myra L. Frank & Assoc., Inc.
Address 811 West 7th Street, Suite 800
City & Zip Los Angeles, CA 90017
Phone (213) 627-5376

*Sketch map. Show location and boundaries of property in relation to nearby streets, railways, natural landmarks, etc. Name each feature.



State of California
DEPARTMENT OF TRANSPORTATION
ARCHITECTURAL INVENTORY/EVALUATION FORM

19-150400
HRI#092975

__ LISTED	__ DETERMINED ELIGIBLE
__ APPEARS ELIGIBLE	X APPEARS INELIGIBLE

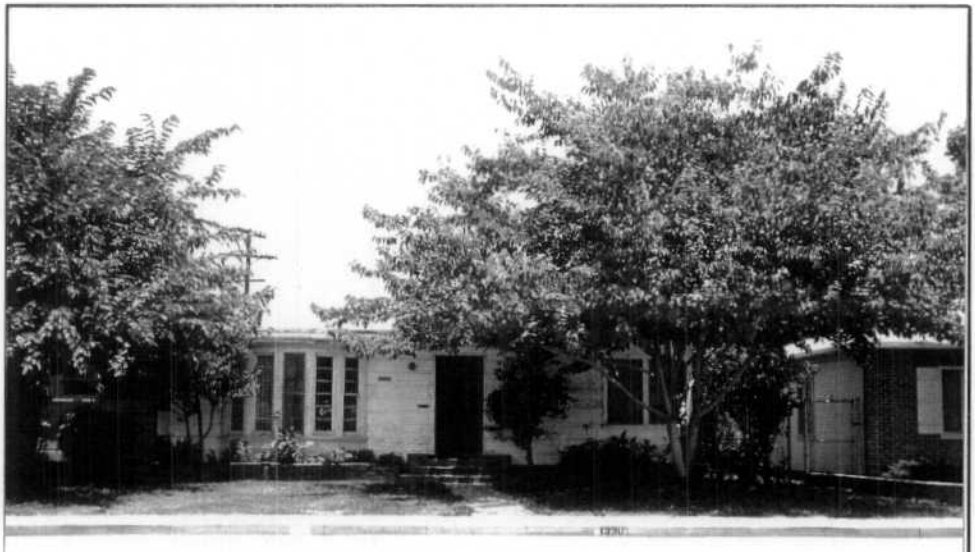
IDENTIFICATION AND LOCATION

1. Historic name House for Farrell Fikel
*2. Common or current name
*3. Number & street 1390 North Casa Vista Drive Cross-corridor
City Pomona Vicinity only Zip County LAN
4. UTM zone A B C D
5. Quad map No. Parcel No. 8358-007-019 Other Project APE Map 11, Site No. 4

DESCRIPTION

6. Property category Building. If district, number of documented resources
*7. Briefly describe the present physical appearance of the property, including condition, boundaries, related features, surroundings, and (if appropriate) architectural style.

The residential building located at 1390 North Casa Vista Drive is a typical interpretation of the Vernacular Cottage style with Colonial Revival influence. The 1-story building is configured in a rectangular plan, with a central entry and a bowed bay window. The house is clad in shiplap siding and has a hipped roof. On of the few alterations to the exterior is the addition of a security door. The building is sited on a suburban lot, landscaped with mature trees, shrubs, and flowering plants.



8. Planning agency
Pomona Planning Dept.

9. Owner & address
Farrell Fikel
Fikel Trust
1390 N. Casa Vista Dr.
Pomona CA 91768-2411

10. Type of ownership Private

11. Present use Residential SF

12. Zoning R106 PO

13. Threats Project Related

*Complete these items for historic preservation compliance projects under Section 106 (36 CFR 800). All items must be completed for historical resources survey information.

19-150400

HISTORICAL INFORMATION

*14. Construction date(s) 1940 F. Original location _____ Date moved _____

15. Alterations & date Security door.

16. Architect _____ Builder _____

17. Historic attributes (with number from list) 02--Single Family Property

SIGNIFICANCE AND EVALUATION

18. Context for evaluation: Theme Residential Architecture Area Pomona
Period 1930-1945 Property type Vernacular Cottage Context formally developed? No.

*19. Briefly discuss the property's importance within the context. Use historical and architectural analysis as appropriate. Compare with similar properties.

The building located at 1390 North Casa Vista Drive is a rather ordinary example of the Vernacular Cottage style. It was constructed in 1940 for Farrell Fikel for an estimated cost of $3500. Similar examples of houses from the early 1940s are still commonplace in the Pomona area. Its overall architectural integrity has not been diminished by alterations, only a security door has been added. Because of the common presence of other such examples in the area, the building does not appear eligible for inclusion in the National Register of Historic Places under Criterion C. Furthermore, there are no known associations with significant historic events or persons for it to be further considered for eligibility under either Criterion A or B.

20. Sources
Pomona Dept. of Building & Safety, original permit No. 9895, 8/28/1940.
TRW-Redi Property Data Disk, 1993.

21. Applicable National Register criteria Not Applicable

22. Other recognition _____
State Landmark No. (if applicable) _____

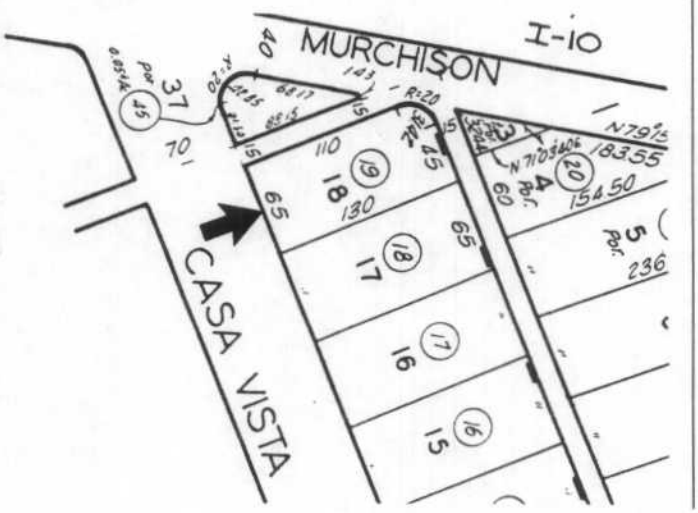
23. Evaluator _____
Date of evaluation _____

24. Survey type Caltrans Project Related

25. Survey name I-10 HOV Segment 4A

*26. Year form prepared 10/08/93
By (name) Francesca Smith
Organization Myra L. Frank & Assoc., Inc.
Address 811 West 7th Street, Suite 800
City & Zip Los Angeles, CA 90017
Phone (213) 627-5376

*Sketch map. Show location and boundaries of property in relation to nearby streets, railways, natural landmarks, etc. Name each feature.



State of California
DEPARTMENT OF TRANSPORTATION
ARCHITECTURAL INVENTORY/EVALUATION FORM

19-150401

HRI#092977

__ LISTED __ DETERMINED ELIGIBLE
__ APPEARS ELIGIBLE X APPEARS INELIGIBLE

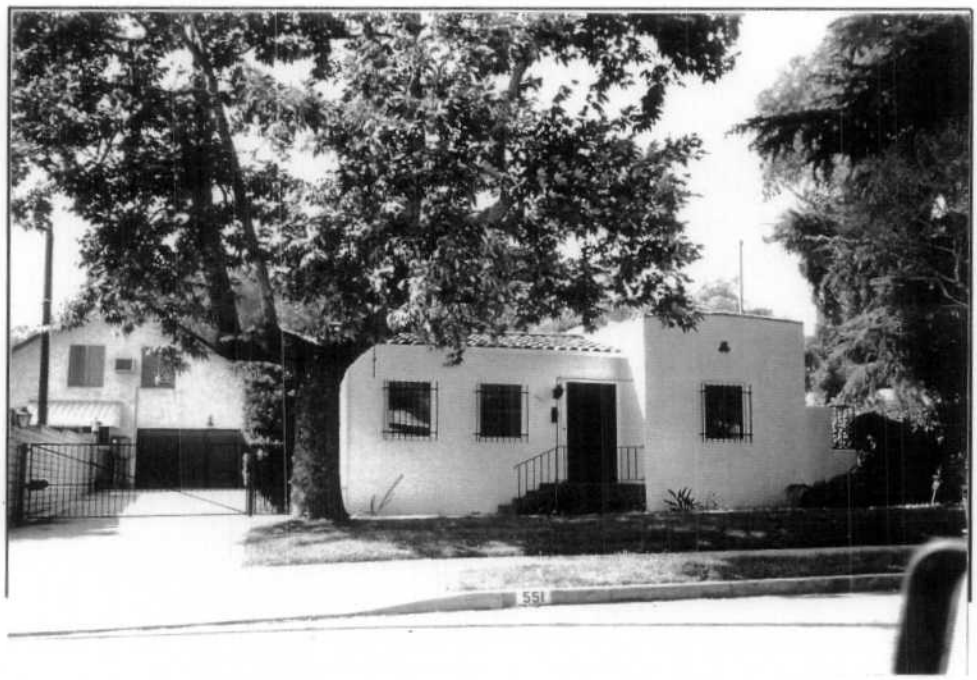
IDENTIFICATION AND LOCATION

1. Historic name House for C. P. Stensgaard
*2. Common or current name
*3. Number & street 551 East Burdick Drive Cross-corridor
City Pomona Vicinity only Zip County LAN
4. UTM zone A B C D
5. Quad map No. Parcel No. 8358-004-009 Other Project APE Map 12, Site No. 5

DESCRIPTION

6. Property category Building. If district, number of documented resources
*7. Briefly describe the present physical appearance of the property, including condition, boundaries, related features, surroundings, and (if appropriate) architectural style.

The residential building located at 551 East Burdick Drive is a typical interpretation of the Spanish Eclectic style with a Pueblo influence. The 1-story building is configured in a rectangular plan, with a slightly taller bay on the northeast side of the elevation. The combination side gabled and flat roof is finished in Spanish tiles. Alterations to the property include the construction of a large stucco finished garage at the rear of the property as well as a security door and window bars. The building is sited on a suburban lot, landscaped with mature trees and shrubs.



8. Planning agency
Pomona Planning Dept.

9. Owner & address
Charles C. Burkhart
Charles C Burkhart Trust
551 E. Burdick Dr.
Pomona CA 91768-2414

10. Type of ownership Private
11. Present use Residential SF
12. Zoning R3* PO
13. Threats Project Related

*Complete these items for historic preservation compliance projects under Section 106 (36 CFR 800). All items must be completed for historical resources survey information.

19-150401

HISTORICAL INFORMATION

*14. Construction date(s) 1929 F. Original location _____ Date moved _____

15. Alterations & date Security door & windows. Large garage clad in stucco at rear.

16. Architect _____ Builder Stensgaard, C. P.

17. Historic attributes (with number from list) 02--Single Family Property

SIGNIFICANCE AND EVALUATION

18. Context for evaluation: Theme Residential Architecture Area Pomona
Period 1914-1929 Property type Spanish Eclectic Context formally developed? No.

*19. Briefly discuss the property's importance within the context. Use historical and architectural analysis as appropriate. Compare with similar properties.

The building located at 551 East Burdick Drive is a rather ordinary example of the Spanish Eclectic style. On November 6, 1929 a building permit was issued to owner C. P. Stensgaard for its construction at an estimated cost of $3,500. This was probably a speculative development, because Stensgaard was known to build other homes in Pomona, including that at 1314 Huntington Boulevard. Similar examples of houses from the late 1920s are still commonplace in the Pomona area. Its overall architectural integrity has been diminished by alterations, particularly by the construction of the large stucco, gable roofed garage at the rear of the property but less so by security door and window bars. Because of these alterations, and the common presence of other such examples in the area, the building does not appear eligible for inclusion in the National Register of Historic Places under Criterion C. Furthermore, there are no known associations with significant historic events or persons for it to be further considered for eligibility under either Criterion A or B.

20. Sources
Pomona Dept. of Building & Safety, original permit No. 3087, Nov. 6, 1929.
TRW Redi Property Data Disk system, 1993.

21. Applicable National Register criteria Not Applicable

22. Other recognition _____
State Landmark No. (if applicable) _____

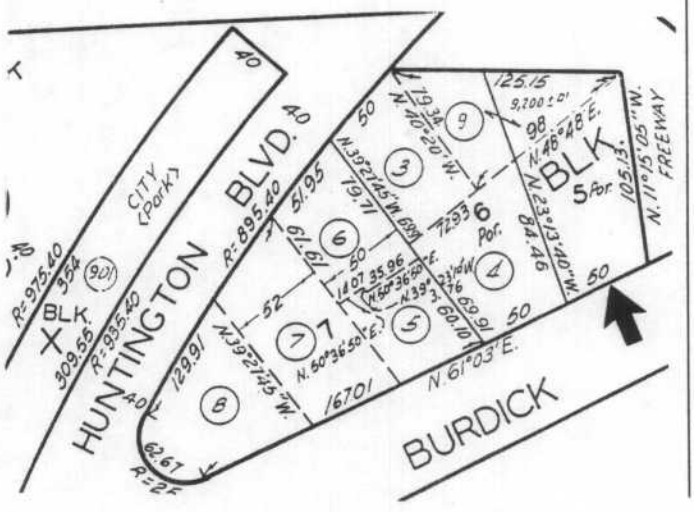
23. Evaluator _____
Date of evaluation _____

24. Survey type Caltrans Project Related

25. Survey name I-10 HOV Segment 4A

*26. Year form prepared 10/08/93
By (name) Francesca Smith
Organization Myra L. Frank & Assoc., Inc.
Address 811 West 7th Street, Suite 800
City & Zip Los Angeles, CA 90017
Phone (213) 627-5376

*Sketch map. Show location and boundaries of property in relation to nearby streets, railways, natural landmarks, etc. Name each feature.



19-150404

State of California
DEPARTMENT OF TRANSPORTATION
ARCHITECTURAL INVENTORY/EVALUATION FORM

HRI#092982

__ LISTED	__ DETERMINED ELIGIBLE
__ APPEARS ELIGIBLE	X APPEARS INELIGIBLE

IDENTIFICATION AND LOCATION

1. Historic name
*2. Common or current name
*3. Number & street 493 East Kenoak Place Cross-corridor
City Pomona Vicinity only Zip County LAN
4. UTM zone A B C D
5. Quad map No. Parcel No. 8359-021-010 Other Project APE Map 12, Site No. 8

DESCRIPTION

6. Property category Building. If district, number of documented resources
*7. Briefly describe the present physical appearance of the property, including condition, boundaries, related features, surroundings, and (if appropriate) architectural style.

The residential building located at 493 East Kenoak Place is a typical interpretation of the Craftsman style with some Colonial Revival elements such as the brick base. The 2-story building is configured in an irregular plan and the asymmetry of the composition is exaggetated by the side entrance and the bay windows on opposite sides of the 1st and 2nd floors. The long, shed roofed front porch is entered from the east side and a gabled form with curved knee braces graces the top of the porch. The long porch rests on a brick foundation, rising in the from of capped square piers which support square posts. The exterior is virtually unaltered except for the addition of aluminum awnings. The large residence is sited on a suburban corner lot, landscaped with mature trees, on a street which was bisected by the construction of the Interstate 10 freeway.



8. Planning agency Pomona Planning Dept.
9. Owner & address State St Bank & Trust Co
10. Type of ownership State
11. Present use Residential SF
12. Zoning R17200* PO
13. Threats Project Related

*Complete these items for historic preservation compliance projects under Section 106 (36 CFR 800). All items must be completed for historical resources survey information.

19-150404

HISTORICAL INFORMATION

*14. Construction date(s) 1909 A. Original location _____ Date moved _____

15. Alterations & date Aluminum awnings added, otherwise unaltered.

16. Architect _____ Builder _____

17. Historic attributes (with number from list) 02--Single Family Property

SIGNIFICANCE AND EVALUATION

18. Context for evaluation: Theme Residential Architecture Area Pomona
Period 1893-1913 Property type Craftsman Context formally developed? No.

*19. Briefly discuss the property's importance within the context. Use historical and architectural analysis as appropriate. Compare with similar properties.

The building located at 493 East Kenoak Place is a good example of the Craftsman style. It was constructed in 1909. Similar examples are still relatively commonplace in the Pomona area. Its overall architectural integrity has not been diminished by alterations, although aluminum awnings were added. Because of the common presence of other such examples in the area, the building does not appear eligible for inclusion in the National Register of Historic Places under Criterion C. Furthermore, there are no known associations with significant historic events or persons for it to be further considered for eligibility under either Criterion A or B.

20. Sources

21. Applicable National Register criteria Not Applicable

22. Other recognition _____
State Landmark No. (if applicable) _____

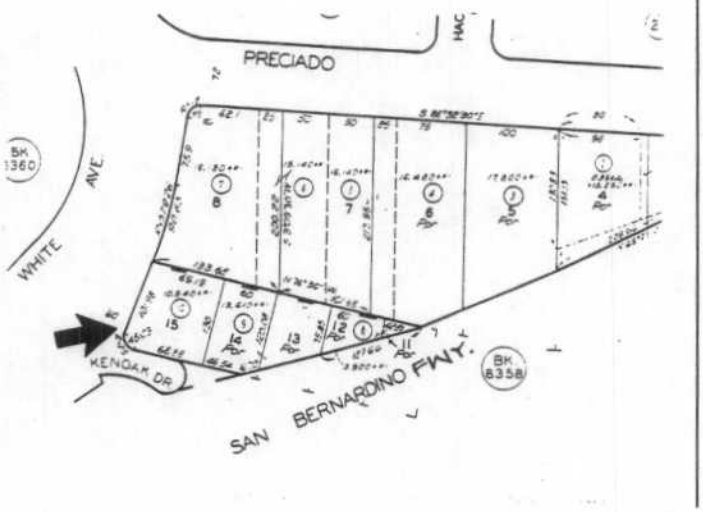
23. Evaluator _____
Date of evaluation _____

24. Survey type Caltrans Project Related

25. Survey name I-10 HOV Segment 4A

*26. Year form prepared 10/08/93
By (name) Francesca Smith
Organization Myra L. Frank & Assoc., Inc.
Address 811 West 7th Street, Suite 800
City & Zip Los Angeles, CA 90017
Phone (213) 627-5376

*Sketch map. Show location and boundaries of property in relation to nearby streets, railways, natural landmarks, etc. Name each feature.



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # _____
HRI # 19-186112
Trinomial _____
NRHP Status Code _____
Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 of 12 *Resource Name or #: (Assigned by Recorder) C-Los Angeles-A-1

P1. Other Identifier: Union Pacific Railroad, Southern Pacific Railroad

*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County Los Angeles and ~~Orange~~ Riverside, San Bernardino

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad see below Date _____ T _____; R _____; ___ ¼ of ___ ¼ of Sec ___; _____ B.M.

c. Address _____ City _____ Zip _____

d. UTM: (Give more than one for large and/or linear resources) Zone: _____; _____ mE/ _____ mN

e. Other Locational Data: (e.g. parcel #, directions to resource, elevation, etc., as appropriate)

This segment of the railroad is located on the following USGS quads: Los Angeles (1966, PR 1981), El Monte (PR 1994), Baldwin Park (PR 1981), La Habra (PR 1981), San Dimas (PR 1981), Ontario (PR 1981), Guasti (PR 1981), Fontana (PR 1980), and San Bernardino South (PR 1980).

*P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

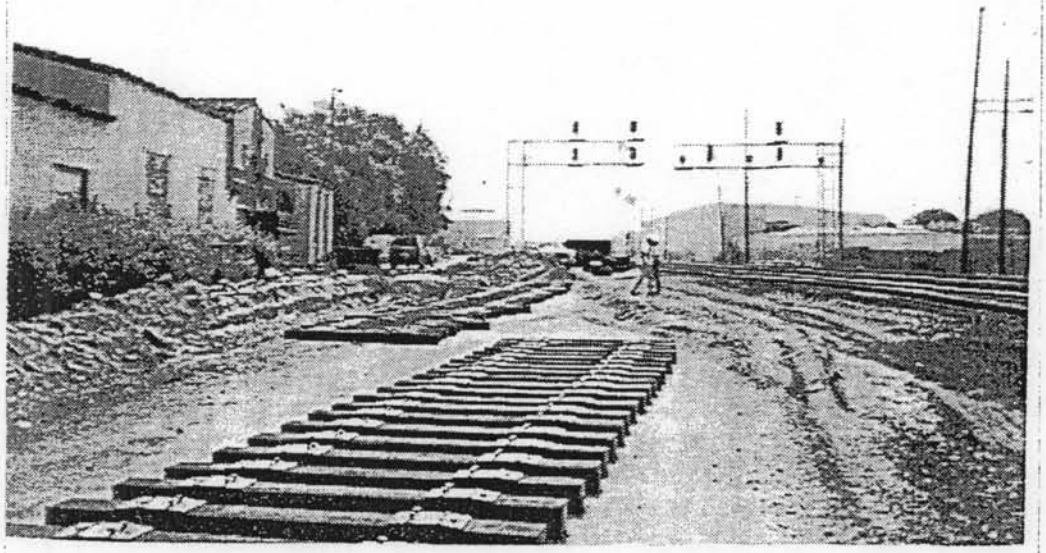
The Union Pacific Railroad (hsitorically the Southern Pacific Railroad) is a standard gauge railroad which runs through the Los Angeles area. It is part of a larger resource, the Union Pacific Railroad line. Numerous associated features include railroad stations, sidings, spurs, and railyards.

The rail lines that were included in our survey areas were all acquired by Union Pacific, but were originally other railroad lines. These include the Southern Pacific, and the Los Angeles and Salt Lake Railroad. The Southern Pacific through Los Angeles area was constructed in the 1870s, and originally ran south from Los Angeles through Watts and Compton to Willmington, and east from Los Angeles through Alhambra, San Gabriel, Puente, Pomona and on through Colton before heading toward Yuma. (See continuation sheet.)

*P3b. Resource Attributes: (List attributes and codes) HP39. Other - Railroad

*P4. Resources present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)



P5b. Description of Photo: (View, date, accession #) _____

*P6. Date Constructed/Age and Sources: ☒ Historic ☐ Prehistoric ☐ Both
1870s - present

*P7. Owner and Address:
Union Pacific Railroad

*P8. Recorded by: (Name, affiliation, and address) S. Ashkar
Jone s & Stokes Associates, Inc.
2600 V Street, Suite 100
Sacramento, CA 95818

*P9. Date Recorded: 6/22/99

*P10. Survey Type: (Describe)
Cursory and Intensive pedestrian surveys

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Jones & Stokes. 1999. Cultural Resources Inventory for the Williams Communication Fiber Optic alignment between Los Angeles and Riverside, Los Angeles and Riverside Counties, California.

*Attachments: NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List): _____

DPR 523A (1/95) *Required Information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Primary #
HRI # 19-186112

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 2 of 12 *NRHP Status Code

*Resource Name or # (Assigned by recorder) C-Los Angeles-A-1

B1. Historic Name: Southern Pacific Railroad

B2. Common Name: Union Pacific Railroad

B3. Original Use: railroad B4. Present Use: railroad

*B5. Architectural Style:

*B6. Construction History: (Construction date, alterations, and date of alterations)

Major portion of track and associated spurs, sidings, and station were constructed between 1869 and 1905. The tracks are currently in use and maintenance and replacement continue.

*B7. Moved? [X] No [ ] Yes [ ] Unknown Date: Original Location:

*B8. Related Features:

Numerous sidings; spurs, stations and railyards

B9a. Architect: b. Builder:

*B10. Significance: Theme: Railroad Area: California, U.S.

Period of Significance: 1869 to present Property Type: railroad Applicable Criteria: A, B

(Discuss imporance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Portions of this railroad are additions to the first transcontinental railroad. Other portions were instrumental in the development of Los Angeles and other communities as business centers. The modern Union Pacific Railroad system is made up of other, often smaller historic railroads that helped to form the economy and population of Southern California. The rail system enabled the transportation of goods to ports and the emmigration of large numbers of people. The railroad is also associated with a number of important historical figures, including the Big Four (Mark Hopkins, Collis P. Huntington, Leland Stanford, and Charles Crocker). Therefore, the historic railroad is eligible for NRHP listing under Criteria A and B.

B11. Additional Resource Attributes: (List attributes and codes)

*B12. References:

B13. Remarks:

(Sketch Map with north arrow required.)

*B14.Evaluator: S. Ashkar Jones & Stokes

2600 V Street, Suite 100 Sacramento, CA 95818-1914

*Date of Evaluation: 6/22/99

(This space reserved for official comments.)

P3a. Description

Another Southern Pacific Line headed southeast from Watts through Norwalk and Buena Park to Santa Ana.

The San Pedro, Los Angeles and Salt Lake Railroad Company was formed in 1901 for the purpose of constructing a rail line between Los Angeles and Salt Lake City. The line formally opened on May 1, 1905. The line extended north from Los Angeles to Las Vegas and on to Salt Lake City. Other lines ran from Los Angeles south to Wilmington via Bells and Workman, and east from Los Angeles through Pico, Clayton, paralleling the Southern Pacific line through Walnut, Sprada and Ontario and dipping south from there towards Riverside. The name was shortened to the Los Angeles and Salt Lake in 1916. In 1921, the line became the southwestern arm of the Union Pacific. (Fickewirth 1992; Hofsommer 1986; Myrick 1992.)

The Southern Pacific eventually absorbed the smaller rail lines and the Southern Pacific emerged as the name for the system in 1884 when the Southern Pacific Company of Kentucky was incorporated.

References:

Fickewirth, A. A. 1992. *California Railroads*. Golden West Books. San Marino, California

Hofsommer, Don L. 1986. *The Southern Pacific, 1901-1985*. Texas A & M University Press. College Station, Texas.

Myrick, D. F. 1992. *Railroads of Nevada and Eastern California. Volume II. Southern Roads*. University of Nevada Press. Reno, Nevada.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

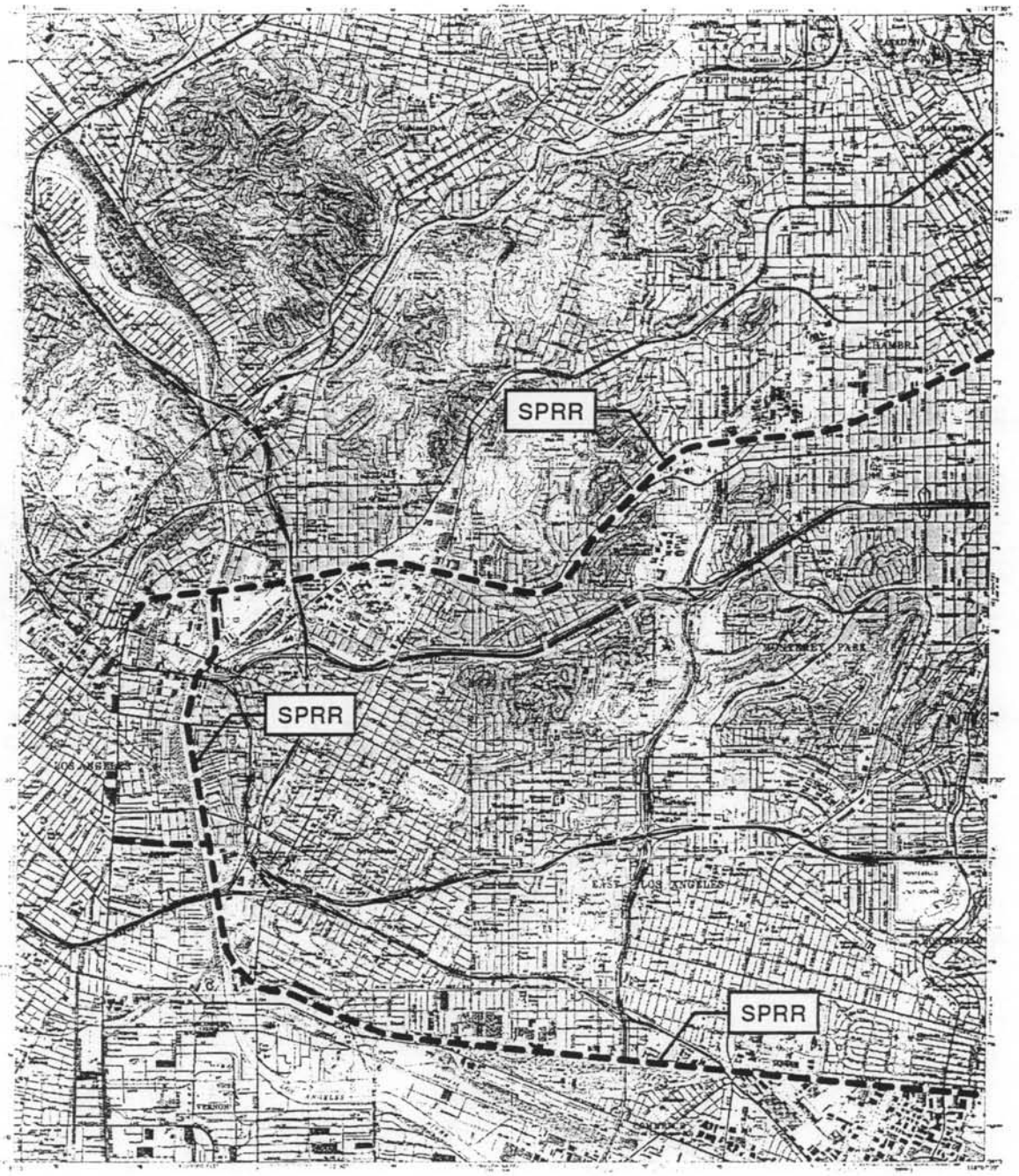
LOCATION MAP

Primary # 19-186112
HRI #
Trinomial

Page 4 of 12

*Resource Name or #: C-Los Angeles - A-1: Southern Pacific Railroad

*Map Name: Los Angeles, California *Scale: 1:80,000 (1"=6,666') *Date of Map: MR 1994





0 5,000
feet
Scale = 1:80,000
Base map: USGS 7.5'-series Los Angeles, California, quadrangle (1966, MR 1994)

TN mN

DPR 523J (1/95)

*Required Information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

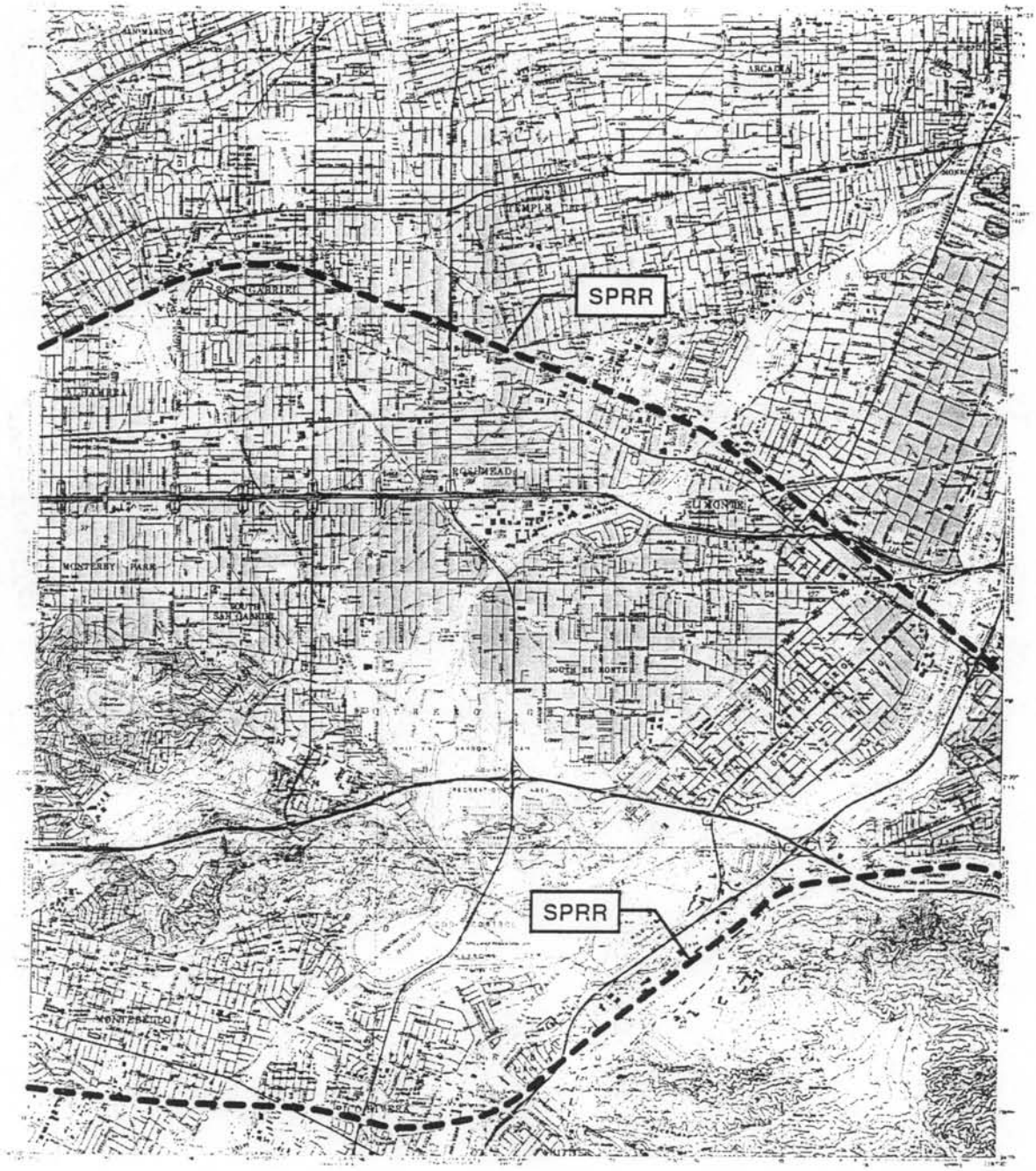
LOCATION MAP

Primary # 19-186112
HRI #
Trinomial

Page 5 of 12

*Resource Name or #: C-Los Angeles - A-1: Southern Pacific Railroad

*Map Name: El Monte, California *Scale: 1:80,000 (1"=6,666') *Date of Map: MR 1994





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feet
Scale = 1:80,000
Base map: USGS 7.5'-series El Monte, California, quadrangle (1966, MR 1994)

TN — N

DPR 523J (1/95)

*Required information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

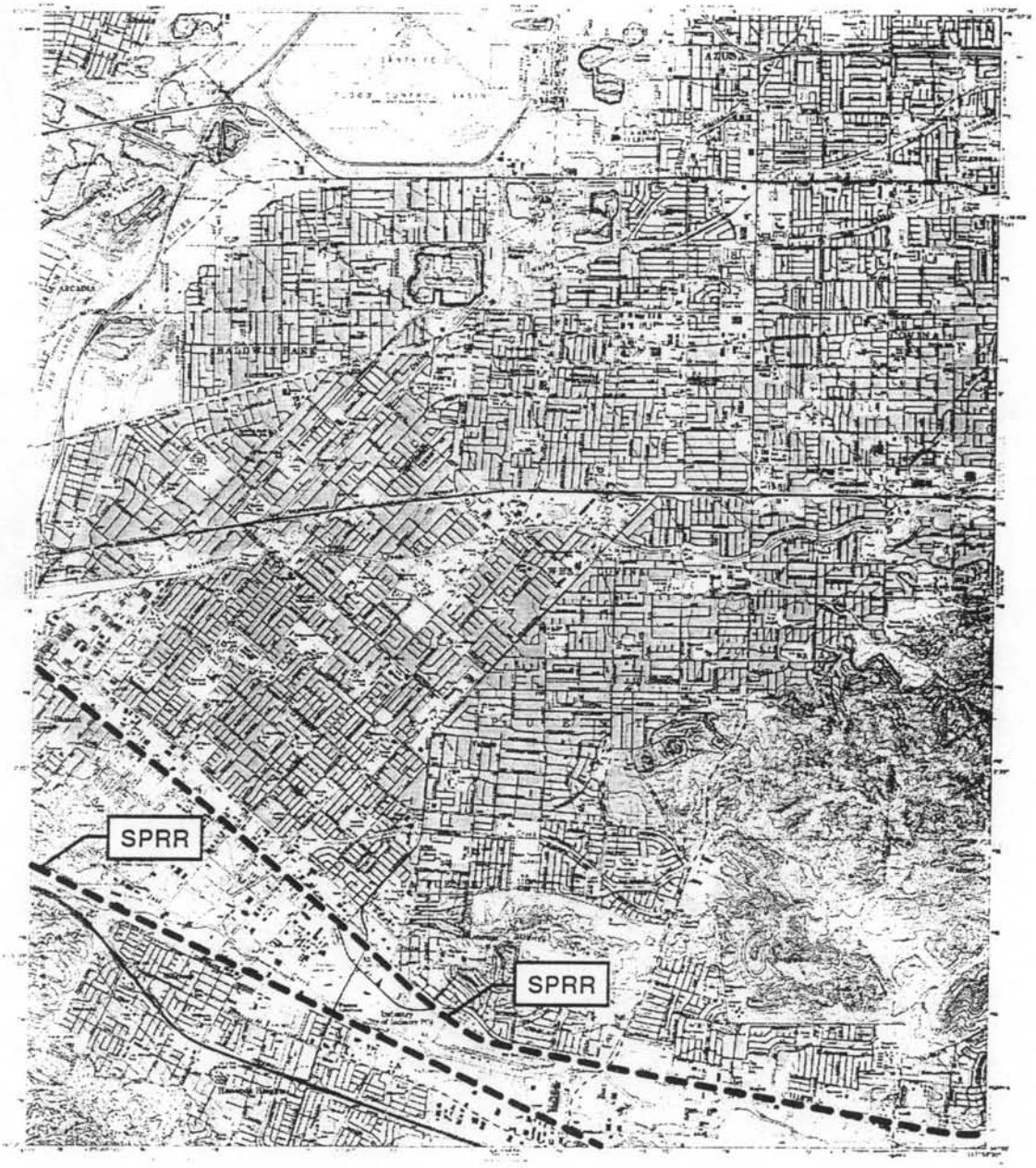
LOCATION MAP

Primary # _____
HRI # 19-186112
Trinomial _____

Page 6 of 12

*Resource Name or #: C-Los Angeles - A-1; Southern Pacific Railroad

*Map Name: Baldwin Park, California *Scale: 1:80,000 (1"=6,666') *Date of Map: PR 1981





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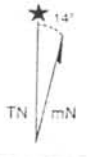
feet
Scale = 1:80,000

Base map: USGS 7.5-series Baldwin Park, California, quadrangle (1966, PR 1981)



DPR 523J (1/95)

*Required information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

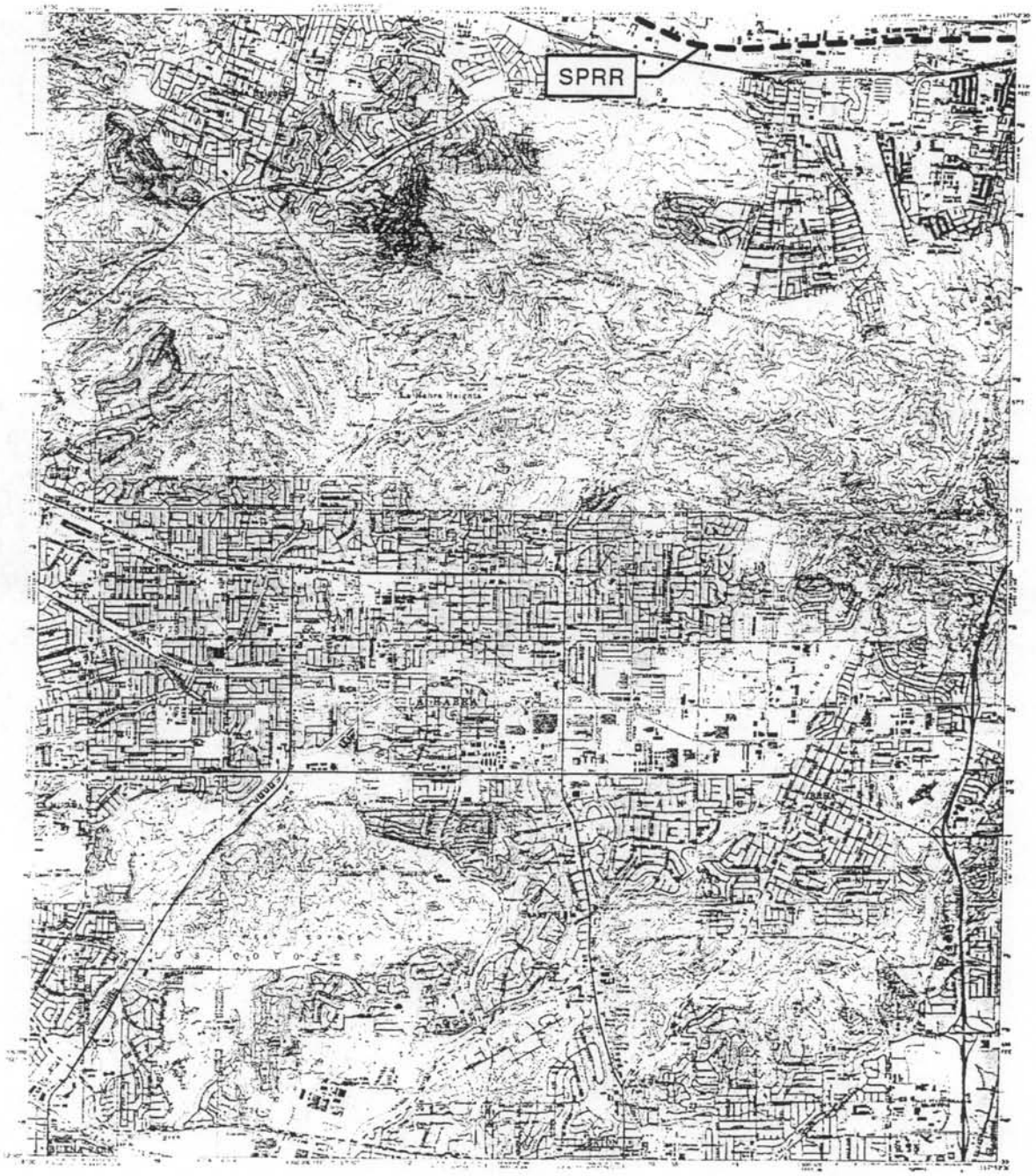
LOCATION MAP

Primary # 19-186112
HRI #
Trinomial

Page 7 of 12

*Resource Name or #: C-Los Angeles - A-1; Southern Pacific Railroad

*Map Name: La Habra, California *Scale: 1:80,000 (1"=6,666') *Date of Map: PR 1981





0 5,000
feet
Scale = 1:80,000

Base map: USGS 7.5'-series La Habra, California, quadrangle (1964, PR 1981)



DPR 523J (1/95)

*Required information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

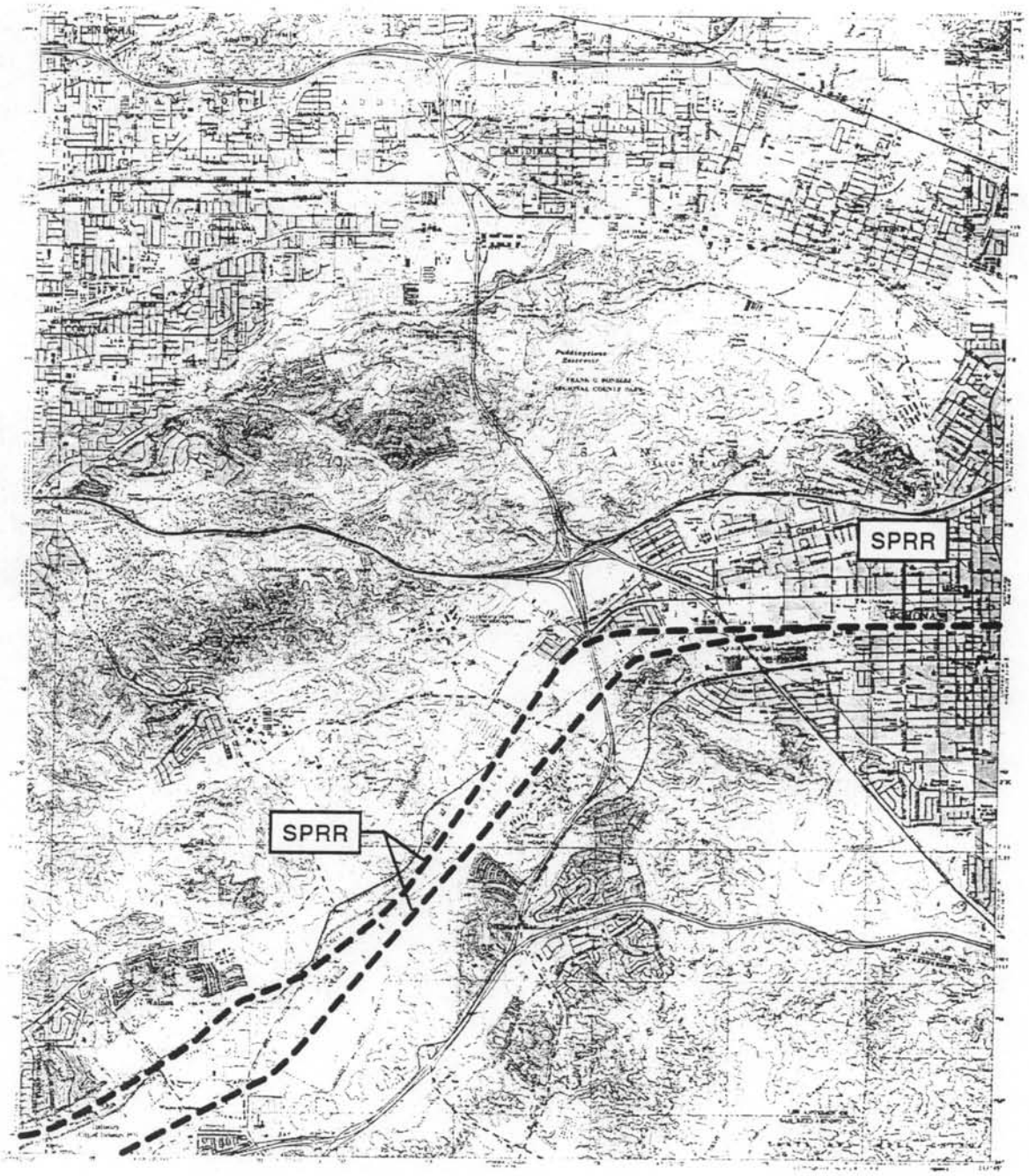
LOCATION MAP

Primary # 19-186112
HRI #
Trinomial

Page 8 of 12

*Resource Name or #: C-Los Angeles - A-1; Southern Pacific Railroad

*Map Name: San Dimas, California *Scale: 1:80,000 (1"=6,666') *Date of Map: PR 1981





0 5,000
feet
Scale = 1:80,000

Base map: USGS 7.5'-series San Dimas, California, quadrangle (1966, PR 1981)



DPR 523J (1/95)

*Required information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

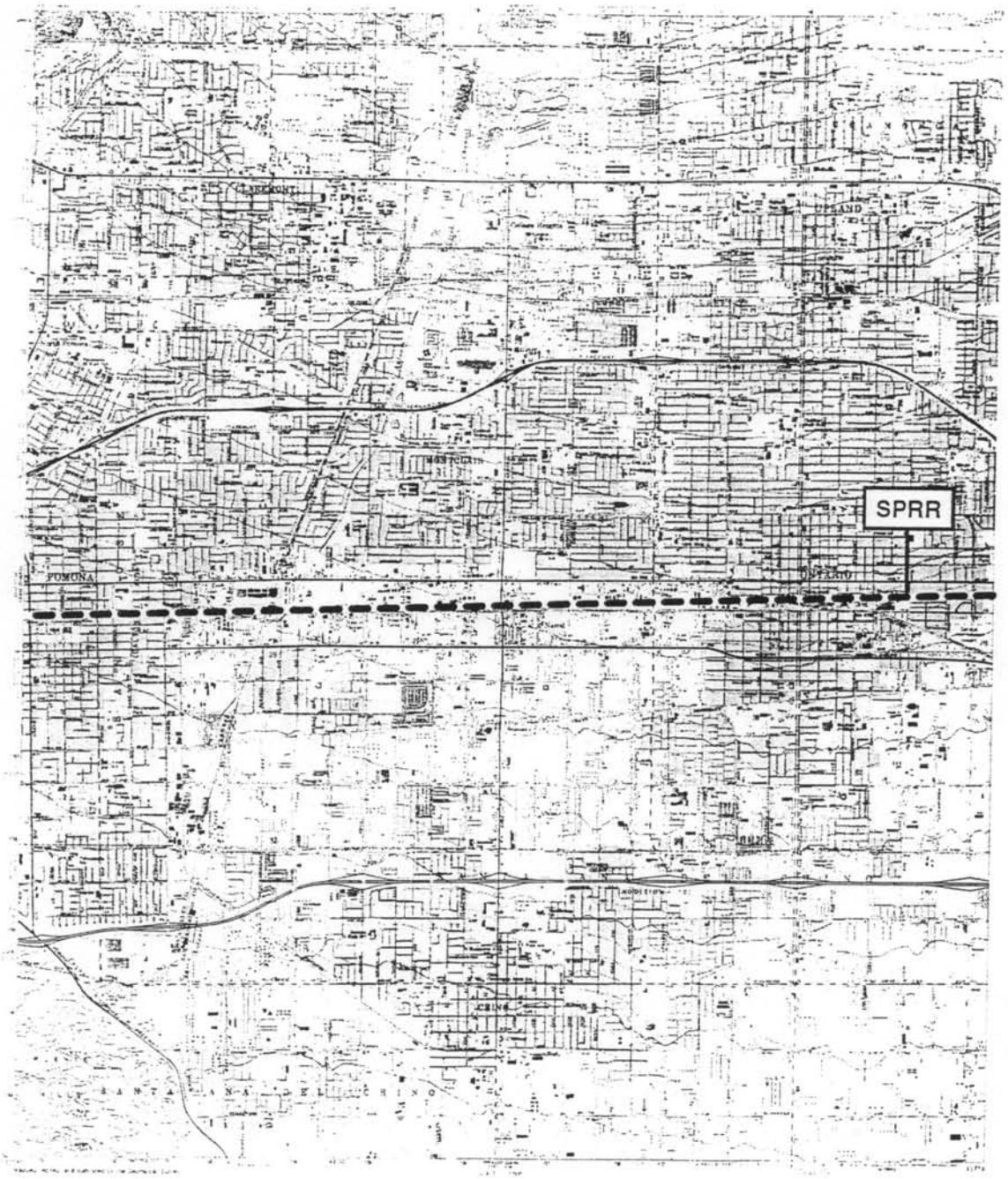
LOCATION MAP

Primary # 19-186112
HRI #
Trinomial

Page 9 of 12

*Resource Name or #: C-Los Angeles - A-1: Southern Pacific Railroad

*Map Name: Ontario, California *Scale: 1:80,000 (1"=6.666') *Date of Map: PR 1981





0 5,000
feet
Scale = 1:80,000
Base map: USGS 7.5-series Ontario, California, quadrangle (1967, PR 1981)



DPR 523J (1/95)

*Required information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

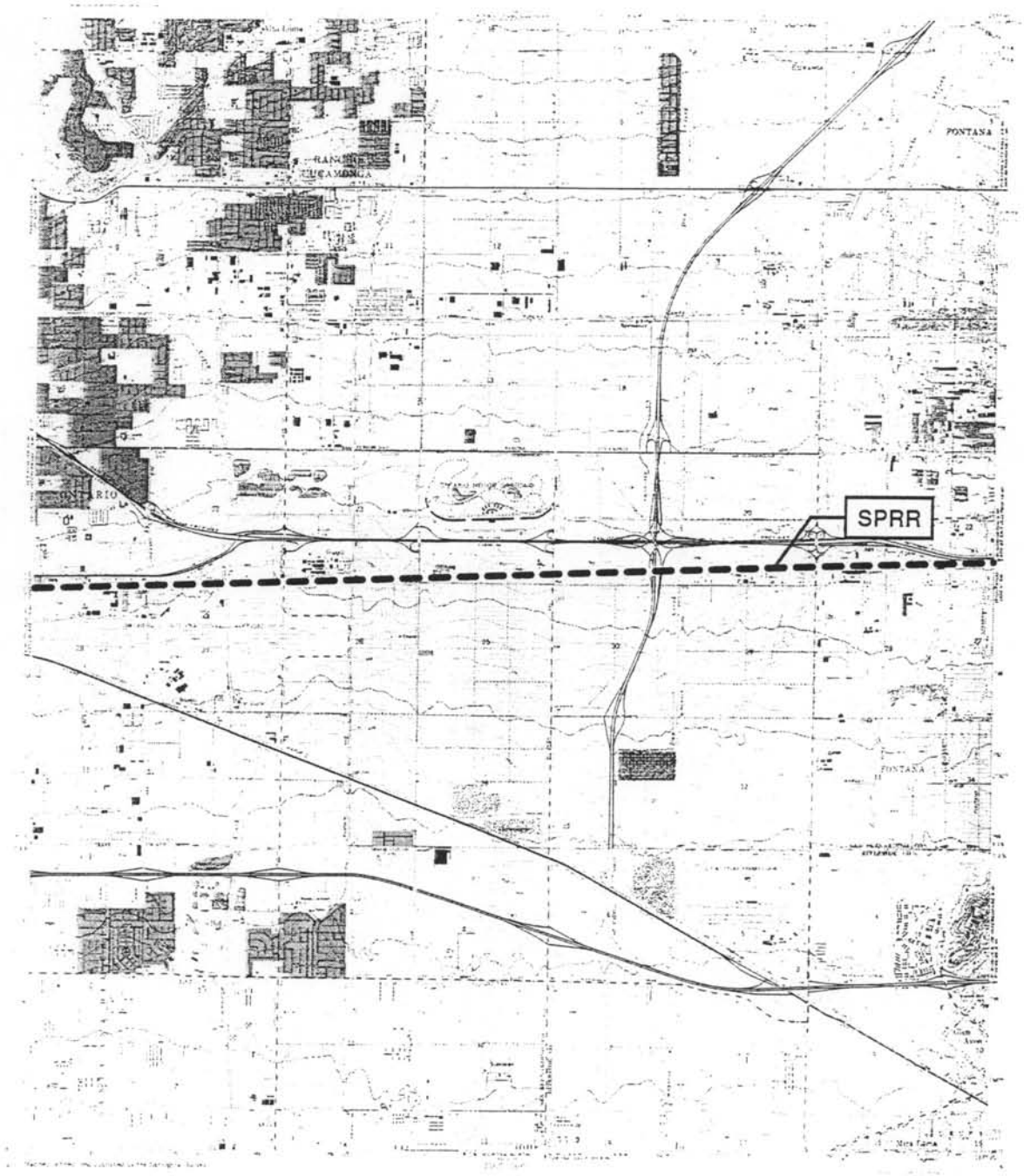
LOCATION MAP

Primary # 19-186112
HRI #
Trinomial

Page 10 of 12

*Resource Name or #: C-Los Angeles - A-1; Southern Pacific Railroad

*Map Name: Guasti, California *Scale: 1:80,000 (1"=6.666') *Date of Map: PR 1981





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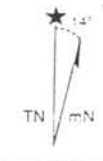
feet
Scale = 1:80,000
Base map: USGS 7.5'-series Guasti, California, quadrangle (1966, PR 1981)



DPR 523J (1/95)

*Required information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

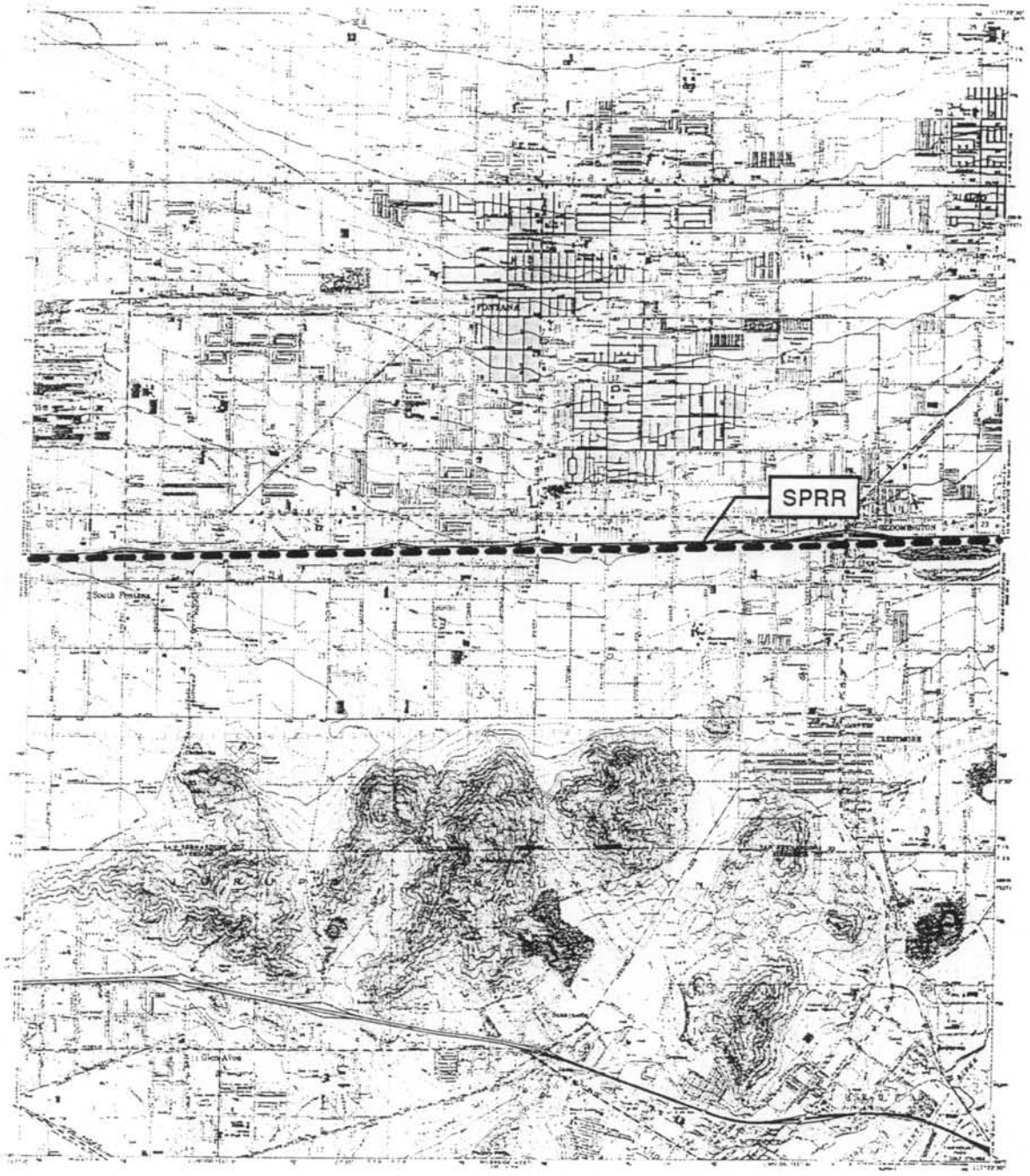
LOCATION MAP

Primary # _____
HRI # 19-186112
Trinomial _____

Page 11 of 12

*Resource Name or #: C-Los Angeles - A-1; Southern Pacific Railroad

*Map Name: Fontana, California *Scale: 1:80,000 (1"=6,666') *Date of Map: PR 1980





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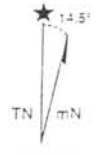
feet
Scale = 1:80,000
Base map: USGS 7.5'-series Fontana, California, quadrangle (1967, PR 1980)



DPR 523J (1/95)

*Required information

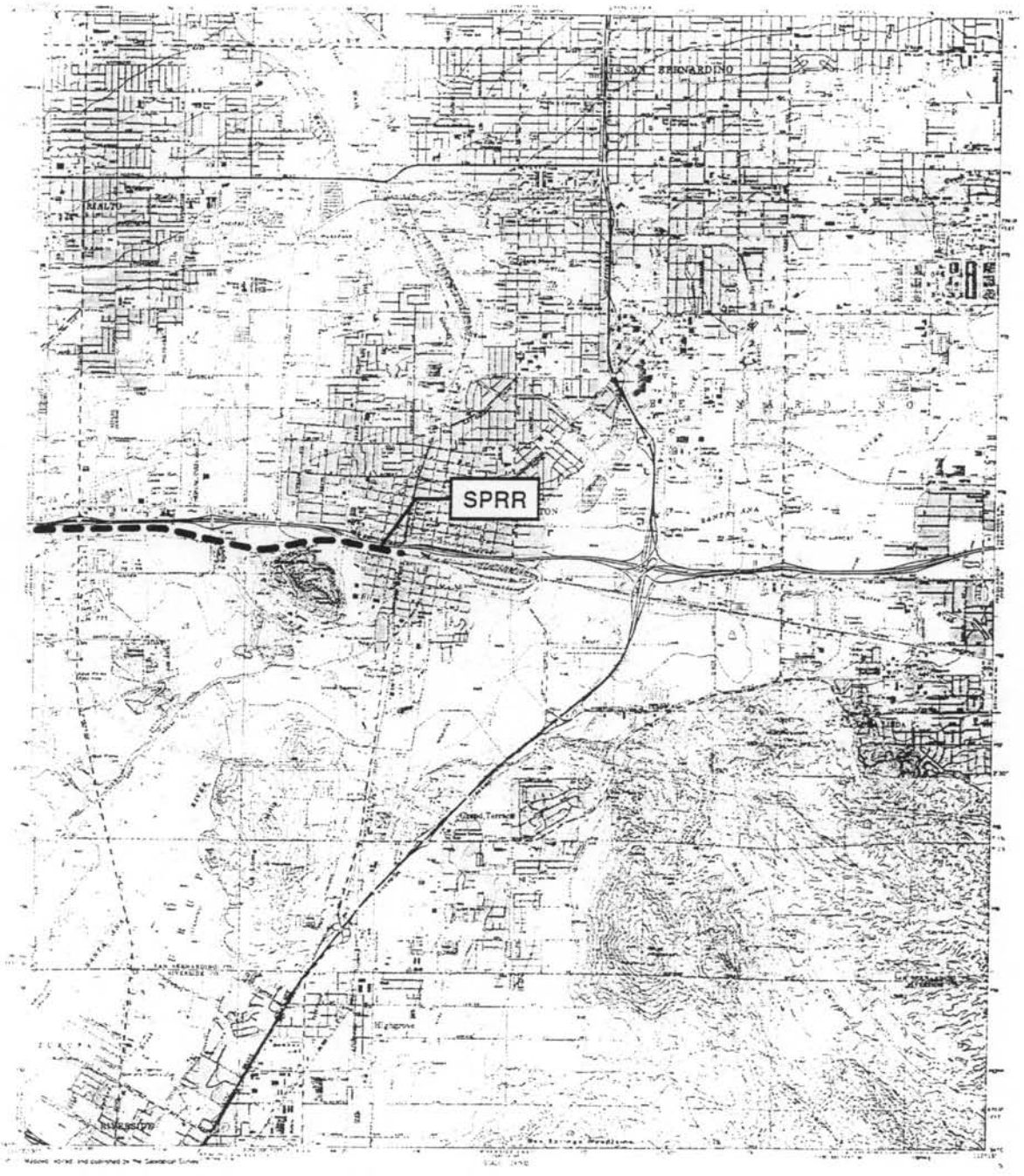
State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186112
HRI #
Trinomial

*Resource Name or #: C-Los Angeles - A-1: Southern Pacific Railroad

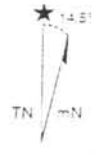
*Map Name: San Bernardino South, California *Scale: 1:80,000 (1"=6.666') *Date of Map: PR 1980





0 5,000
feet
Scale = 1:80,000

Base map: USGS 7.5'-series San Bernardino, California, quadrangle (1967, PR 1980)



*Required information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code 6
Other Listings _____
Review Code _____ Reviewer _____ Date _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

P1. Other Identifier: Southern Pacific Los Angeles Division; Union Pacific Railroad

***P2. Location:** ☐ Not for Publication ☒ Unrestricted *a. County Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** See Continuation Sheet **T**___; **R** ___; __ ¼ **of Sec** ___; _____ **B.M.**

c. Address _____ City _____ Zip _____

d. UTM: (give more than one for large and/or linear resources) See Linear Feature Records

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

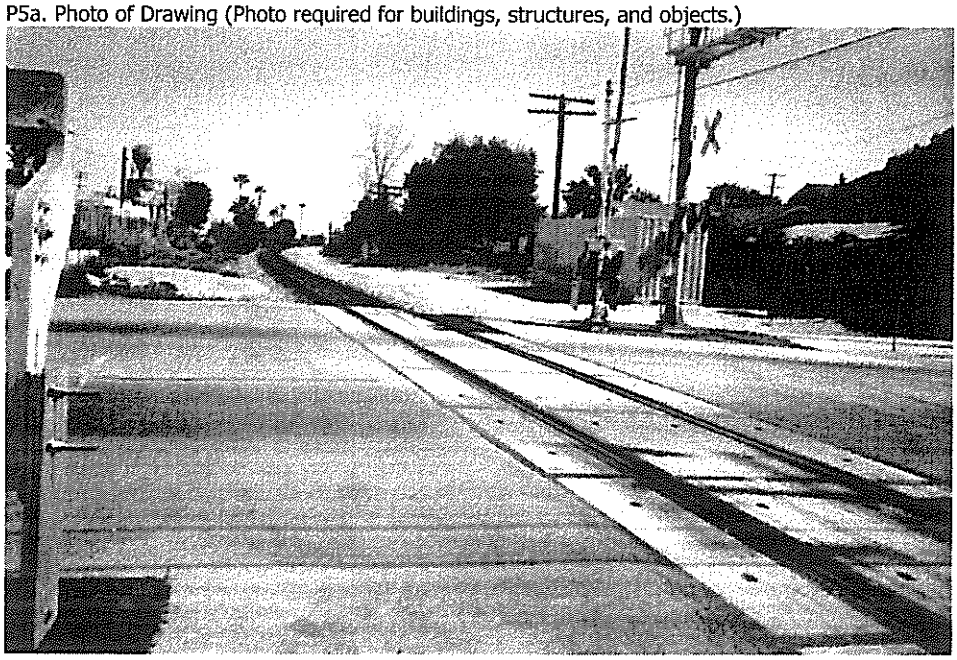
***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This form treats an approximately 26.5-mile section of what was once known as the Southern Pacific Railroad's (SPRR) Los Angeles Division. This railroad travels northwest from Yuma, Arizona through California's Imperial Valley, over the San Bernadino Mountains into the San Gabriel Valley and west to terminate in Los Angeles. This form addresses only that portion running between the towns of Pomona and San Gabriel in Los Angeles County. The SPRR constructed this standard gauge line between 1874 and 1877, making it only the third railroad to be built in the Los Angeles area, the first being the Los Angeles & San Pedro, which was constructed in 1869, and the second the Southern Pacific line from the San Joaquin Valley completed in 1876, which was the first to provide Los Angeles with transcontinental shipping capabilities. The Union Pacific Railroad gained control of this line when they acquired SPRR in 1996. For most of the section within the study area, the railroad consists of a single set of tracks, occasionally splitting into two parallel sets, or the main track and a spur line. Its tracks, rails, and ballast have all been replaced over the years, and modern grade crossing and safety equipment installed.

***P3b. Resource Attributes:** (List attributes and codes) (AH7) Railroad grade; (HP39) Railroad grade

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photo of Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #) **Photograph 1**; Crossing #4, at Del Mar Road; Camera facing east; March 4, 2002

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1874-1877; John R. Signor, *Southern Pacific Lines, Pacific Lines Stations Volume 1* (Pasadena, CA: Southern Pacific Historical and Technical Society, 1997).

***P7. Owner and Address:**
Union Pacific Railroad
Omaha, Nebraska

***P8. Recorded by:** (Name, affiliation, address)
Rand F. Herbert, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

***P9. Date Recorded:** March 4, 2002

***P10. Survey Type:** (Describe): Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting Services, "Grade Separations Within the Alameda Corridor-East Project, Los Angeles County, California," 1999

***Attachments:** NONE ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☒ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (list) _____

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary # _____
HRI # _____

*NRHP Status Code 6

*Resource Name or # Southern Pacific Los Angeles Division San Gabriel - Pomona

B1. Historic Name: Southern Pacific Railroad, Los Angeles Division
B2. Common Name: Union Pacific Railroad
B3. Original Use: Railroad B4. Present Use: Railroad
*B5. Architectural Style: None
*B6. Construction History: (Construction date, alteration, and date of alterations) Constructed between 1874 and 1877; modernization and replacement of equipment, rails, ballast, ties, etc. part of routine maintenance.

*B7. Moved? ☒ No ☐ Yes ☐ Unknown Date: _____ Original Location: _____
*B8. Related Features: See Description, P3a.

B9. Architect: N/A b. Builder: Southern Pacific Railroad
*B10. Significance: Theme n/a Area n/a
Period of Significance n/a Property Type n/a Applicable Criteria n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

That portion of the Southern Pacific Railroad Los Angeles Division (now Union Pacific) evaluated for the purposes of the proposed project does not appear to meet the criteria for listing in the National Register of Historic Places, primarily because it lacks integrity of design, setting, materials, workmanship, feeling and association to its potential period of significance being between 1877 when its construction was completed, and 1885, when the Atchison, Topeka, and Santa Fe Railroad was constructed into Los Angeles as a competing line through the same general area. This form does not record or evaluate the entirety of the Southern Pacific line between Los Angeles and Yuma, Arizona; instead, for the purposes of the proposed project, that approximately 26.5-mile portion of the line within Los Angeles County between San Gabriel and Pomona was examined in order to assess its potential eligibility both as part of a larger system and as an individual section. The Southern Pacific Railroad constructed the line between 1874 and 1877; the line operated under the Southern Pacific until that company was acquired by the Union Pacific Railroad in 1996. (See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)
*B12. References: USGS 7.5" Topographic Quad Sheets: "Ontario" (1967, photorevised 1973); "San Dimas" (1966, photorevised 1981); "Baldwin Park" (1966, photorevised 1981); "El Monte" (1966, photorevised 1981); "Los Angeles" (1966, photorevised 1981); see footnotes, Significance, B10.

B13. Remarks:

*B14. Evaluator: Rand F. Herbert and Jessica Herrick

*Date of Evaluation: March 4, 2002

(This space reserved for official comments.)

(Sketch Map with north arrow required.)

See continuation sheet.

*Required Information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

Page 3 of 22 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 2

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 397892 mE/ 3773126 mN
Intersection with Ramona Street in San Gabriel.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this, the westernmost point recorded, the railroad is a single track, recently re-ballasted. A steel and concrete box pad has been installed at grade over the ties at the crossing (see **Photograph 2**). The modern rails are not welded, and travel on a low (1 ½ foot) berm to the east and west of the crossing. Modern crossing guard arms protect traffic on the multiple lanes of Ramona Street. A small, portable manufactured service shed with a gable roof stands on the southwest side of the crossing (see **Photograph 12**).

L4. Dimensions: (in feet for historic features and meters for prehistoric features)
At-grade road crossing of Ramona Street, multiple lanes.

L5. Associated Resources:
See Description, L3.

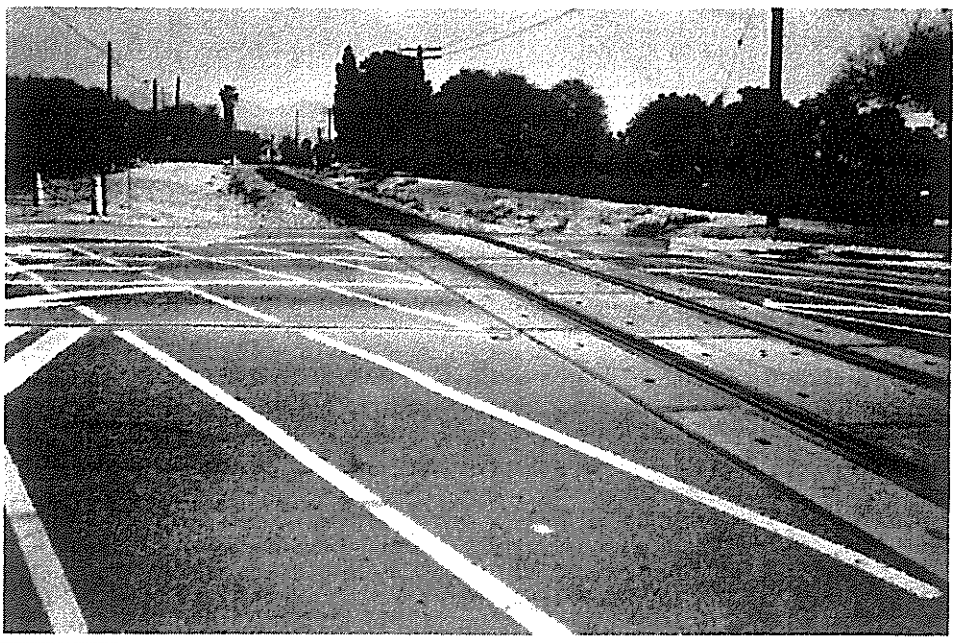
L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 2

L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)
Mission Road parallels the tracks on the south; a residential area and school appear south of the crossing, and a mission area sits to the north.

L7. Integrity Considerations:
Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.



L8b. Description of Photo, Map, or Drawing:
Photograph 2; concrete pads for at-grade crossing, Ramona Street; camera facing east; March 4, 2002.

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 4, 2002

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

Page 4 of 22 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 3

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 397999 mE/ 3773167 mN

At intersection with Mission Road in San Gabriel.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, the railroad is a single track, recently re-ballasted. A steel and concrete box pad has been installed at grade over the ties at the crossing. (See **Photograph 3**) The modern rails and ties travel on a low (1 ½ foot) berm to the east and west of the crossing (see **Photograph 13**). Safety equipment includes two automatic crossing guard arms with appurtenant service boxes; a signal at milepost #4904, and wood railing around a culvert on the east side of the crossing.

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade crossing of Mission Road, four lanes.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 3.

L5. Associated Resources:

See Description, L3.

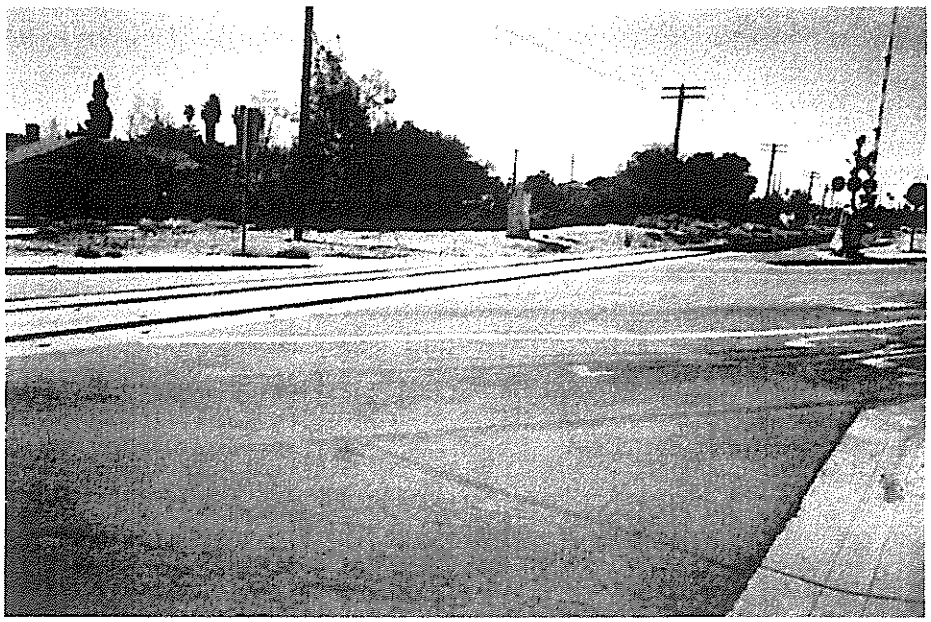
L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Residential or commercial/industrial at all compass points.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.



L8b. Description of Photo, Map, or Drawing:

Photograph 3; steel and concrete box pads over ties at Mission Street crossing; camera facing west; March 4, 2002.

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 4

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 398652 mE/ 3773309 mN

At intersection with Del Mar Avenue in San Gabriel.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, similar to Crossing # 2 and 3, the railroad is a single track, recently re-ballasted. A steel and concrete box pad has been installed at grade over the ties at the crossing. The modern rails and ties travel on a low (one-foot) berm to the east and west of the crossing. Safety equipment includes signs, two automatic crossing guard arms and two automatic warning signal towers, with appurtenant service and electricity boxes (see **Photograph 4**).

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade crossing of Del Mar Avenue, two lanes.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 4.

L5. Associated Resources:

See Description, L3.

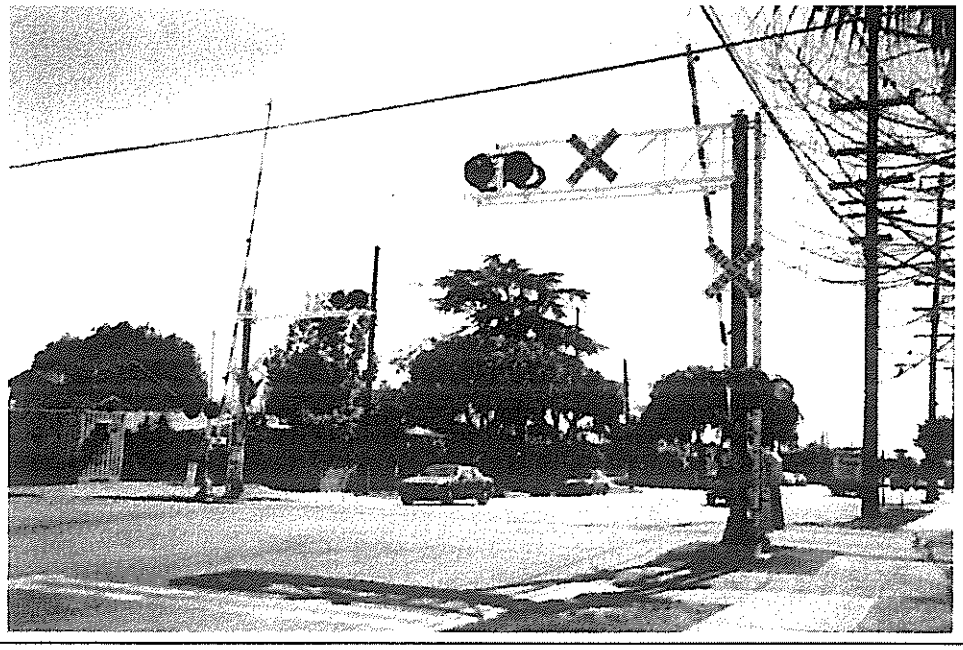
L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Residential or commercial/industrial at all compass points.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.



L8b. Description of Photo, Map, or Drawing:

Photograph 4; crossing at Del Mar Avenue; camera facing southeast; March 4, 2002.

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

Page 6 of 22 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 5

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 399450 mE/ 3773152 mN

At intersection with San Gabriel Boulevard, in San Gabriel.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, similar to Crossing # 2, 3 and 4, the railroad is a single track, recently re-ballasted. A steel and concrete box pad has been installed at grade over the ties at the crossing. The modern rails and ties travel on a low (one-foot) berm to the east and west of the crossing. Safety equipment includes signs, two automatic crossing guard arms and two automatic warning signal towers, with appurtenant service and electricity boxes (see **Photograph 5**).

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade road crossing of San Gabriel Boulevard, two lanes.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 5.

L5. Associated Resources:

See Description, L3.

L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Industrial/commercial at all compass points.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.



L8b. Description of Photo, Map, or Drawing: **Photograph 5**; Crossing at San Gabriel Boulevard; camera facing east; March 4, 2002.

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 6

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 403095 mE/ 3771682 mN

At intersection of Baldwin Avenue in Rosemead.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, similar to Crossing # 2 and 3, the railroad is a single track, recently re-ballasted. A steel and concrete box pad has been installed at grade over the ties at the crossing. The modern rails and ties travel on a low (one-foot) berm to the east and west of the crossing. Safety equipment includes signs and two automatic crossing guard arms with appurtenant service and electricity boxes (see **Photograph 6**).

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade road crossing of Baldwin Avenue, four lanes.

a.

L5. Associated Resources:

See Description, L3.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 6.

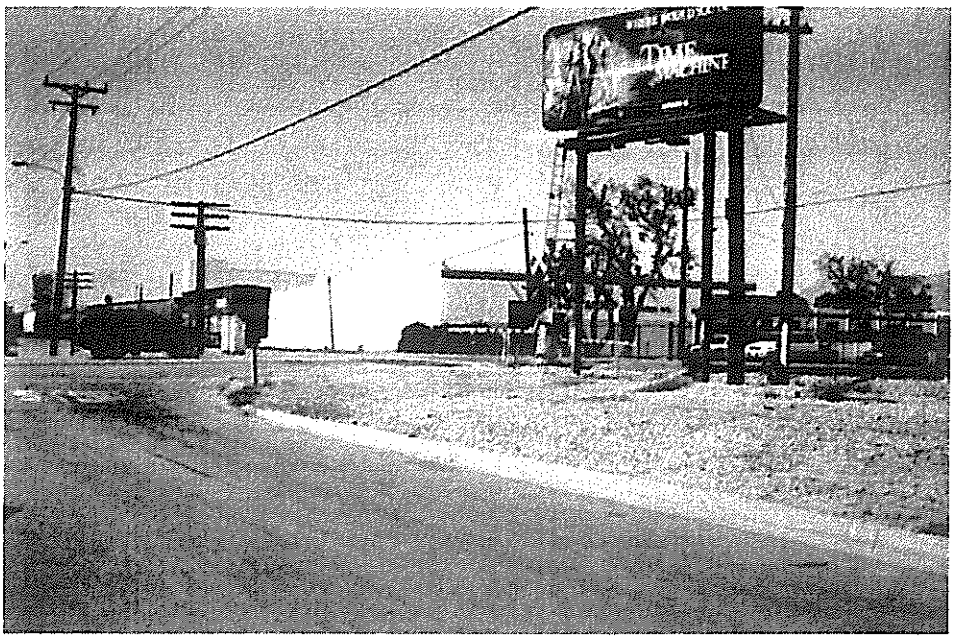
L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Industrial/commercial at all compass points.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.



L8b. Description of Photo, Map, or Drawing:

Photograph 6; Crossing at Baldwin Avenue; camera facing northwest; March 4, 2002.

L9.. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

*Required Information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 7

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 405034 mE/ 3770556 mN

Intersection with Iris and Ramona Streets in El Monte.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, the railroad consists of two tracks, recently re-ballasted. A steel and concrete box pad has been installed at grade over the ties at each crossing. The modern rails and ties travel on a low (1 ½ -foot) berm to the on either side of the crossing. Safety equipment includes signs, automatic crossing guard arms and automatic warning signal towers with appurtenant service and electricity boxes. Two gabled, pre-manufactured service sheds stand to the north (see **Photograph 7**). A spur line intersects the main track west of the crossings (See **Photograph 14**).

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade road crossing of Iris and Ramona Streets; Iris is two lanes, Ramona is four lanes.

L5. Associated Resources:

See Description, L3.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 7.

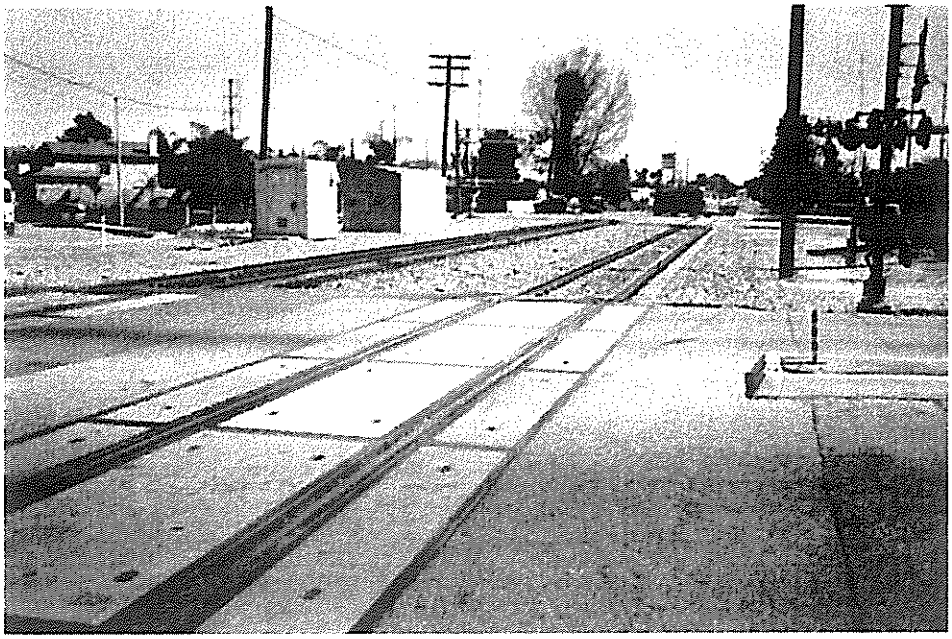
L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Residential and commercial at all compass points.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.



L8b. Description of Photo, Map, or Drawing:

Photograph 7; Crossing at Iris and Ramona Streets; Camera facing east; March 4, 2002.

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

*Required Information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 10

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 409701 mE/ 3766645 mN

At intersection with Orange Avenue in City of Industry.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, the railroad consists of a single track – this location is almost identical in appearance to the intersection with Sunset Avenue (Crossing # 11) to the southeast, shown in **Photograph 8**. The tracks parallel Valley Boulevard. A steel and concrete box pad has been installed at grade over the ties at the crossing. The modern rails and ties travel on a very low berm (less than one foot) to the east and west of the crossing. Safety equipment includes signs, automatic crossing guard arms and automatic warning signal towers with appurtenant service and electricity boxes.

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade road crossing of Orange Avenue, four lanes.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 8.

L5. Associated Resources:

See Description, L3.

L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Industrial/commercial at all compass points.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.

See Photograph 8.

L8b. Description of Photo, Map, or Drawing:

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

*Required Information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 11

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 410140 mE/ 3766250 mN

Intersection with Sunset Avenue in City of Industry.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, the railroad consists of a single track; a spur or side-track appears east of the crossing. The tracks parallel Valley Boulevard. A steel and concrete box pad has been installed at grade over the ties at the crossing. The modern rails and ties travel on a very low berm (less than one foot) on either side of the crossing. Safety equipment includes signs, automatic crossing guard arms and automatic warning signal towers with appurtenant service and electricity boxes. (see **Photograph 8**).

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade road crossing of Sunset Avenue, four lanes.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 8.

L5. Associated Resources:

See Description, L3.

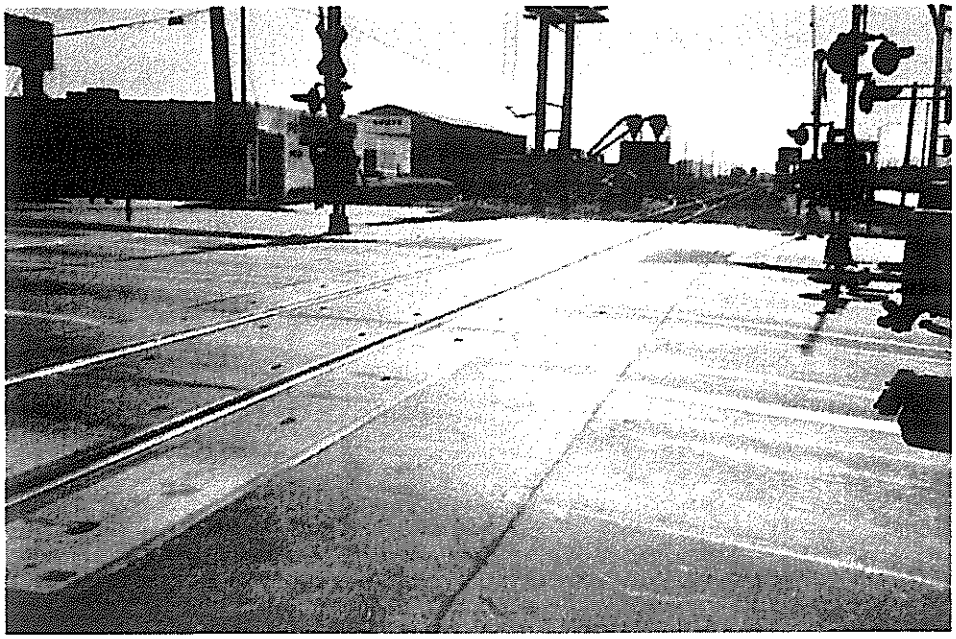
L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Industrial/commercial at all compass points.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.



L8b. Description of Photo, Map, or Drawing:

Photograph 8; Crossing at Sunset Avenue; camera facing east; March 4, 2002.

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

*Required Information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 12

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 410599 mE/ 3765878 mN

Intersection with California Avenue in City of Industry.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, the railroad consists of a single track – this location is almost identical in appearance to the intersection with Sunset Avenue to the northwest, shown in **Photograph 8**. The tracks parallel Valley Boulevard. A steel and concrete box pad has been installed at grade over the ties at the crossing. The modern rails and ties travel on a very low berm (less than one foot) to the east and west of the crossing. Safety equipment includes signs, automatic crossing guard arms and automatic warning signal towers with appurtenant service and electricity boxes.

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade road crossing of California Avenue, two lanes.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 8.

L5. Associated Resources:

See Description, L3.

L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Industrial/commercial at all compass points.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.

See Photograph 8.

L8b. Description of Photo, Map, or Drawing:

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

*Required Information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 16

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 425125 mE/ 3767634 mN

Intersection with Temple Avenue, near the entrance to California State Polytechnic University, Pomona.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, the railroad consists of a single track, recently re-ballasted. A modern rubberized pad has been installed at grade over the ties at the crossing. The modern rails and ties travel on a low berm (approximately one foot) on either side of the crossing. Safety equipment includes signs, four automatic crossing guard arms and warning signal lights with appurtenant service and electricity boxes. (See **Photograph 9**)

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade road crossing of Temple Avenue, four lanes.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 9.

L5. Associated Resources:

See Description, L3.

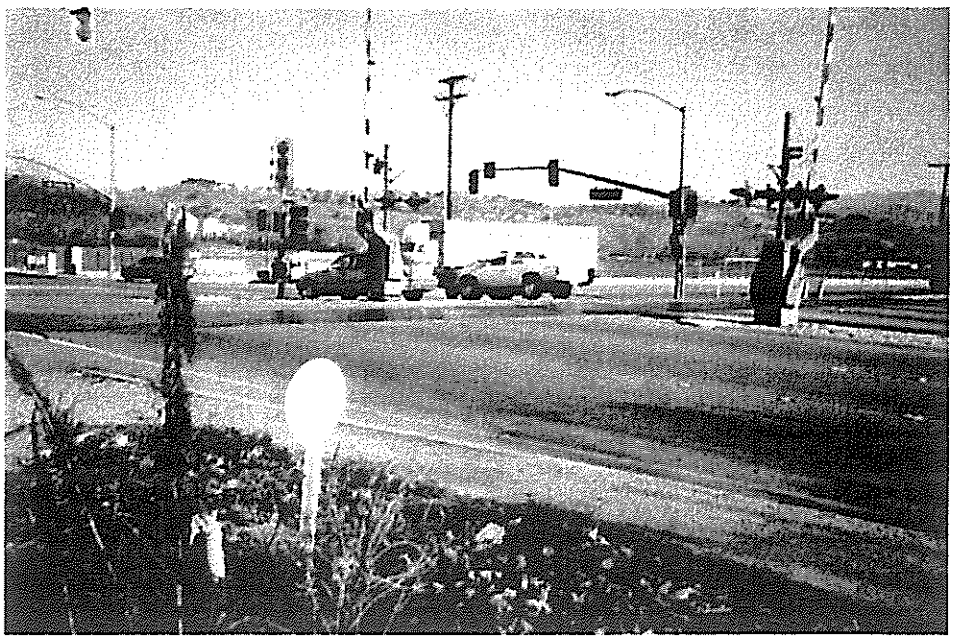
L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Commercial to the east, campus of California State Polytechnic University to the west.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has modern rubberized pad over ties at grade crossing.

L8a. Photograph, Map, or Drawing.



L8b. Description of Photo, Map, or Drawing:

Photograph 9; Crossing at Temple Avenue near entrance to California State Polytechnic University; camera facing west; March 4, 2002.

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

*Required Information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 17

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 432455 mE/ 3768795 mN

Intersection with Reservoir Street in Pomona.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, like Crossing # 18 (see below) this railroad parallels the tracks of another Union Pacific Railroad line, located south of the railroad treated by this form. Both railroads consist of a single track, each recently re-ballasted. Modern steel and concrete box pads have been installed at grade over the ties at the crossing. The modern rails and ties travel on a low berm (approximately one foot). Safety equipment includes signs, automatic crossing guard arms and warning signal lights with appurtenant service and electricity boxes. (See **Photograph 10 and 15**)

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade road crossing of Reservoir Street, four lanes.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 10.

L5. Associated Resources:

See Description, L3.

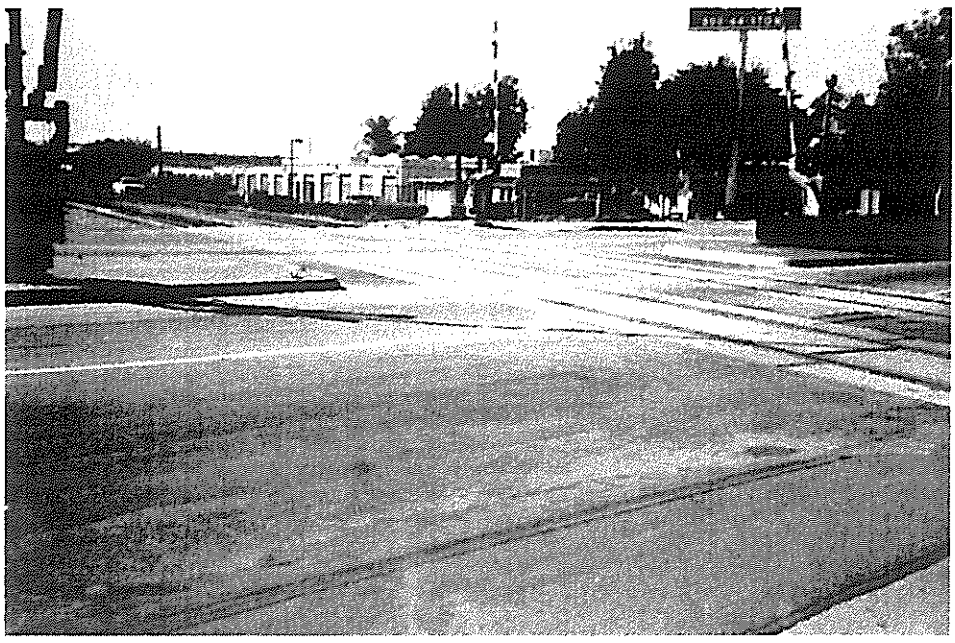
L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Industrial/commercial at all four compass points.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.



L8b. Description of Photo, Map, or Drawing:

Photograph 10; crossing at Reservoir Street; camera facing northwest; March, 4, 2002.

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division / Union Pacific Railroad

L2a. Portion Described: ☐ Entire Resource Segment ☒ Point Observation **Designation:** Crossing # 18

***b. Location of point or segment:** (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

UTM: Zone 11; 433264 mE/ 3768800 mN

Intersection with East End Avenue in Pomona.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

At this point, like Crossing # 17 (see above) this railroad parallels the tracks of another Union Pacific Railroad line, located south of the railroad treated by this form. Both railroads consist of a single track, each recently re-ballasted. Modern steel and concrete box pads have been installed at grade over the ties at the crossing. The modern rails and ties travel on a low berm (approximately one foot). Safety equipment includes signs and warning signal lights with appurtenant service and electricity boxes. (See **Photograph 11**)

L4. Dimensions: (in feet for historic features and meters for prehistoric features)

At-grade road crossing of East End Avenue, four lanes.

L4e. Sketch of Cross-Section (include scale) **Facing:** _____

See Photograph 11.

L5. Associated Resources:

See Description, L3.

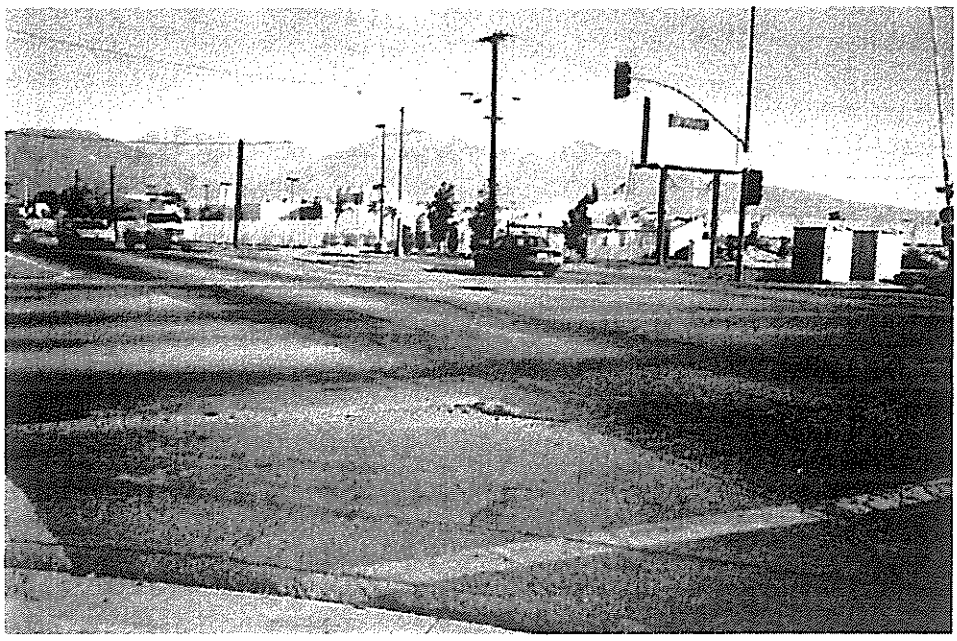
L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

Industrial/commercial area at all four compass points.

L7. Integrity Considerations:

Modernized rails and safety equipment. Recently re-ballasted. Has steel and concrete box infill over ties at grade crossing.

L8a. Photograph, Map, or Drawing.



L8b. Description of Photo, Map, or Drawing:

Photograph 11; at-grade crossing at East End Avenue; camera facing north; March 4, 2002.

L9. Remarks:

L10. Form prepared by: (Name, affiliation, address) Rand Herbert and Jessica Herrick, JRP Historical Consulting Services, 1490 Drew Ave, Suite 110, Davis, CA 95616

L11. Date: March 8, 2002

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

Page 15 of 22 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona
*Recorded by Rand Herbert *Date March 4, 2002 ☒ Continuation ☐ Update

P2b. USGS 7.5" Quad (continued):

Ontario (1967, photorevised 1973)
San Dimas (1966, photorevised 1981)
Baldwin Park (1966, photorevised 1981)
El Monte (1966, photorevised 1981)
Los Angeles (1966, photorevised 1981)

B10. Significance (continued):

This railroad, the first transcontinental connection for the Los Angeles region, might be considered significant under Criterion A for its importance in the development of the Los Angeles area in the late nineteenth and twentieth centuries. However, virtually nothing remains of the original tracks or appurtenant structures and equipment within the study area. Additionally, development of the area, in part caused by the construction and operation of the railroad itself, has resulted in a loss of feeling and association that also damages this section of rail's historical integrity. The following sections explore the potential area of eligibility, and the changes that this portion of line has undergone.

Historic Context

The arrival of the Southern Pacific Railroad (SPRR) in the San Gabriel Valley in the mid-1870s fundamentally altered the complexion and development of the area. Prior to this time, the region between Los Angeles and San Bernadino was sparsely settled, primarily by farmers and ranchers living in small adobes or wood-frame houses that were often separated by hundreds of acres of open land. Grain-growers and cattlemen, these settlers slowly began to crisscross the region with local roads and small communities, but rapid growth did not occur until the railroad entered the valley; only 5,728 inhabitants lived in the City of Los Angeles by 1870. The economic leaders and entrepreneurs of the Greater Los Angeles area recognized that the rails offered them access to a nationwide market for their products for the first time. Additionally, the railroad would bring other interests into California, in terms of immigrants, health-seekers, and tourists, all prospective customers for goods, services, and real estate. Through the 1870s and 1880s, the large rancho holdings that had previously typified land ownership were subdivided into smaller parcels and town lots, creating Pasadena, Alhambra and other communities in the San Gabriel Valley, and taking advantage of the infrastructure offered by the new railroad line.[1]

The Southern Pacific Railroad incorporated October 13, 1870, as a consolidation of the San Francisco and San Jose Railroad, the Southern Pacific Railroad Company, the Santa Clara and Pajaro Valley Railroad, and the California Southern. Charles Crocker, Leland Stanford, Mark Hopkins, and Collis P. Huntington, the "Big Four" already in control of the Central Pacific, owned, and acted as directors of, the new company. The main line serving southern California ran from Goshen in the San Joaquin Valley to Los Angeles by way of Mojave, Soledad Canyon, and the San Fernando Valley, and was completed in 1876. The Los Angeles Division,

[1] William F. King, *The San Gabriel Valley: Chronicles of an Abundant Land* (Chatsworth, CA: Windsor Publications, Inc., 1990), 25, 29-30; Edna Monch Parker, "The Southern Pacific Railroad and Settlement in Southern California," in *Pacific Historical Review*, vol. 6, no. 3 (1937): 105.

sometimes called the "Sunset line", was built from Los Angeles east and south to Yuma, Arizona, between 1874 and 1877 and linked the San Gabriel Valley and points east with Los Angeles. The Sunset line eventually extended as far as New Orleans, Louisiana by the mid-1880s, connecting California by a southern route to the population centers on the East Coast. The SPRR Los Angeles Division was one of the first rail lines constructed in the San Gabriel Valley, preceded only by the Los Angeles & San Pedro, which was constructed in 1869 and acquired by SPRR in 1874. [2]

Beginning in the 1850s, local politicians and editors in southern California had been calling for a transcontinental railroad to traverse the region. In the early 1870s, Los Angeles County and the SPRR signed an agreement that ensured the SPRR would pass through Los Angeles; the county agreed to provide a depot site, a $602,000 donation and the sale of the Los Angeles and San Pedro Railroad in return for the SPRR constructing their line through the Los Angeles region instead of adopting a route through Antelope Valley and then on to the east. Soon after, in 1872, the county and the SPRR made another agreement allowing for construction of the Los Angeles Division line. Local landowners throughout the San Gabriel Valley immediately began to lobby for railroad terminals within their communities. The Los Angeles Division line as eventually constructed followed the same alignment as it does today. From Yuma, Arizona, near the border with California, the line headed northwest through California's Imperial Valley, past the northeastern shore of the Salton Sea and then over the San Bernadino Mountains into the San Gabriel Valley, shifting west to terminate in Los Angeles. In Los Angeles County, it passes through such communities as Pomona, Walnut, the City of Industry, El Monte, and San Gabriel, which owe their existence and later development at least in part to the construction of the rail lines.[3]

Los Angeles welcomed the coming of the SPRR main line from the San Joaquin Valley in 1876 with parades and banquets; however, even with the construction of the Los Angeles Division line east to Yuma, the railroad did not immediately have a large impact on the local economy, probably because businessmen and farmers could not yet take full advantage of the new rapid transportation facilities. Development of local economies was assisted when the SPRR began real-estate promotion in order to sell the lands adjacent to the railroad lines. The railroad companies possessed millions of acres of land, available for sale to farmers and other business entrepreneurs after the completion of the rail lines. The sale of such properties benefited the railroad not only through the purchase price, but also ensuring that the lines would have freight and passenger customers in the future. The Southern Pacific embarked upon a massive land promotion campaign to induce people to purchase and cultivate the company's lands, advertising in newspaper articles, books, and pamphlets across the United States. One such book was Charles Nordhoff's *California for Health, Pleasure, and Residence: A Book for Travellers and Settlers*, published in 1875 and revised in 1882 after the Sunset line to New Orleans was almost complete; others included the *Southern Pacific Sketchbook* and *The Lands of the Southern Pacific* (published in 1887 and 1877 respectively). This promotional literature provided the reader with descriptions of land, local towns, the advantages of the area, wages, working conditions, living expenses, and agricultural products, all written in enticing ways to encourage immigration and purchase.[4]

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[2] John R. Signor, *Southern Pacific Lines, Pacific Lines Stations Volume 1: Coast Division, Los Angeles Division, Portland Division* (Pasadena, CA: Southern Pacific Historical and Technical Society, 1997), 31; Parker, "The Southern Pacific Railroad and Settlement in Southern California," 104-105.

[3] John W. Caughey, *California: A Remarkable State's Life History* (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1970), 340.

[4] Caughey, *California*, 343-350; Parker, "The Southern Pacific Railroad and Settlement in Southern California," 106-109.

As a result of this promotional effort, the population of southern California increased dramatically. A land boom occurred in the 1880s, with most of this growth taking place, predictably, in the sectors dictated by the railroad, a circumstance that resulted in much criticism of the Southern Pacific. Los Angeles and the surrounding areas began to prosper, especially after the connection between the Los Angeles Division line and New Orleans, Louisiana was completed in 1883. This "Sunset" route provided citrus farmers with a warmer, less mountainous and shorter route for shipment of their products. Previously, when southern Californian agriculture was dependant upon the Southern Pacific-Central Pacific line connection with the Union Pacific line in the northern part of the state for freighting. Citrus fruits and other agricultural products were often ruined by cold weather and long shipment times.[5]

An additional benefit of the railroad promotional literature and the subsequent land-boom came in the form of "health seekers" and their attendant doctors, who began moving into the southern California region in large numbers in the late 1870s and 1880s. Earlier in the century, the advantages of southern California's climate had been recognized, but the region proved too remote to be a successful health resort area. After the SPRR constructed its lines, including the Los Angeles Division that linked to New Orleans through Texas, New Mexico, and Arizona, people searching for relief from maladies such as tuberculosis, asthma and rheumatism flooded into the area. Their presence spurred the construction of hotels and restaurants, housing developments, hospitals and health resorts. The convalescents also turned to agricultural pursuits during their recovery, planting such non-labor intensive crops as vines and citrus, as well as taking up bee keeping. These health seekers brought much attention to southern California throughout the remainder of the nineteenth century and well into the twentieth century. One historian has concluded that at least one quarter of the population of southern California in 1900 had immigrated to the region either as a health seeker or as a relative of such an individual.[6]

The land boom faded after the 1880s, leaving mixed results in its wake. Some communities benefited greatly, others proved no more than "paper towns" that existed only in the minds of land speculators. The real estate market slowed, and the region suffered from droughts and a nationwide depression in the 1890s that kept growth from reaching the heady pace it had in previous years. Despite this, several branch lines to the main line of the Los Angeles Division were constructed by 1898, including the Pasadena Branch (completed in 1895), the Ojai Branch (completed in 1898) and the Santa Ana Branch (completed in 1890). In most cases, these branch lines were originally built and operated by local railroad companies, and were gradually taken over by the Southern Pacific. Los Angeles County attracted almost 60,000 new residents between 1890 and 1900. After the turn of the century, additional rail lines and continuing waves of immigrants boosted development in the San Gabriel Valley, as well as the development of electric interurban lines such as the Pacific Electric Railway.[7]

The Southern Pacific was forced to compete with electric interurbans and automobile traffic for space and passengers as the twentieth century progressed and highway construction increased. Advances in oil recovery and refining technology aided the economic development of southern California, but much of the area through which

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[5] Caughey, *California*, 340-350; Parker, "The Southern Pacific Railroad and Settlement in Southern California," 106-109, 116-119; Richard J. Orsi, "The Octopus Reconsidered: The Southern Pacific and Agricultural Modernization in California, 1865-1915," in *California Historical Quarterly*, vol. LIV, no. 3 (Fall 1975): 207-209.

[6] Caughey, *California*, 340-343.

[7] Signor, *Southern Pacific Lines, Pacific Lines Stations Volume 1: Coast Division, Los Angeles Division, Portland Division*, 31; Glen S. Dumke, *The Boom of the Eighties in Southern California* (San Marino, CA: Huntington Library, 1944), 259-276; Spencer Crump, Ride the Big Red Cars: How Trolleys Helped Build Southern California (Corona Del Mar, CA: Trans-Anglo Books, 1977), 226-230.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

the Los Angeles Division passed remained relatively rural until the mid-twentieth century. Many San Gabriel Valley towns such as Pomona, Covina, and Puente were distinct communities surrounded by open fields and orchards throughout the 1930s. After World War II, suburban development increased dramatically, and suburban tract homes rapidly proliferated throughout the San Gabriel Valley. Southern California had attracted record numbers of immigrants to work in war-related industries, as well as the families of those serving in the military. Builders converted acres of farmland to residential and commercial use in the early 1950s to meet this demand, and the valley communities began to expand, significantly altering the setting around much of the Los Angeles Division lines.[8]

Additionally, the 1930s had seen the introduction of the diesel-electric locomotive and the streamlined passenger train, eliminating the need for many structures along railroad lines dependant upon steam power, such as water stops with tanks, wells, and pumping stations. Advances in the technology of safety equipment and structures also occurred. Because the Los Angeles Division developed so early in the history of the region, much of its original materials and engineering structures were primitive in comparison to modern ones. By 1952, many had been replaced with more advanced railroad structures. Additionally, much of the line ran through an arid region with little development, and so structures original to the railroad's initial construction are few and far between. The rush of development that occurred post-World War II and the need for suburban housing tracts resulting in the dismantling of many of the Southern Pacific Railroad buildings that did exist; only a few stations have survived. In 1996, the Southern Pacific Railroad was acquired by the Union Pacific railroad, and this company has continued to provide maintenance and operation of the Los Angeles Division.[9]

Significance Discussion

For the purposes of the proposed project the Los Angeles Division line does not appear to be eligible for listing in the National Register of Historic Places, primarily because of its loss of historic integrity. Therefore the section under evaluation in this form does not appear to have the potential to be a contributor to any larger historic property, nor does the segment appear to meet the criteria for eligibility as an individual property. If the Southern Pacific Los Angeles Division was found to possess integrity, it would be potentially eligible under Criterion A, for its association with the development of the Los Angeles area in the late nineteenth and early twentieth centuries, including its urban and social development, the rise of commercial agriculture such as citrus crops, and the development of rapid transit lines in southern California. The Los Angeles Division lines were the first to provide such services to the Los Angeles area, as well as linking with the original line from the first transcontinental railroad through Sacramento. The period of significance would be 1877 to 1885, from its completion to the arrival of the competing Atchison, Topeka and Santa Fe Railroad in Los Angeles. Railroads have an important impact on their region; however, this line was not the first in the Los Angeles area and thus had a lesser impact than had it been the original line. Additionally, based on field surveys conducted for the proposed undertaking, this section of railroad line does not appear to retain sufficient integrity to convey a sense of the property's historical significance.

[8] King, *The San Gabriel Valley*, 61, 69; John G. Swaine, ed., *The Historical Volume and Reference Works*, Volume II, Los Angeles County (Whittier, CA: Historical Publishers, 1963), 94-96.
[9] Signor, *Southern Pacific Lines, Pacific Lines Stations Volume 1: Coast Division, Los Angeles Division, Portland Division*, 31.

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Although it is located on its original alignment, this section of line's lack of integrity of design, setting, materials, workmanship, feeling and association appear to preclude it from listing in the National Register. As stated above, routine maintenance procedures and the need to keep abreast of advancing technology has resulted in the replacement or demolition of many of the original structures, such as the ties, rails, ballast, crossing equipment, safety features and most of the railroad stations, meaning that the railroad's integrity of design, materials and workmanship to its potential period of significance between its construction in 1877 to 1885 has been compromised. Portions of the single-track line have been double-tracked to create "spur" lines. Additionally, the region surrounding the railroad has changed tremendously since the turn of the century. During its potential period of significance this railroad ran through mostly undeveloped arid country in the San Gabriel Valley, land that has since undergone intensive development that created residential suburbs and industrial areas in support of the ever-growing economic activities in Los Angeles County. This has substantially altered the integrity of feeling, association, and setting for the railroad. The only aspect of integrity that the railroad has retained is its integrity of location, for it follows the same alignment as when constructed. However, given the severe lack under other aspects of historical integrity, this does not appear to be enough for the railroad to meet the criteria for listing in the National Register.

Under Criterion B, the railroad was associated with members of the "Big Four" that helped bring the railroad, in the form of the Central Pacific and the Southern Pacific, to California, changing the pace and direction of California's economic, social, and agricultural development. However, the Big Four are not known to have had any direct involvement in the construction or operation of the Los Angeles Division. This line would also not be the best resource to demonstrate their significance; other resources, such as the original transcontinental line over Donner Summit, would be superior examples of resources related to these persons. In any event, the same issue of lack of historical integrity applies. Also, no special engineering or construction techniques were known to be used in the construction of the Los Angeles Division lines, which would militate against their eligibility under Criterion C. In rare instances, buildings or structures themselves can serve as sources of important information about historic construction or engineering technologies (Criterion D); however, these railroad lines have been otherwise documented, and do not appear likely to be a principal source of important information in this regard.

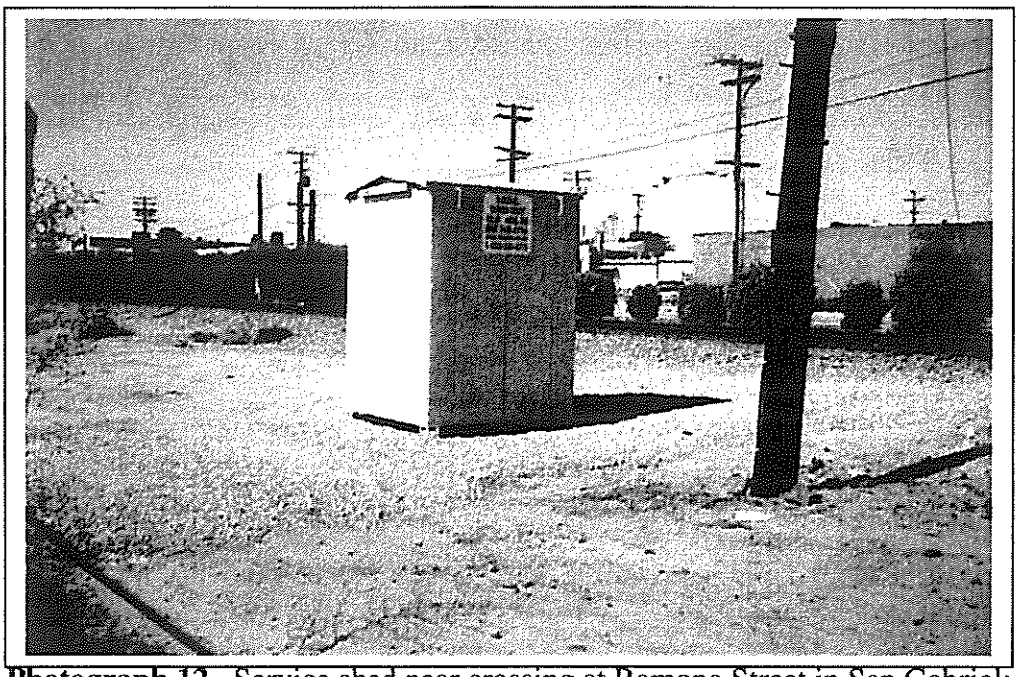
The integrity of materials, workmanship, design, feeling, setting, and association for the Southern Pacific Los Angeles Division line within Los Angeles County has been compromised by maintenance procedures and the heavy development of the surrounding area. Therefore, for the purposes of this project, the Southern Pacific Railroad Los Angeles Division does not appear to be eligible for the National Register of Historic Places. Consequently, the San Gabriel-Pomona segment within the study area is not a contributing element of any larger historic property. Even if the Southern Pacific Railroad Los Angeles Division line was determined to be a historic property, the San Gabriel-Pomona segment lacks integrity, and would not likely be determined a contributing element. Nor does the segment appear to possess the significance for individual eligibility. Furthermore, this property has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code. This historic property, lacking integrity, does not meet the significance criteria as outlined in these guidelines.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

*Recorded by Rand Herbert *Date March 4, 2002 ☒ Continuation ☐ Update

Photographs



Photograph 12. Service shed near crossing at Ramona Street in San Gabriel; camera facing northwest; March 4, 2002.



Photograph 13. Tracks to the east of crossing at Mission Road; camera facing east, March 4, 2002.

State of California – The Resources Agency
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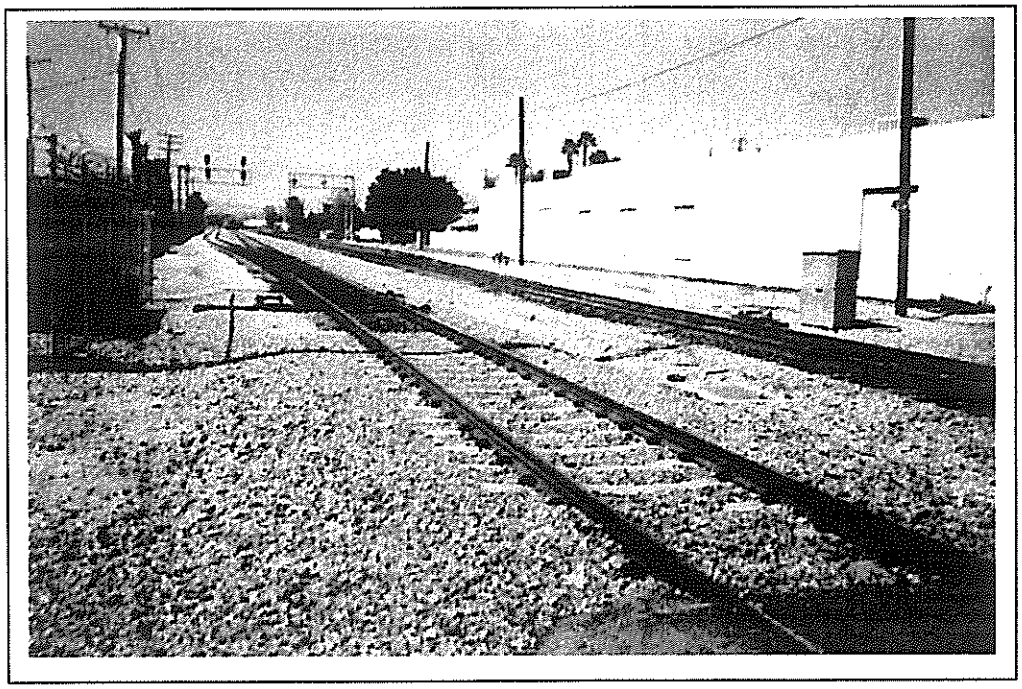
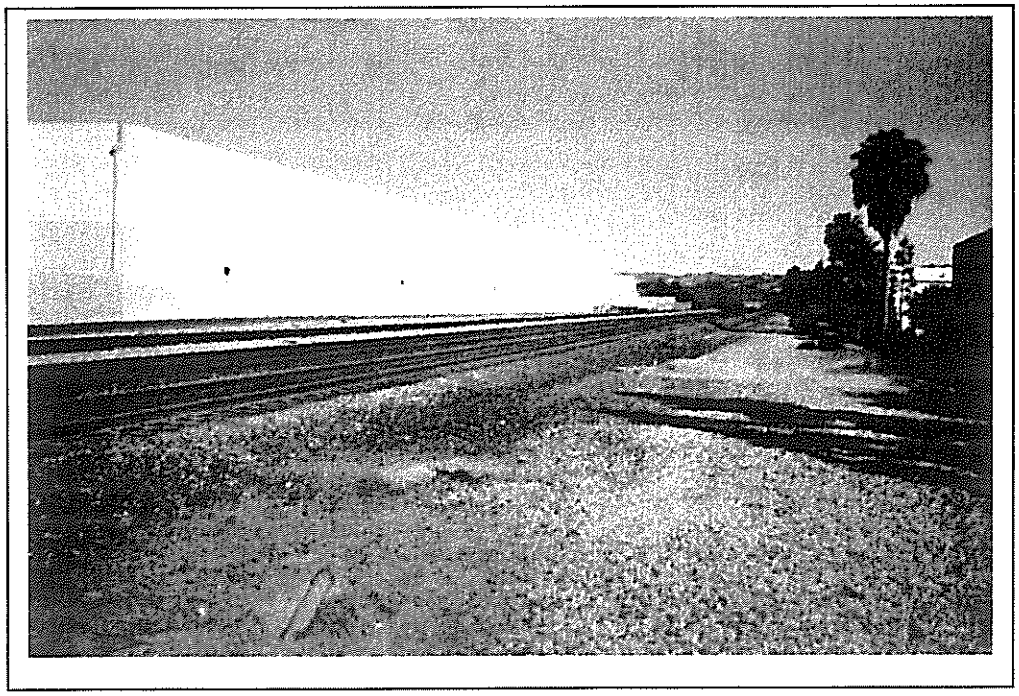
Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona
*Recorded by Rand Herbert *Date March 4, 2002 ☒ Continuation ☐ Update

Photographs



Photograph 14. Tracks west of Iris and Ramona crossings in El Monte. Note spur line at upper left. Camera facing west, March 4, 2002.



Photograph 15. Rail lines east of crossing at Reservoir Street, Pomona, camera facing east, March 4, 2002.

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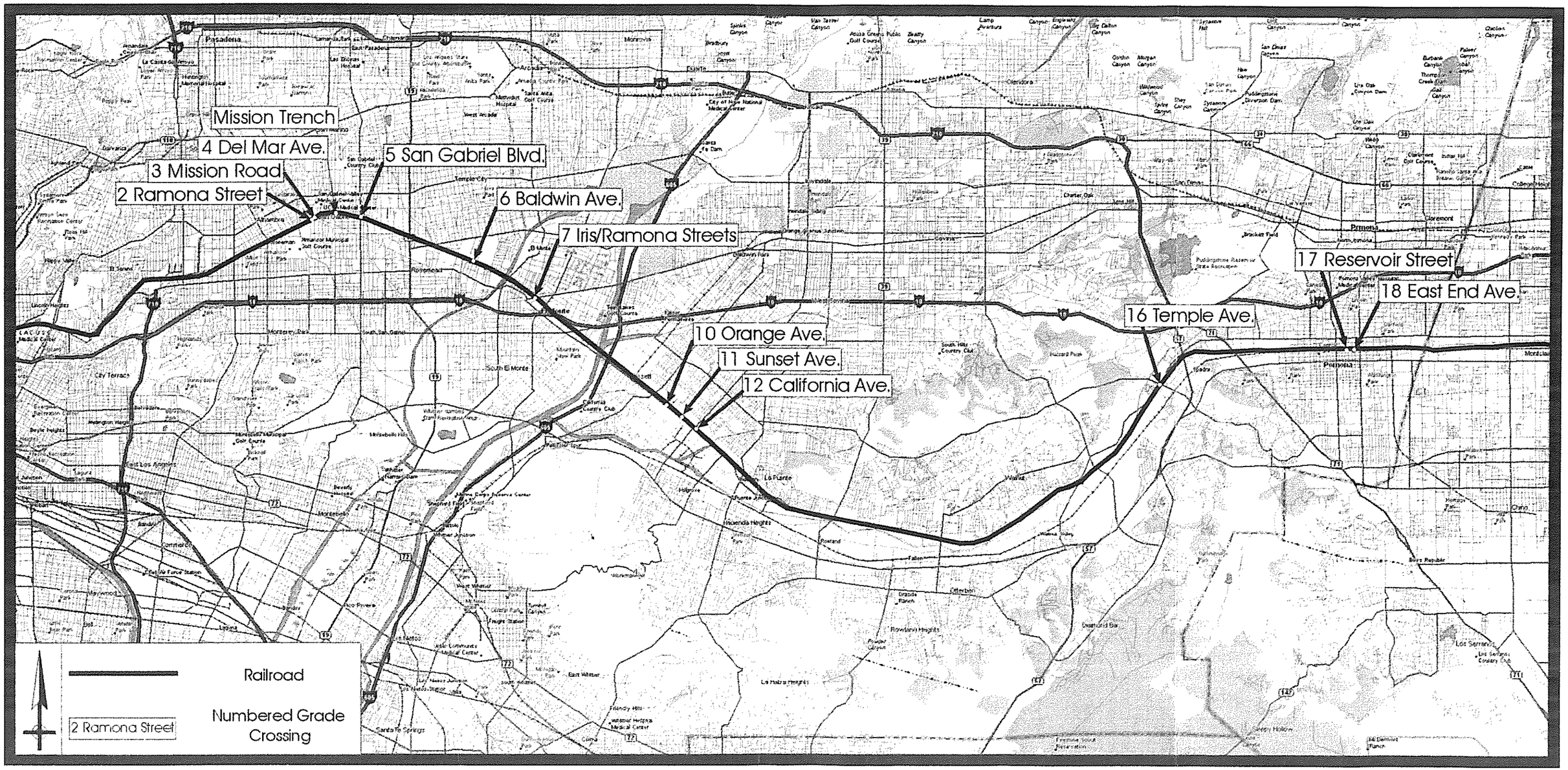
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

 *Resource Name or # Southern Pacific Los Angeles Division, San Gabriel - Pomona
*Recorded by Rand Herbert *Date March 4, 2002 ☒ Continuation ☐ Update

Sketch/Location Map



ACE Southern Pacific Grade Separations

*Required Information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 19-186112 (Update)
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

*Resource Name or #: Union Pacific Railroad

P1. Other Identifier: MetroLink Riverside Line

*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County: Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: La Habra Date: 1964 (photorevised 1981) T 2S; R 10W; unsectioned; S.B.B.M.

c. Address: Mile Post 22.4 City: n/a Zip: n/a

d. UTM: Zone: 11 ; 417804 mE/ 3762236 mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: The subject UPRR tracks are located in the City of Industry. From the Nogales Street exit on State Route 60, proceed 0.24 miles north on Nogales Street. The tracks extend east and west of the Nogales Street crossing at an elevation of 460 feet above mean sea level.
APNs: 8760-005-808, 8760-005-809, 8760-005-810, and 8264-021-801.

*P3a. Description: This update records a 0.38-mile long segment of the Union Pacific Railroad (UPRR) property originally recorded by S. Ashkar in 1999. The original site record includes the railroad from its beginning in Los Angeles to the City of Colton, California. The portion of the UPRR property in this site record update is located in the City of Industry at Nogales Street and inlcudes MetroLink Riverside Line tracks. This 0.38-mile long segment of the property consists of two sets of parallel railroad tracks, running east to west. The tracks are approximately 6 feet apart and are set in ballast. The northern, likely freight tracks have wood ties, the southern tracks serve MetroLink and have concrete sleepers. These segments of tracks are contiguous at the east and west ends to additional portions of railroad track beyond. The tracks are not physically distinguishable from other steel, standard gauge, continuous welded freight railroad tracks. The track bed is roughly flat and noted by a raised berm. This segment contains one at-grade crossing at Nogales Street, updated with steel and concrete box pads (circa 1993) and contemporary signals (dates unknown). Alterations include the replacement of wood ties on the south side with concrete sleepers and construction of steel and concrete box pads, contemporary crossing arms and other contemporary equipment (dates unknown) at the Nogales Street crossing.

*P3b. Resource Attributes: HP11 (Engineering structure); HP39 (Other-railroad)

*P4. Resources Present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)



P5b. Description of Photo: UPRR Nogales Street crossing, view west. Photograph 2086, February 13, 2009

*P6. Date Constructed/Age and Sources: ☒ Historic ☐ Prehistoric ☐ Both
circa 1905

*P7. Owner and Address:
Union Pacific Railway
1400 Douglas Street
Omaha, NE 68179

*P8. Recorded by:
R. Ramirez and F. Smith
SWCA Environmental Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030

*P9. Date Recorded:
February 13, 2009

*P10. Survey Type:
Intensive

*P11. Report Citation: Historic Property Survey Report, Nogales Street Grade Separation and Gale Avenue/Walnut Drive Widening Project, City of Industry, Los Angeles County, California (SWCA Environmental Consultants 2009).

*Attachments: ☐ NONE ☒Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☒ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

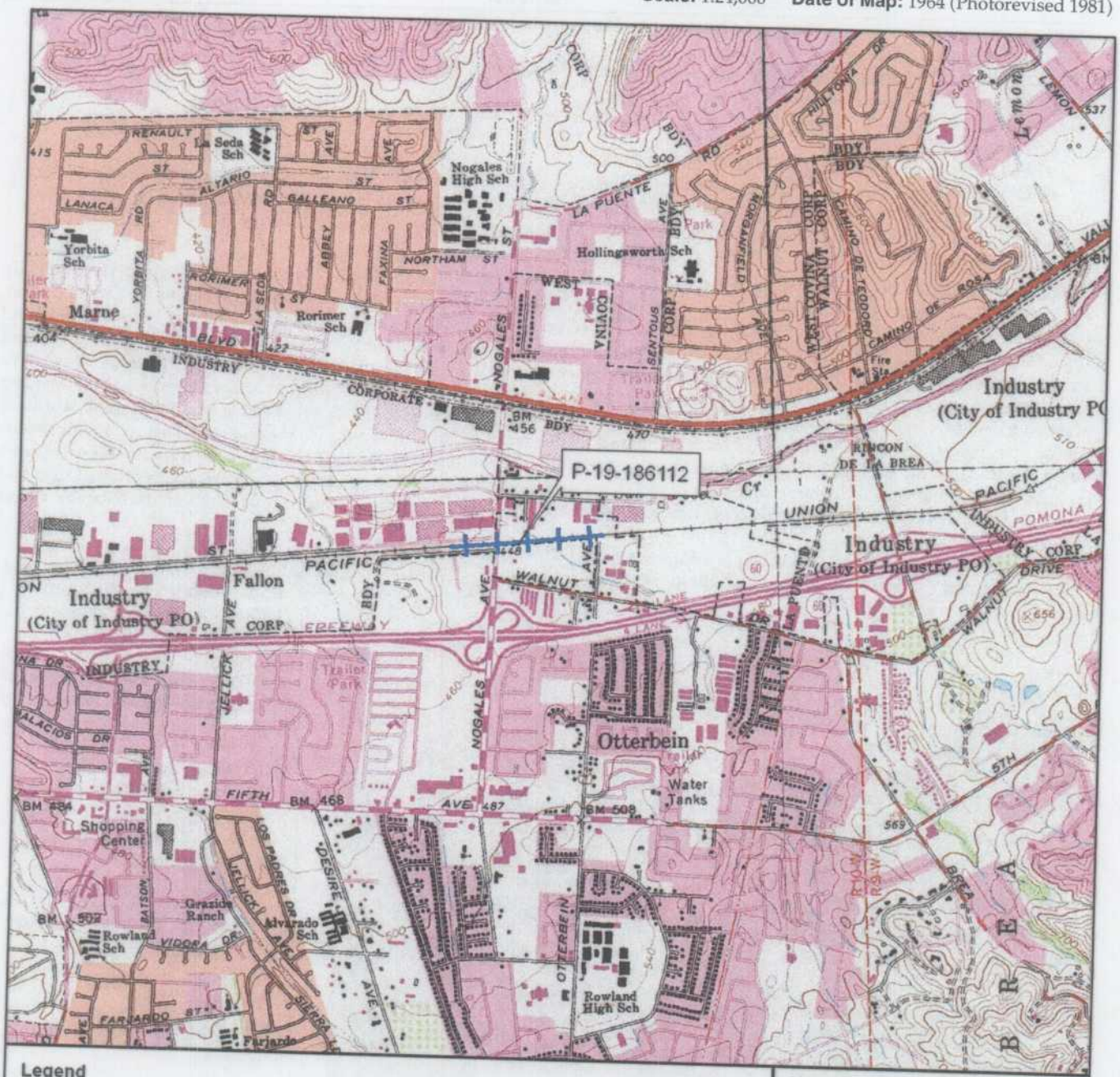
LOCATION MAP

Primary # 19-186112 (Update)
HRI#
Trinomial

*Resource Name or #: Union Pacific Railroad

*Map Name: La Habra, CA

*Scale: 1:24,000 *Date of Map: 1964 (Photorevised 1981)



Legend

P-19-186112

Land Grant: La Puente
T2S, R10W
Unsectioned

N

1:24,000

0 500 1,000 2,000 Feet

0 250 500 Meters

USGS 7.5' Quadrangle:
La Habra, CA 1964
(Photorevised 1981)

Nogales Street Grade Separation and Gale Avenue/ Walnut Drive Widening Project

Project Location Map

SWCA
ENVIRONMENTAL CONSULTANTS

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # 19-186112 (Update)
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

*Resource Name or # Union Pacific Railroad

B1. Historic Name: Los Angeles, San Pedro & Salt Lake Railroad
B2. Common Name: Union Pacific Railroad/ Metro Link, Riverside Line
B3. Original Use: railroad B4. Present Use: railroad

***B5. Architectural Style:**

***B6. Construction History:** Railroad originally built circa 1905. Alterations include replacement of wood ties on the southern set of tracks with concrete sleepers and construction of steel and concrete box pads, contemporary crossing arms and other contemporary equipment (circa 1993).

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:** None

B9a. Architect: b. Builder:

***B10. Significance: Theme:** **Area:**

Period of Significance: **Property Type:** **Applicable Criteria:**

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The subject property was first built by Los Angeles & San Pedro Railroad, which had become Los Angeles, San Pedro and Salt Lake Railroad by 1905, when this segment was constructed. The current owner of the subject property, Union Pacific Railroad was the third transcontinental railroad to reach Los Angeles, arriving through its subsidiary, the Los Angeles Terminal Railroad (predecessor to the Los Angeles & Salt Lake). Shortly after Union Pacific's arrival, the line became Los Angeles & Salt Lake Railroad through a series of mergers and acquisitions. By the turn of the twentieth century, the three main competing railroads in the west were the Southern Pacific, Atchison Topeka & Santa Fé and Union Pacific (UP).

See Continuation Sheet.

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

Ambrose, Stephen E. *Nothing Like It in the World: The Men Who Built the Transcontinental Railroad, 1863-1869*.New York: Simon and Schuster, 2000, various.

Ashkar, Shahira. Primary form for P-19-186112. On file at the South Central Coastal Information Center (Continued on Continuation Sheet)

B13. Remarks: None

***B14. Evaluator:** Francesca Smith

***Date of Evaluation:** February 13, 2009

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



***B10. Significance:**

The arrival of railroads to southern California brought unprecedented growth, later called the "'boom of the 'eighties" which took place predominantly in areas served by the relatively new technology. Citrus crops benefited greatly from the invention of the refrigerated car, and southern California citriculture, which became a significant economic and cultural influence was among the results of that innovation. When built, the line went through undeveloped land, which was sparsely populated at the turn of the twentieth century by agricultural uses, with homes and scattered small businesses.

Also at the dawn of the 1900s, Senator William Andrews Clark (1888-1925) acquired the struggling Los Angeles Terminal Railway at the growing city's developing port with the intention of serving the growing mining industry in Salt Lake City. In 1901, the line was reestablished as the San Pedro, Los Angeles & Salt Lake Railroad, and plans were made to construct a line connecting southern California with Salt Lake City, Utah. Despite Union Pacific's opposition, the owner assembled considerable political and financial support. The smaller railroad began construction work along the existing UP grade, resulting in a notorious but brief "railroad war" in Nevada. The rivals came to an agreement in 1903, Clark ended up acquiring UP alignments south of Salt Lake City, and Union Pacific received half-ownership in the LA, SP & SL RR. Once the disagreements were settled, the completed line, likely including the subject property, began service in 1905. Four years later, in 1909, the town of San Pedro was annexed to Los Angles (affording the growing city its own port) and the town's name was omitted from the railroad title. In 1916, the railroad became the Los Angeles & Salt Lake Railroad (Signor).

In 1921, Clark's half interest in the LA & Salt Lake was transferred to Union Pacific's ownership. After the second World War, rising popularity of private automobiles, trucks and airlines greatly cut into railroad business lines- which been an enormously profitable and powerful component of American business. The Metro Link passenger railroad acquired property in about 1992 and began service between Riverside and Los Angeles in 1993. UP made an unsuccessful bid to purchase Santa Fé Railway the following year, although it was determined that the unification would result in too many duplicate routes, amounting to a monopoly. In 1996, the UP and SP merged, ostensibly ending more than 100 years of rivalry.

The subject property is not eligible for listing in the National or California registers under Criterion A/1, despite its obvious connection with events that shaped the development of the community and region. Because of alterations to the tracks, including periodic replacement of track, hardware and ties, changes in grading and sweeping changes in setting from open agricultural land, to a small to a highly urbanized area, the railroad right-of-way does not retain sufficient integrity to impart its historic significance. Although the rail line had not been relocated, the rail, track, ballast, landforms and setting have all been irretrievably altered, diminishing its integrity of design, setting, materials, workmanship, feeling, and association. This segment of the UPRR is not eligible under Criterion B/2, as any connections to persons important in our history were not direct, but part of much larger portfolios of investments held by various wealthy investors. The subject property is part of a standard contemporary freight railroad line currently "the largest railroad in north America" (Union Pacific), and a passenger commuter line. As a standardized modern railroad alignment, the property does not warrant consideration under Criterion C/3. Due to extensive alterations to the tracks, there is no data potential under Criterion D/4 because the resource is not the principal source of any important information. As an altered and ubiquitous resource type, subject property is not eligible as a contributor to a larger National or California Register-eligible historic district.

***B12. References:**

Dumke, Glenn S. *The Boom of the 'Eighties.* San Marino: Huntington Library, 1944, various.(See Continuation Sheet)

Hine, Robert V. and John Mack Faragher. *The American West: A New Interpretive History.* New Haven: Yale University Press, 2000, 291.

Lewis, Oscar. *The Big Four: The Story of Huntington, Stanford, Hopkins, and Crocker, and of the Building of the Central Pacific.* New York: A.A. Knopf, 1938, various.

Robinson, John W. "The Big Four Move South: The Building of The Southern Pacific Railroad" *California Territorial Quarterly* Fall 2003, 4-29.

Signor, John R. *Southern Pacific Lines, Pacific Lines Stations Volume 1: Coast Division, Los Angeles Division, Portland Division* Pasadena: Southern Pacific Historical and Technical Society, 1997, 31.

Signor, John R. *The Los Angeles and Salt Lake Railroad Company: Union Pacific's Historic Salt Lake Route.* San Marino, California: Golden West Books, 1988, various.

Wilson, Neill Compton and Frank J. Taylor. .*Southern Pacific: The Roaring Story of a Fighting Railroad.* McGraw-Hill, 1952, various.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LINEAR FEATURE RECORD

Primary # 19-186112 (Update)
HRI #
Trinomial

 Resource Name or #: Union Pacific Railroad

L1. Historic and/or Common Name: San Pedro, Los Angeles & Salt Lake Railroad, Metro Link- Riverside Line

L2a. Portion Described: ☐ Entire Resource ☒ Segment ☐ Point Observation **Designation:**

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map) 11S, 417804mE/3762236mN (westernmost point) and 11S, 418387mE/3762262mN (easternmost point); railroad tracks located on the east and west sides of Nogales Street.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.) See Primary Form, page 1.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

- **a. Top Width:** 4'- 8.5 " per track
- **b. Bottom Width:** ± 9'-0" per track
- **c. Height or Depth:** 5" (track- top to bottom)
- **d. Length of Segment:** ± 0.38 miles

L4e. Sketch of Cross-Section (include scale) **Facing:**

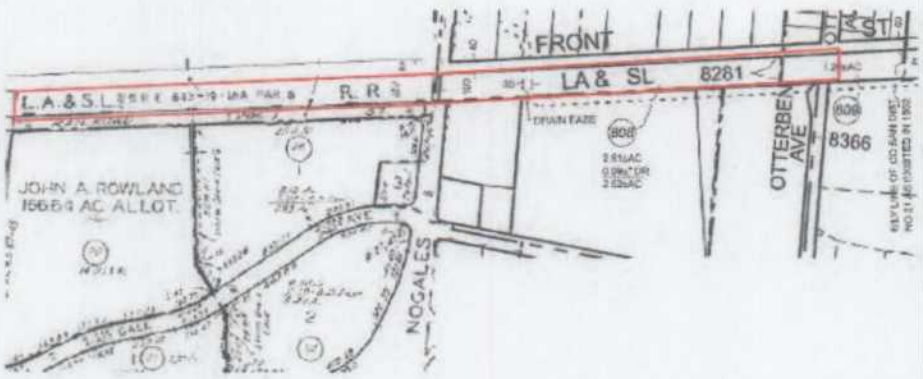
L5. Associated Resources: None

6. Setting: Urban (commercial/industrial)

L7. Integrity Considerations: This segment has been subject to ongoing maintenance, including replacement of tracks, ballast and ties. Industrial urban development has greatly altered the integrity of setting of the railroad.

L8b. Description of Photo, Map, or Drawing (View, scale, etc.)

L8a. Photograph, Map or Drawing



Annotated, combined Los Angeles County Assessors Index Maps (8760- Sheet 5, 2009 and 8264 Sheet 21, 1992) depicting approximate limits of subject property.

L9. Remarks: None

L10. Form Prepared by:
R. Ramirez and F. Smith
SWCA Environmental Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030

L11. Date: February 13, 2009

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 19-186112 (Update)
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #:** Union Pacific Railroad

P1. Other Identifier: former Southern Pacific Railroad, Los Angeles Subdivision Sunset Line

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** La Habra **Date:** 1964 (photorevised 1981) **T** 2S; **R** 10W; unsectioned; S.B.**B.M.**

c. Address: Mile Post 22.4 City: n/a Zip: n/a

d. UTM: Zone: 11 ; 417804 mE/ 3762236 mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: The UPRR tracks are located within the City of Industry. From the Nogales Street exit on State Route 60, proceed 0.24 miles north on Nogales Street. The tracks extend east and west of the Nogales Street crossing at an elevation of 460 feet above mean sea level.
APNs: 8760-005-808, 8760-005-809, 8760-005-810, and 8264-021-801.

***P3a. Description:** This update records a 0.38-mile long segment of the Union Pacific Railroad (UPRR) property originally recorded by S. Ashkar in 1999. The original site record includes the railroad from its beginning in Los Angeles to the City of Colton, California. The portion of the UPRR property in this site record update is located in the City of Industry at Nogales Street. This 0.38-mile long segment of the property consists of two sets of parallel tracks running east to west. The tracks are approximately 6 feet apart and set in ballast. The northern tracks are set with wooden ties with the southern tracks set with concrete sleepers. These segments of tracks are contiguous at the east and west ends to additional portions of railroad track beyond. The tracks are not physically distinguishable from other steel, standard gauge, continuous welded freight railroad tracks. The track bed is roughly flat and noted by a raised berm. This segment contains one at-grade crossing at Nogales Street which has been updated with steel and concrete box pads and contemporary signals (dates unknown). Alterations include replacement of wood ties on the southern set of tracks with concrete sleepers and construction of steel and concrete box pads, contemporary crossing arms and other contemporary equipment (dates unknown) at the Nogales Street crossing.

***P3b. Resource Attributes:** HP11 (Engineering structure); HP39 (Other-railroad)

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)



P5b. Description of Photo: UPRR Nogales Street crossing, view to west.

***P6. Date Constructed/Age and Sources:** ☒ Historic circa 1877-present ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
Union Pacific Railway
1400 Douglas Street
Omaha, NE 68179

***P8. Recorded by:**
R. Ramirez and F. Smith
SWCA Environmental Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030

***P9. Date Recorded:**
February 13, 2009

***P10. Survey Type:**
Intensive pedestrian

***P11. Report Citation:** Historic Property Survey Report, Nogales Street Grade Separation and Gale Avenue/Walnut Drive Widening Project, City of Industry, Los Angeles County, California (SWCA Environmental Consultants 2009)

***Attachments:** ☐ NONE ☒Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☒ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Z

***Resource Name or #** Union Pacific Railroad

B1. Historic Name: Southern Pacific Railroad
B2. Common Name: Union Pacific Railroad
B3. Original Use: railroad
B4. Present Use: railroad
***B5. Architectural Style:**
***B6. Construction History:** Railroad originally built between 1874 and 1877. Alterations include replacement of wood ties on the southern set of tracks with concrete sleepers and construction of steel and concrete box pads, contemporary crossing arms and other contemporary equipment at the Nogales Street crossing.

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:** None

B9a. Architect:
b. Builder:
***B10. Significance: Theme:**
Area:
Period of Significance: **Property Type:** **Applicable Criteria:**
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The subject property was constructed as part of the Los Angeles Division of the Southern Pacific Railroad. The line extended northwest from Yuma, Arizona, into California through the Imperial Valley, over the San Bernardino Mountains, terminating just beyond the San Gabriel Valley in Los Angeles (Askar 1999). Southern Pacific, also called SP or Espee built the subject property between 1874 and 1877 as the third railroad in the area.

The subject property is not eligible for listing in the National or California registers under Criterion A/1, despite its obvious connection with events that shaped the development of the community and region. Because of alterations to the tracks, including periodic replacement of track, hardware and ties, changes in grading and sweeping changes in setting from open agricultural land, to a small to a highly urbanized area, the railroad right-of-way does not retain sufficient integrity to impart its historic significance. Although the rail line had not been relocated, the rail, track, ballast, landforms and setting have all been irretrievably altered, diminishing its integrity of design, setting, materials, workmanship, feeling, and association. The UPRR is not eligible under Criterion B/2, as any connections to persons important in our history were not direct, but part of much larger portfolios of investments held, over time by various wealthy investors. The subject property is part of a standard contemporary freight railroad line and a component of Union Pacific Corporation, currently "the largest railroad in north America" (Union Pacific). As a standardized modern railroad track the property does not warrant consideration under Criterion C/3. Due to extensive alterations to the tracks, there is no data potential under Criterion D/4 because the resource is not the principal source of any important information. As an altered and ubiquitous resource type, subject property is not eligible as a contributor to a larger National or California Register-eligible historic district.

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

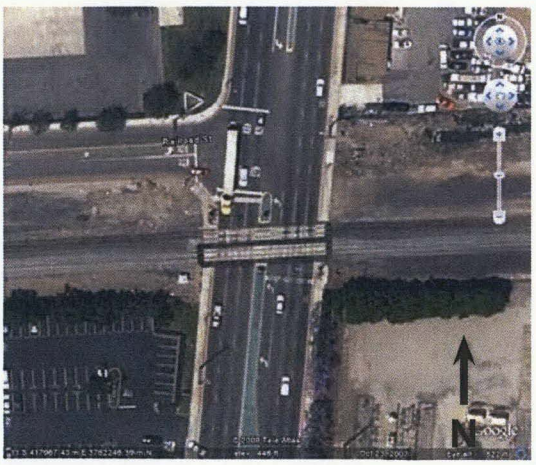
Ambrose, Stephen E. *Nothing Like It in the World: The Men Who Built the Transcontinental Railroad, 1863-1869.*New York: Simon and Schuster, 2000, various.

Ashkar, Shahira. Primary form for P-19-186112. On file at the South Central Coastal Information Center (Continued on Continuation Sheet)

B13. Remarks: None
***B14. Evaluator:** Francesca Smith
***Date of Evaluation:** February 13, 2009

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LINEAR FEATURE RECORD

Primary # 19-186112 (Update)
HRI #
Trinomial

 Resource Name or #: Union Pacific Railroad

L1. Historic and/or Common Name:) Southern Pacific Railroad, Los Angeles Division, Sunset Route

L2a. Portion Described: ☐ Entire Resource ☒ Segment ☐ Point Observation **Designation:**

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map) 11S, 417804mE/3762236mN (westernmost point) and 11S, 418387mE/3762262mN (easternmost point); Railroad tracks located on the east and west sides of Nogales Street.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.) See Primary Form, page 1.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

- **a. Top Width:** 4′- 8.5″ per track
- **b. Bottom Width:** ± 9′-0″ per track
- **c. Height or Depth:** 5″ (track- top to bottom)
- **d. Length of Segment:** ± 0.38 miles

L4e. Sketch of Cross-Section (include scale) **Facing:**

L5. Associated Resources: None

6. Setting: Urban (commercial/industrial).

L7. Integrity Considerations: This segment has been subject to ongoing maintenance, including replacement of tracks, ballast and ties. Industrial urban development has greatly altered the integrity of setting of the railroad.

L8b. Description of Photo, Map, or Drawing (View, scale, etc.)

L8a. Photograph, Map or Drawing

See Location Map

L9. Remarks: None

L10. Form Prepared by: R. Ramirez and F. Smith
SWCA Environmental Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030

L11. Date: February 13, 2009

***B10. Significance:**

The Southern Pacific Railroad Company was founded in 1868 by Charles Crocker (1813-1888), Mark Hopkins (1813-1878), Collis P. Huntington (1821-1900) and Leland Stanford (1824-1893), who were collectively and infamously known as "the big four." The company evolved from expansion of what had been Central Pacific Railroad (CP or Central Pacific) in the 1860s. Two years after its inception SP management made the monumental decision to construct the first rail line between San Francisco and the Colorado River. By that time, SP had already established monopolies in California and Nevada, charging the highest shipping rates in the country. Part of the Big Four's strategy was to build interconnecting separate lines that when joined, would strategically control California. Union Pacific, another new railroad in the late 1860s, had numerous disputes regarding rights-of-way with SP at the time; those conflicts were to plague the otherwise very successful company over the next century and beyond.

The subject property was constructed as part of the Los Angeles Division of the Southern Pacific Railroad. The line extended northwest from Yuma, Arizona, into California through the Imperial Valley, over the San Bernardino Mountains, terminating just beyond the San Gabriel Valley in Los Angeles (JRP). Southern Pacific, also called SP or Espee built the subject property between 1874 and 1877 as the third railroad in the area.

The first to be built in Los Angeles was the Los Angeles & San Pedro Railroad (later Los Angeles, San Pedro and Salt Lake) in 1869. In 1876, SP was finished next, stretching from the San Joaquin Valley, which notably provided the new city with the capability to transport goods from the Pacific port across the United States. The current owner of the subject property, Union Pacific Railroad was the third transcontinental railroad to reach Los Angeles, arriving through its subsidiary, the Los Angeles Terminal Railroad. Shortly after that, the line became Los Angeles & Salt Lake Railroad through a series of mergers and acquisitions. At the turn of the century, the three main competing railroads in the west were the Southern Pacific, Atchison Topeka & Santa Fé and Union Pacific.

The arrival of railroads to southern California brought unprecedented growth, later called the "'boom of the 'eighties" which took place predominantly in areas served by the relatively new technology. Shortly after its completion, the Los Angeles Division was connected to New Orleans, Louisiana, in 1883, by a southern course and named the "Sunset Route." Citrus crops benefited greatly from the invention of the refrigerated car, and southern California citriculture, which became a significant economic and cultural influence was among the results of that innovation. Numerous communities were built and prospered into the mid-20th century based on specialized agriculture (Signor). When built, the line went through undeveloped land, which was improved by the late 19th century by agricultural uses, and at the turn of the 20th century, by homes and scattered small businesses. Local towns, including San Gabriel, Alhambra, Rosemead and Pasadena all prospered because of their proximity to the railroads. In the project area, the Mission Arcángel San Gabriel (b. 1776) notably predated the railroads, and was surrounded by mission-related uses. Where the line crossed South Del Mar Avenue, in 1925, three sets of side-by side tracks were flanked by a planning mill, citrus packing houses, a freight house and a railroad depot. The line is now a single track and none of the described buildings remain. The area is currently densely developed by residential and industrial uses.

Over the following quarter-century, Edward H. Harriman, former president of rival Union Pacific gained control of SP and CP which he retained from 1898 until his death in 1909. It was Harriman's initiative to merge the competing railroad powerhouses. SP remained under the control of UP until 1913. After the second World War, rising popularity of private automobiles, trucks and airlines greatly cut into railroad business lines- which been an enormously profitable and powerful component of American business. Following an unsuccessful merger attempt in 1988 with the Atchison Topeka & Santa Fé Railway, SP was purchased by the owners of Denver & Rio Grande Western Railroad (Denver & Rio Grande). Subsequently, the Denver and Rio Grande with Cotton Belt and SP operated as Southern Pacific Lines. UP made an unsuccessful bid to purchase Santa Fé Railway in 1994. It was determined that the unification would result in too many duplicate routes which amounted to a monopoly. Union Pacific shortly thereafter acquired the Chicago & North Western. In 1996, the UP and SP merged, closing more than 100 years of rivalry.

***B12. References:**

Dumke, Glenn S. *The Boom of the 'Eighties.* San Marino: Huntington Library, 1944, various.(See Continuation Sheet)

Hine, Robert V. and John Mack Faragher. *The American West: A New Interpretive History*. New Haven: Yale University Press, 2000, 291.

Klein, Maury. *Union Pacific: The Rebirth 1894-1969*. Garden City, NY: Doubleday, 1987, various.

Lewis, Oscar. *The Big Four: The Story of Huntington, Stanford, Hopkins, and Crocker, and of the Building of the Central Pacific*. New York: A.A. Knopf, 1938, various.

Robinson, John W. "The Big Four Move South: The Building of The Southern Pacific Railroad" *California Territorial Quarterly* Fall 2003, 4-29.

Sanborn Fire Insurance Map Company. "San Gabriel, California" 1925 index sheet and sheet 10.

Signor, John R. *Southern pacific Lines, Pacific Lines Stations Volume 1: Coast Division, Los Angeles Division, Portland Division* Pasadena: Southern Pacific Historical and Technical Society, 1997, 31.

Union Pacific," Corporate Information: Company Overview" 16 February, 2009
< http://www.uprr.com/aboutup/corporate_info/uprrover.shtml>

Wilson, Neill Compton and Frank J. Taylor. .*Southern Pacific: The Roaring Story of a Fighting Railroad.* McGraw-Hill, 1952, various.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

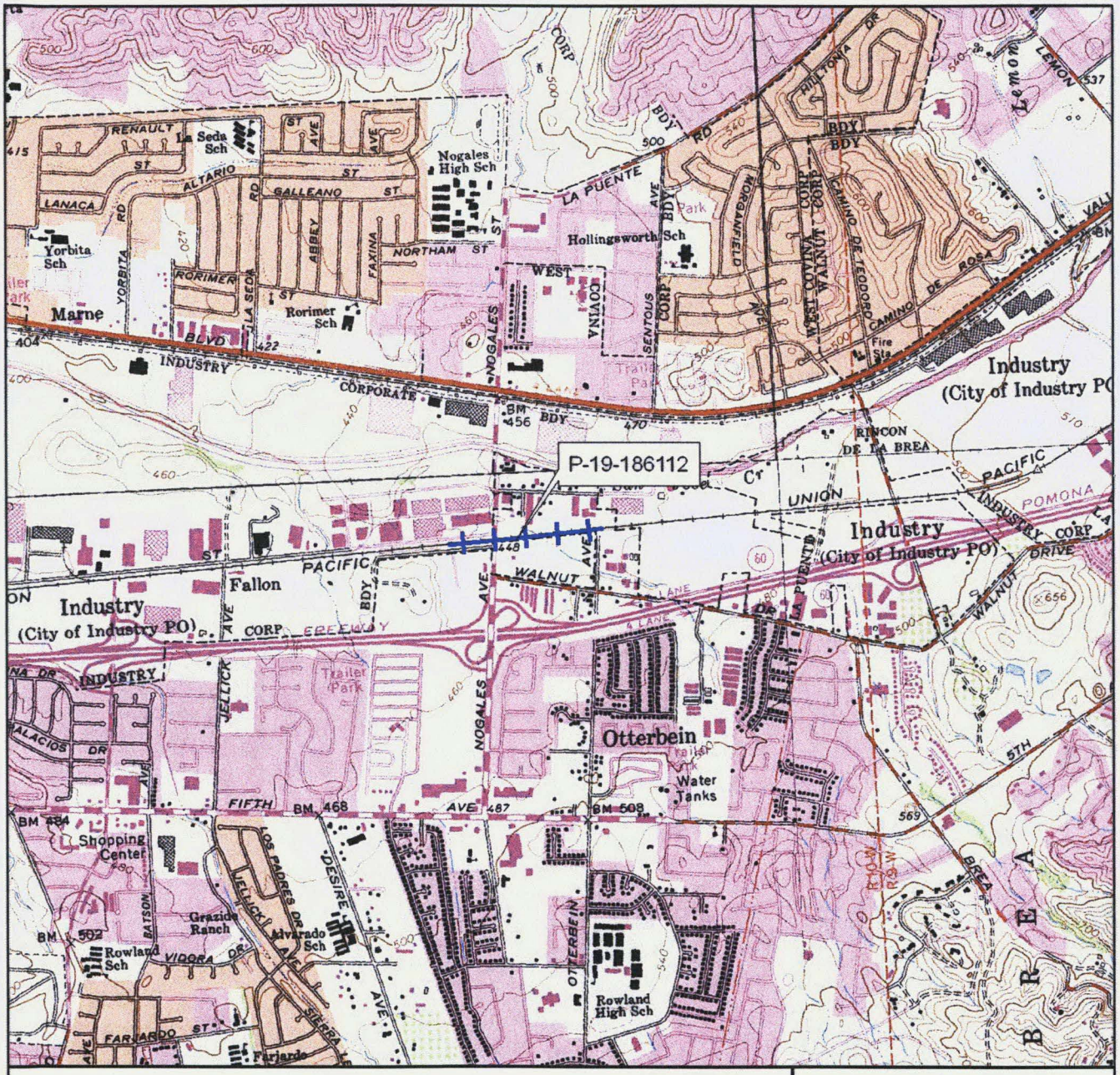
LOCATION MAP

Primary # 19-186112 (Update)
HRI#
Trinomial

***Resource Name or #:** Union Pacific Railroad

***Map Name:** La Habra, CA

***Scale:** 1:24,000 ***Date of Map:** 1964 (Photorevised 1981)



Legend

P-19-186112

Land Grant: La Puente
T2S, R10W
Unsectioned

N

1:24,000

0 500 1,000 2,000 Feet

0 250 500 Meters

USGS 7.5' Quadrangle:
La Habra, CA 1964
(Photorevised 1981)

Nogales Street Grade Separation and Gale Avenue/ Walnut Drive Widening Project

Project Location Map

SWCA
ENVIRONMENTAL CONSULTANTS

DPR 523J (1/95)

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 19-186112 (Update)
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code **Reviewer** **Date**

***Resource Name or #:** Union Pacific Railroad (2.2-mile segment) (Map Reference #2-35)

P1. Other Identifier: former Southern Pacific Railroad's Los Angeles Division and Sunset Line structure

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Los Angeles and El Monte **Date:** 1966 (photo revised 1981 and 1994) **T** ; **R** ; **;** S.B.**B.M.**

c. Address: Mile Posts 489.5-491.8 City: Alhambra, San Gabriel, Rosemead Zip: n/a

d. UTM: Zone: ; mE/ mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: ~245 feet above msl

Tracks on the south side of West Mission Drive, north of Main Street and East Angelino Avenue, and Santa Fe Avenue and Grand Avenue between San Pasqual Drive and North Muscatel Avenue

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Union Pacific Railroad (UPRR) property in the project APE occupies a 2.2-mile long, narrow series of parcels, containing a single-track freight railroad. The track is generally continuous welded rail, set in a roadbed topped with ballast and concrete ties (recent, but dates unknown). This segment of track is contiguous at the east and west ends to the historic Southern Pacific Los Angeles Division and Sunset Route in and out of Los Angeles. This 2.2-mile roadbed segment rises and falls with gentle grades on a raised berm with various at-grade crossings, spanning two culverts and one bridge in the project area. At-grade crossings include: Mission Road, Ramona, Del Mar, and Walnut Grove avenues, and San Gabriel Boulevard; each is paved with steel-enframed concrete box-pad pavers, and signaled with recent code-compliance crossing arms, flashing lights, and sound devices.

Alterations in the past circa 45 years include loss of parallel local-service sidings, some mainline grade elevation lowering on the west end, replacement of wood ties with concrete ties; installation of steel-enframed concrete pavers at most crossings, code-compliant crossing arms and other safety equipment at grade crossings, and reballasting (dates unknown). Various recent prefabricated service sheds house crossing and signal electronics and machinery.

***P3b. Resource Attributes:** (List attributes and codes) HP11 (Engineering structure); HP39 (Other-railroad)

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #) View southeast from San Gabriel Boulevard crossover, January 24, 2009, Mission 104-g

***P6. Date Constructed/Age and Sources:**

☒ Historic ☐ Prehistoric ☐ Both
circa 1877-present

***P7. Owner and Address:**
Union Pacific Railroad
1416 Dodge St
Omaha, NE 68179-0001

***P8. Recorded by:**
F. Smith and J. Steely
SWCA Environmental Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030

***P9. Date Recorded:** June 18, 2009

***P10. Survey Type:** (Describe) Intensive

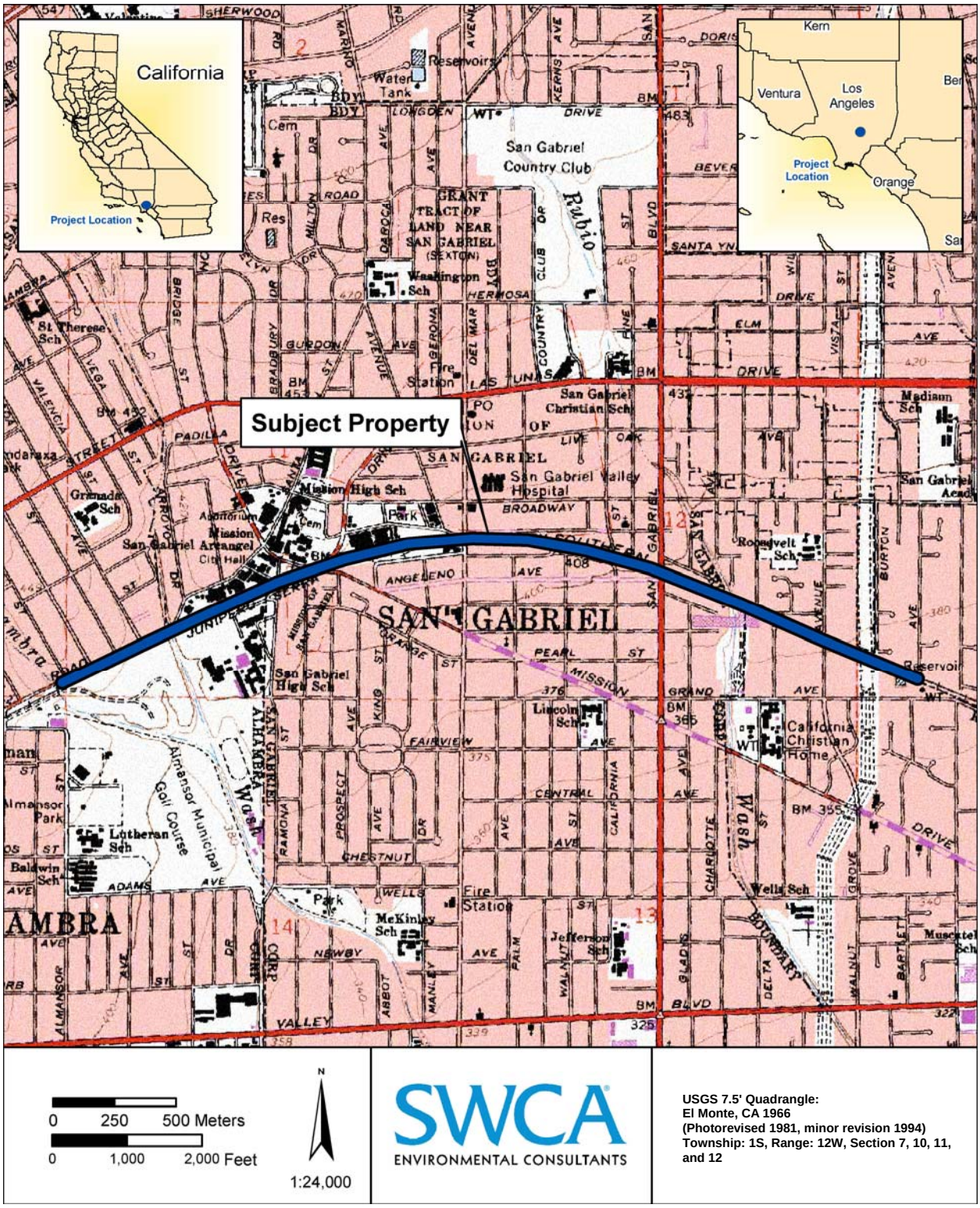
***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")

Historical Resources Evaluation Report for the San Gabriel Trench Project, Cities of San Gabriel, Alhambra, and Rosemead, Los Angeles County, California (SWCA Environmental Consultants 2009)

***Attachments:** ☐ NONE ☒Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☒ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (List):

***Resource Name or #:** Union Pacific Railroad (2.2-mile segment) (Map Reference #2-35)

***Map Name:** El Monte, CA ***Scale:** 1:24,000 ***Date of Map:** 1966 (Photorevised 1981, Minor revision 1994)



USGS 7.5' Quadrangle:
El Monte, CA 1966
(Photorevised 1981, minor revision 1994)
Township: 1S, Range: 12W, Section 7, 10, 11, and 12

L1. Historic and/or Common Name: Southern Pacific Railroad, Los Angeles Division, Sunset Route

L2a. Portion Described: ☐ Entire Resource ☒ Segment ☐ Point Observation **Designation:**

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map)

Railroad track on the south side of West Mission Drive, north of Main Street and East Angelino Avenue, and Santa Fe Avenue and Grand Avenue between San Pasqual Drive and North Muscatel Avenue in the cities of Alhambra, San Gabriel, and Rosemead.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.) See Primary Form, page 1.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

a. Top Width: 4′- 8.5″ (standard gauge)
b. Bottom Width: ± 100-foot right of way
c. Height or Depth: 12-18″ roadbed to rail top
d. Length of Segment: c. 2.2 miles

L5. Associated Resources: 2 culverts (Alhambra Wash, and culvert just west of Main Street and Lafayette Street in San Gabriel) and 1 bridge (Rubio Wash)

L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)

See Primary Form, page 1.

L4e. Sketch of Cross-Section (include scale) **Facing:** n/a

sketch of section (no scale)

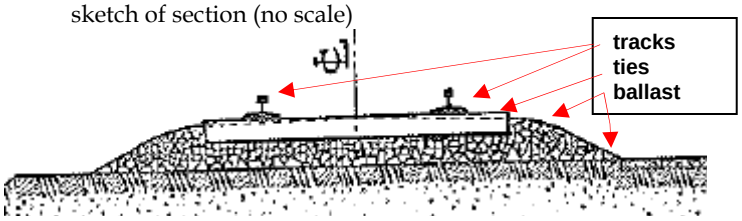
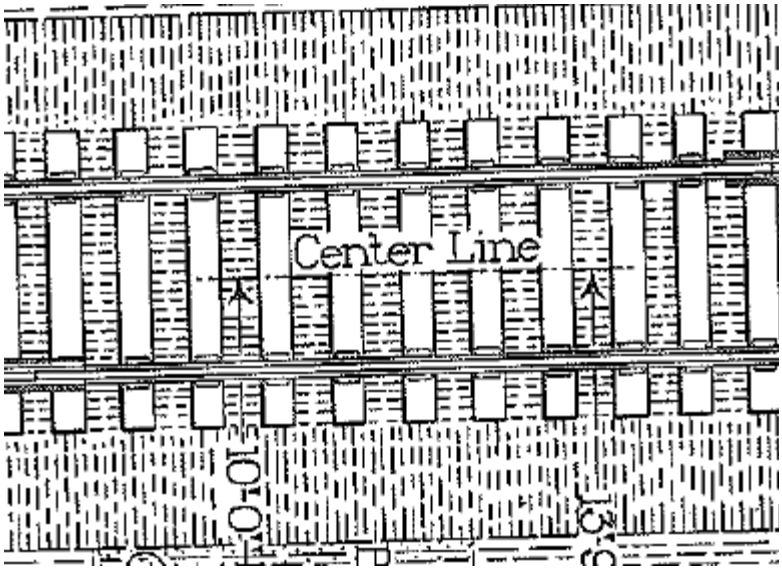


Figure 2. Annotated section sketch: excerpted from *Southern Pacific Lines, Common Standard Plans*, adopted 1924, sheet 11, C.S. 561 (formerly C.S. 403).

L7. Integrity Considerations:

This segment of railroad track has been subject to ongoing maintenance, which has included replacement of rails, ballast, and ties as needed. Widespread agricultural (1890s) and suburban development (1910s and later) along this route segment altered the setting of the railroad at the turn of the 20th century. In the early 20th century Alhambra and Rubio washes were channelized (late 1920s, early 1930s). Urban development including expansion of adjacent residential tracts (1920s-1970s), extensive commercial development (retail and office, 1910s-1960s), industrial growth and street/grade-crossing realignments (1940s-1990s) have greatly altered the railroad's integrity aspects of materials, workmanship, and setting. Alhambra, San Gabriel, and Rosemead each once fronted the railroad with distinctive depot buildings, all presumably removed more than 45 years ago with a consequent additional loss in integrity of design, feeling, and association.

L8a. Photograph, Map or Drawing



L8b. Description of Photo, Map, or Drawing (View, scale, etc.)

Figure 3. Plan view: excerpt from *Southern Pacific Lines, Common Standard Plans*, adopted 1924, sheet 11, C.S. 561 (formerly C.S. 403). No scale.

L9. Remarks:

L10. Form Prepared by: (Name, affiliation, and address)

J. Steely and F. Smith
SWCA Environmental Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030

L11. Date: August 31, 2009

***B10. Significance:**

The Southern Pacific Railroad Company (SP or Espee) was acquired in 1868 by Charles Crocker (1813-1888), Mark Hopkins (1813-1878), Collis P. Huntington (1821-1900), and Leland Stanford (1824-1893), collectively known as "the Big Four." Their company evolved from expansion of the Central Pacific Railroad (CP) in the 1860s, the western half of the First Transcontinental Railroad. Two years after SP's inception and shortly after completion of the CP's Transcontinental efforts, SP management under the Big Four maneuvered considerable resources to construct a rail line from San Francisco southeast to the Colorado River to control the alignment of the Second Transcontinental Railroad. By that time, the Big Four had already established monopolies in California and Nevada. Part of the Big Four's surreptitious strategy was to build many separate lines that when joined, would control not just transportation but business and politics in California (Lewis).

The first railroad to be built into Los Angeles was the 21-mile Los Angeles & San Pedro Railroad (LA&SP) connecting the ambitious city with the Pacific Ocean port near Wilmington in 1869. Two years later the Big Four's SP connected Los Angeles to the north via Soledad Canyon in the San Gabriel Mountains with SP's San Joaquin Valley line from San Francisco. This link included the SP's fabled line through the Tehachapi Mountains, notably providing California's rapidly expanding inland agricultural regions with access to another Pacific port at San Pedro, and to rail routes across the United States. Soon after reaching Los Angeles, the SP turned east toward the Colorado River, passing along the De Anza route and Old Spanish Trail through the old Spanish Mission hamlet of San Gabriel as the railroad forged its right of way eastward through the fertile basins of the San Gabriel and Santa Ana Rivers.

Thus, between 1876 and 1877 the Southern Pacific constructed its historic line evaluated for the current grade-trenching Alameda Corridor East project (in 2009) as part of what became its Los Angeles Division and its transcontinental "Sunset Route." The line extended east from Los Angeles to Colton, through San Gorgonio Pass between the San Bernardino and San Jacinto Mountains, and southeast into the Imperial Valley, to present Yuma on the Colorado River. Port and national railroad connections for southern California brought unprecedented growth, later called the "boom of the 'eighties" that took place predominantly in areas served by the relatively new transportation technology (Dumke). When the SP's Sunset Route completed its tracks across Arizona to New Mexico in 1881, then New Orleans in 1883, the Los Angeles Division became part of the nation's Second Transcontinental Railroad.

With railroad promotion and long-distance shipping, and development of local irrigation water systems, citrus crops around San Gabriel and the eventual communities of Alhambra and Rosemead developed at the turn of the century as the major industry along SP's Los Angeles Division. Citrus producers soon benefited further from the invention of refrigerated rail cars, and southern California "citriculture" became a significant economic and cultural influence as a result. Numerous Los Angeles area communities emerged and prospered into the mid-20th century because of their focus on such specialized agriculture (Signor).

By 1900 the three main competing railroads in all of California were the Southern Pacific, the Atchison Topeka & Santa Fe, and Union Pacific, each with east-west mainlines through the San Gabriel and Santa Ana river valleys into Los Angeles. With the death of the last Big Four magnate and SP president C.P. Huntington in 1900, his archrival Edward H. Harriman of the Union Pacific gained control of SP (including the original CP) in 1901. Huntington's nephew Henry after 1901 invested his inheritance in Los Angeles-area rail systems, including the Pacific Electric and its interurban line that connected San Gabriel and Alhambra with downtown Los Angeles through 1940 (the line followed S. Mission Drive into the city's east side and Junipero Serra Drive out the west side; no trace of this line remains in the project area). Harriman meanwhile coordinated SP and UP operations until his death in 1909, and SP remained under control of UP until a Supreme Court-ruled separation in 1913. Railroads entered the 20th century as enormously profitable and powerful components of American culture, but after World War II rising popularity of private automobiles, trucks and commercial airlines cut deeply into railroad business. Small towns such as San Gabriel, Alhambra, and Rosemead eventually lost their depots as passenger trains and local rail traffic disappeared and the SP Los Angeles Division primarily carried through-freight trains. The sustained pattern of heavy through-traffic has resulted in plans for the current project.

During the railroad merger frenzy after federal deregulation in 1980, SP and the Santa Fe Railway attempted to merge in 1988, but instead SP was purchased by the owner of the Denver & Rio Grande Western Railroad (aka Rio Grande). Subsequently, Rio Grande with Cotton Belt and SP lines all operated as "Southern Pacific." In 1995 SP's old rival and partner Union Pacific acquired the Chicago & North Western for direct access to Chicago, and then in 1996 the UP acquired SP to restore much of Harriman's old system.

When built, the subject property railroad line went through undeveloped lands, previously dominated by Mission-related ranching and agriculture, then improved in the late 19th century by widespread "citriculture." By the turn of the 20th century, the surrounding properties were characterized by single-family residences and scattered small businesses concentrated in San Gabriel. In the ensuing years, local communities including San Gabriel, Alhambra, Rosemead, and Pasadena all prospered because of their proximity to the railroads. In the project area, the Mission San Gabriel Arcángel Church, Sacristy, and Padres' Quarters, along with surviving adobe homes including the Ortega-Vigare, Las Tunas, and Lopez-de Lowther adobes (Properties No. 3-35, 3, 49, and 3A-1) notably predated the railroad. At the peak of local SP rail service in 1925, where the railroad line crossed South Del Mar Avenue, three parallel tracks were flanked by a planning mill, citrus packing houses, a freight house, and the San Gabriel railroad depot (refer to Figure 3). The line is now a single track mainline and none of the described historic-age buildings remain. The surrounding area is currently densely developed by residential and industrial uses.

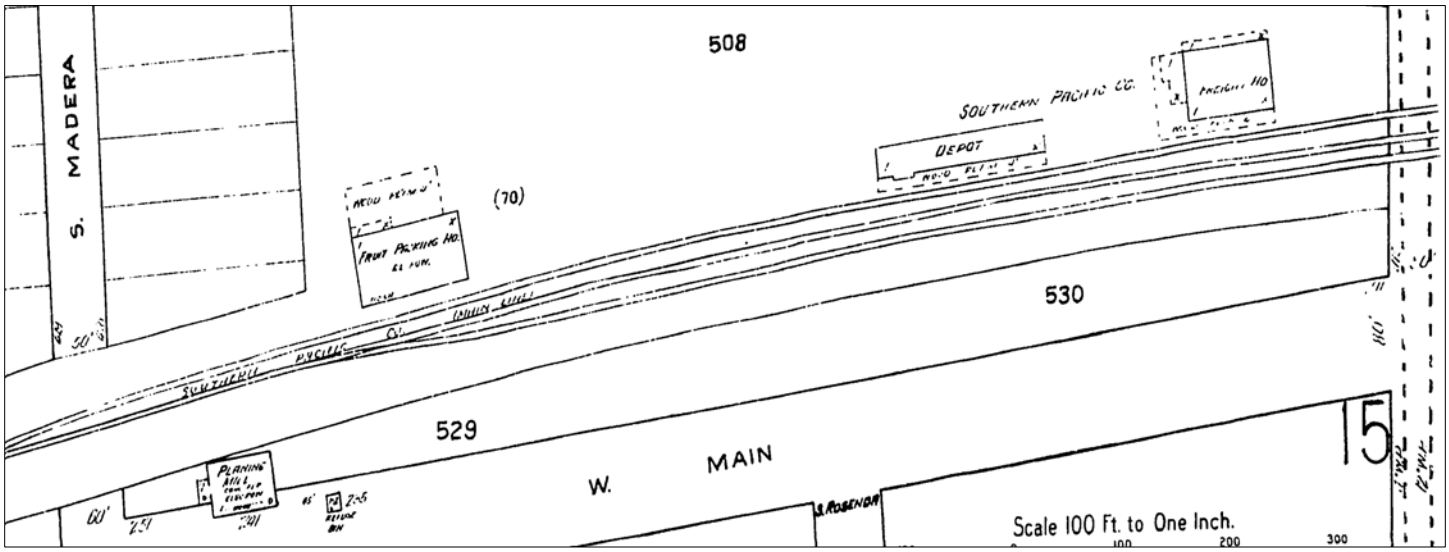


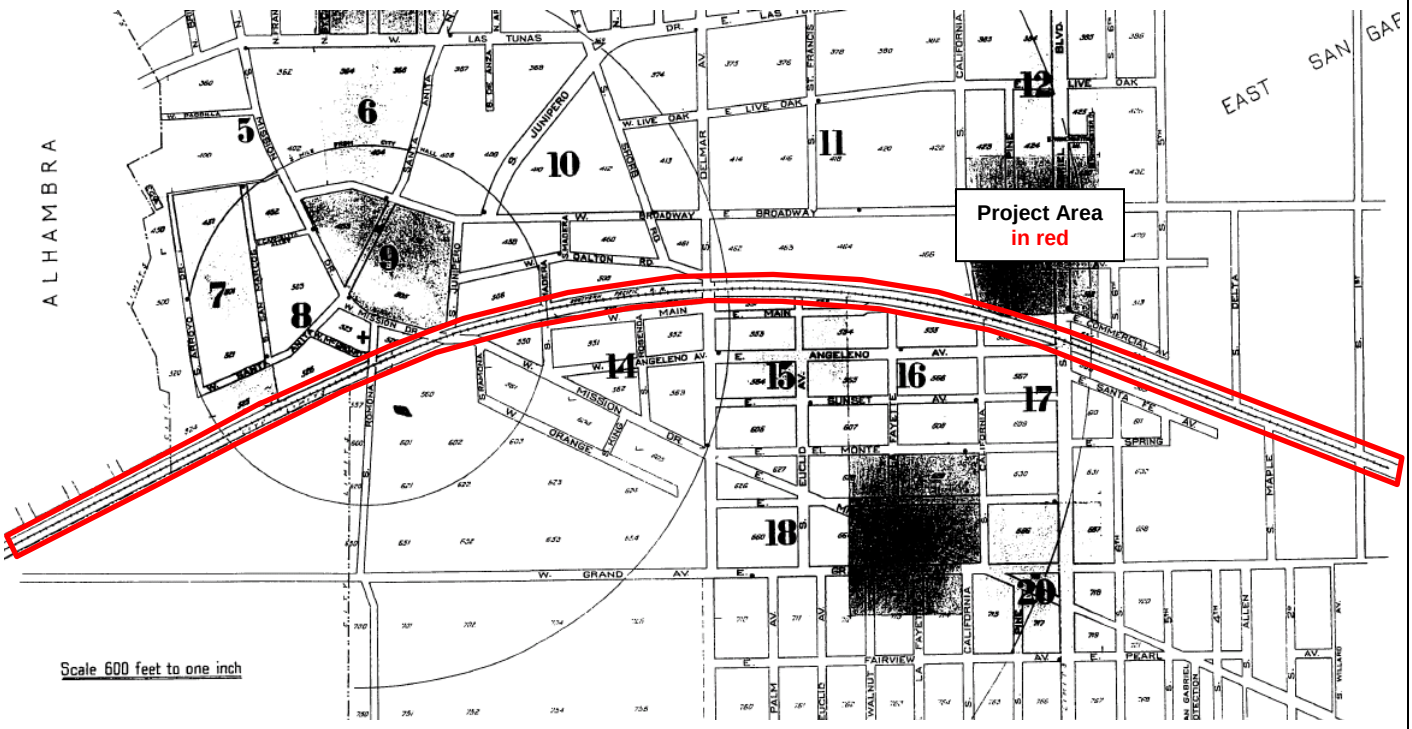
Figure 3: Excerpted Sanborn Fire Insurance Map of San Gabriel, California. Detail of northwest intersection of South Del Mar Avenue and Southern Pacific Railroad, August 1925, sheet 10. Note that depot, railroad-related packing house buildings, and flanking track sidings are no longer extant.

The subject property is part of a standard contemporary freight railroad line and a component of Union Pacific Corporation, currently "the largest railroad in north America" (Union Pacific). However, the subject property railroad line segment is not recommended eligible for listing in the National or California registers under Criteria A/1, despite its obvious connection with events that shaped the development of the community and region through the 1950s, when rail service declined to eliminate direct San Gabriel participation. In the American west, most railroads are directly connected with regional expansion, and to possess historic significance those railroads must retain adequate integrity to be recognizable to their period of significance.

This UPRR mainline segment is not recommended eligible under Criteria B/2, as any connections to persons important in our history were not direct, but part of much larger portfolios of investments held over time by various wealthy investors.

Although the rail mainline has not been relocated horizontally, its grade, rail, track, ballast, landforms, and setting have all been irretrievably altered, diminishing its integrity of design, setting, materials, workmanship, feeling, and association. As a standardized modern railroad track the property does not warrant consideration under Criteria C/3. Because of major alterations to this line segment—including changes in grade elevation, reduction in service tracks to the single mainline, major realignments of street crossings, and sweeping changes in setting from a small town (San Gabriel) and adjacent open agricultural land to a highly urbanized area, this railroad right-of-way does not retain sufficient integrity to impart its historic significance. It is also not eligible under Criteria D/4. As an altered and ubiquitous resource type, the subject property is also not recommended eligible as a contributing resource to any larger California Register-eligible historic district.

P5a. Drawing:



P5b. Description of Drawing:
Figure 4. Annotated excerpt from Sanborn Fire Insurance Company *Maps of San Gabriel, California*, August 1925, sheet 1. Project area is noted in red. Not to scale

***B12. References:**

Ambrose, Stephen E. *Nothing Like It in the World: The Men Who Built the Transcontinental Railroad, 1863-1869.*New York: Simon and Schuster, 2000: various.

Dumke, Glenn S. *The Boom of the 'Eighties*. San Marino: Huntington Library, 1944, various.

Hine, Robert V. and John Mack Faragher. *The American West: A New Interpretive History*. New Haven: Yale University Press, 2000, 291.

JRP. "HASR, Grade Separations Within the Alameda Corridor- East Project." December 1999.

Klein, Maury. *Union Pacific: The Rebirth 1894-1969*. Garden City, NY: Doubleday, 1987, various.

Lewis, Oscar. *The Big Four: The Story of Huntington, Stanford, Hopkins, and Crocker, and of the Building of the Central Pacific*. New York: A.A. Knopf, 1938, various.

Robinson, John W. "The Big Four Move South: The Building of The Southern Pacific Railroad" *California Territorial Quarterly* Fall 2003: 4-29.

Sanborn Fire Insurance Map Company. "San Gabriel, California" 1925: index sheet and sheet 10.

San Pedro, Los Angeles & Salt Lake Railroad. *Corporate History of San Pedro, Los Angeles & Salt Lake Railroad Company.* 1914: various.

Signor, John R. *Southern Pacific Lines, Pacific Lines Stations Volume 1: Coast Division, Los Angeles Division, Portland Division* Pasadena: Southern Pacific Historical and Technical Society, 1997: 31.

Union Pacific. "Corporate Information: Company Overview" 16 February, 2009 <
http://www.uprr.com/aboutup/corporate_info/uprrover.shtml>

Wilson, Neill Compton and Frank J. Taylor. *Southern Pacific: The Roaring Story of a Fighting Railroad.* McGraw-Hill, 1952: various.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # P-19-186112 Update
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #: Southern Pacific Railroad (SPRR)**

P1. Other Identifier: Union Pacific Railroad (UPRR)
***P2. Location:** ■ **Not for Publication** ☐ **Unrestricted** ***a. County:** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** El Monte, California **Date:** 1994 **T1S; R11W; Sec 7,18; T1S; R12W; Sec 10, 11, 12, 15; S.B.B.M.**
c. Address: City: San Gabriel Zip:
d. UTM: Zone: 11 ; 396698 mE/ 3772794 mN (G.P.S.)
400975 mE/ 3772720 mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 370-440 feet

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
Resource P-19-186112 consists of the segment of the Southern Pacific Railroad (SPRR) between Los Angeles and Colton, California, and was originally recorded in 1999 by S. Ashkar. A 26.5-mile segment of the SPRR record was updated in 2002 by R. Herbert, which included segments of the railroad running between Pomona and San Gabriel in Los Angeles County. During the initial recording in 1999, the resource was recommended eligible for the NRHP listing under Criterion A and B. However, the segment updated in 2002 was recommended not eligible due to a lack of integrity. During construction monitoring for the Alameda Corridor—East San Gabriel Trench Grade Separation Project, a number of features and artifacts were identified related to construction, maintenance and operation, and travel along a 2.2-mile (3.5 km) long segment of the former SPRR (now UPRR) right-of-way. These included segments of railroad ties, electric utility poles, wooden floor segments, concrete footings, rock alignments, and refuse pits and concentrations. These features were documented and subsequently removed by construction activities.
***P3b. Resource Attributes:** AH7 (railroad grade); AH2 (foundations/structure pads); AH4 (dumps/trash scatters); AH16 (other)
***P4. Resources Present:** ☐Building ☐Structure ☐Object ■Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #) Overview of rock alignments; view facing north; 12/10/2014

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Union Pacific Railroad
1400 Douglas Street
Omaha, NE 68179

***P8. Recorded by:** (Name, affiliation, and address)
Alyssa Newcomb
SWCA Environmental Consultants
51 West Dayton Street
Pasadena, CA 91105

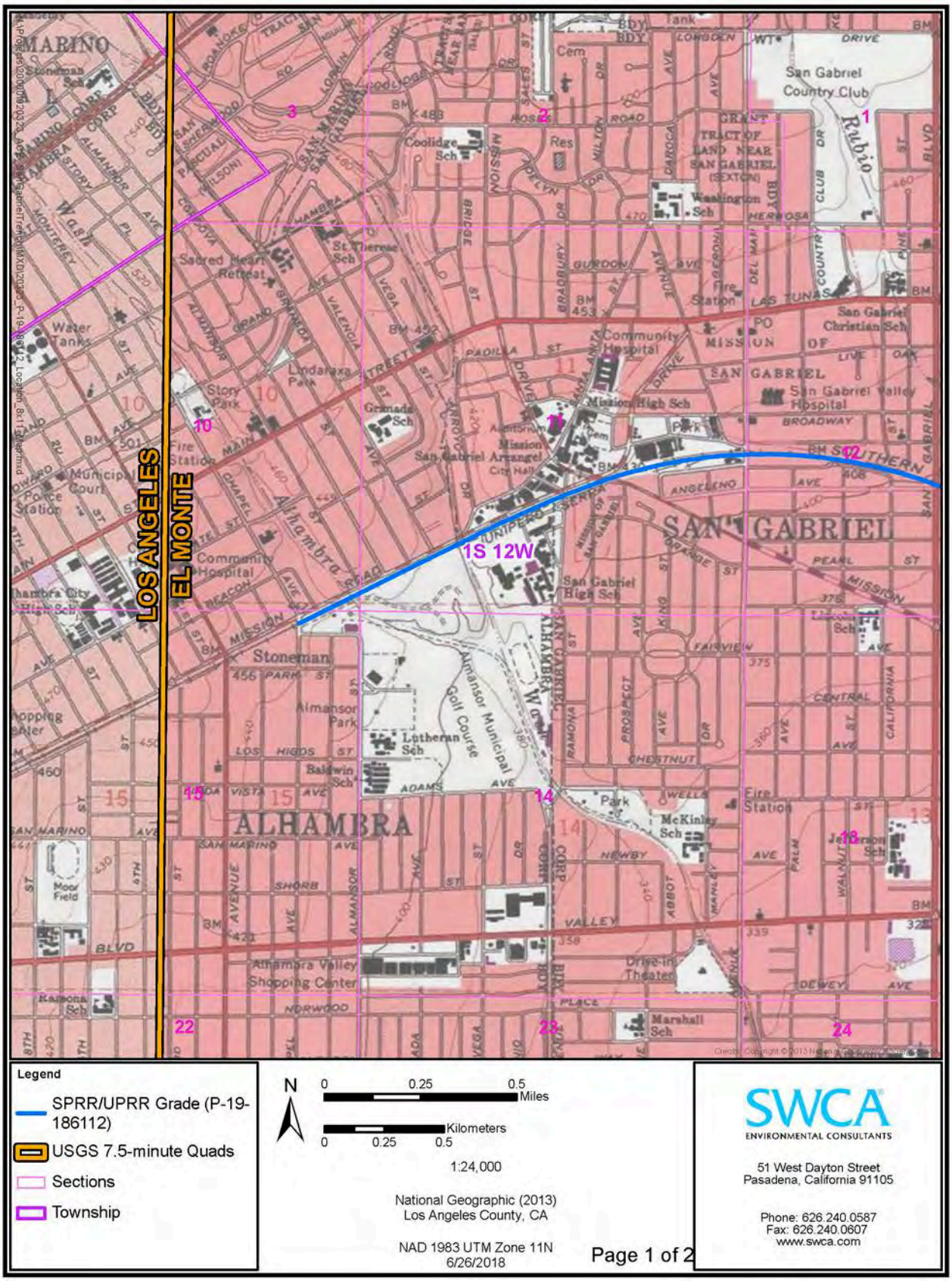
***P9. Date Recorded:**
Between January 2012 and October 2017

***P10. Survey Type:** (Describe)
Construction monitoring

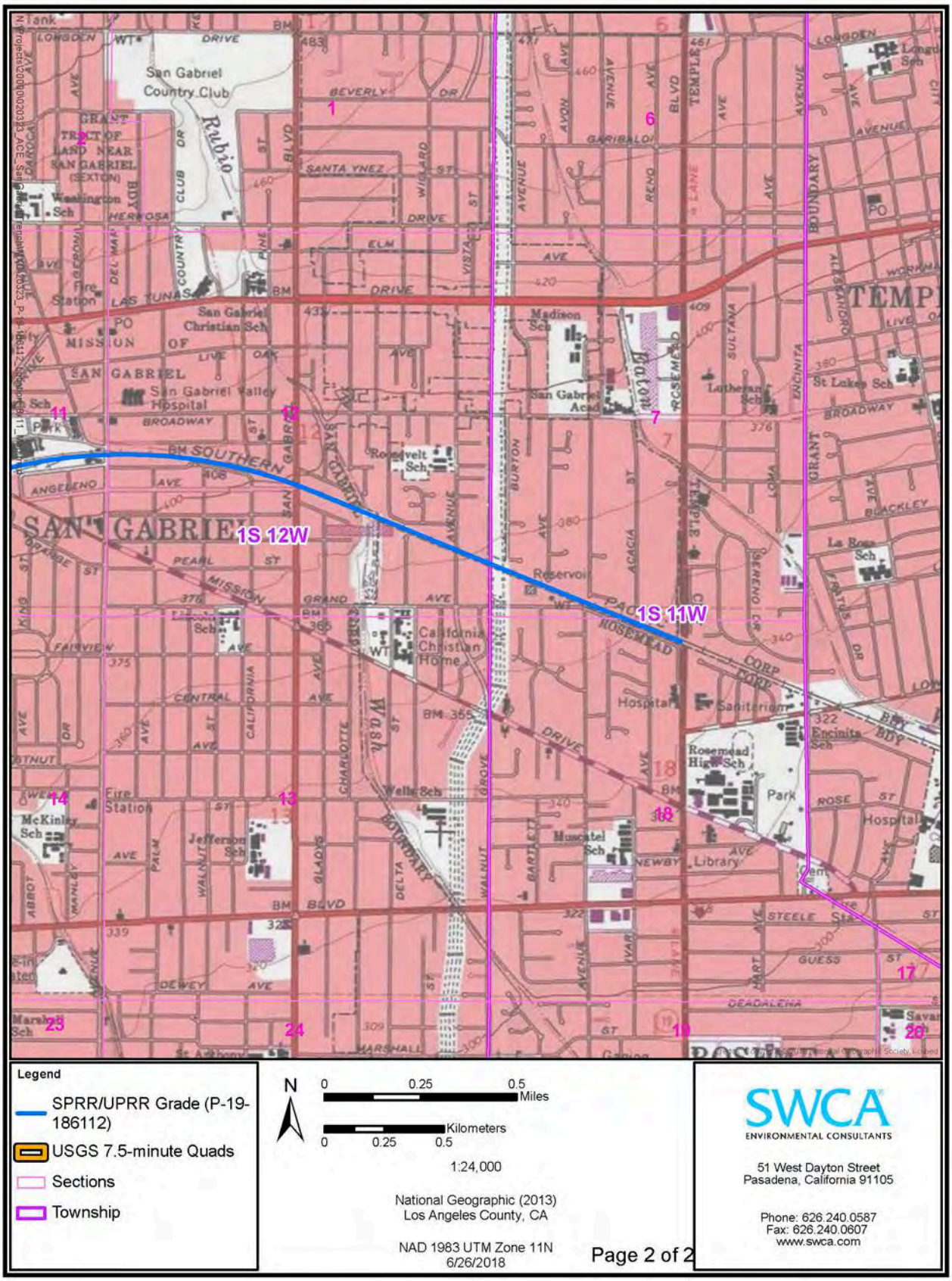
***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Dietler, John, Alyssa Newcomb, Aaron Elzinga, Mandi Martinez, and John Dietler (2018) *More than a Mission: From Toviscanga to San Gabriel, Archaeological Monitoring for the San Gabriel Trench Project.*

***Attachments:** ☐NONE ■Location Map ■Sketch Map ■Continuation Sheet ☐Building, Structure, and Object Record ■Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

***Map Name:** El Monte ***Scale:** 1:24,000 ***Date of Map:** 1980



***Map Name:** El Monte ***Scale:** 1:24,000 ***Date of Map:** 1980



ARCHAEOLOGICAL SITE RECORD

***A1. Dimensions: a. Length:** 4,460 m. **(E/W) × b. Width:** 50 m. **(N/S)**
Method of Measurement: ☐ Paced ☐ Taped ☐ Visual estimate ■ Other: GPS
Method of Determination (Check any that apply.): ■ Artifacts ■ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut bank ☐ Animal burrow ■ Excavation ■ Property boundary ☐ Other (Explain):
Reliability of Determination: ■ High ☐ Medium ☐ Low Explain: All artifacts and features were encountered within the existing UPRR ROW during mechanical and hand subsurface excavations.
Limitations (Check any that apply): ☐ Restricted access ■ Paved/built over ☐ Site limits incompletely defined ■ Disturbances ☐ Vegetation ■ Other (Explain): Only components of the site encountered during construction monitoring within the project area were recorded. The area surrounding the UPRR/SPRR ROW is heavily developed with little to no visible ground surface.

A2. Depth: 0-1 meter ☐ None ☐ Unknown Method of Determination: Artifacts and Features were encountered during ground disturbing construction activities and some controlled subsurface excavations were conducted.

***A3. Human Remains:** ☐ Present ■ Absent ☐ Possible ☐ Unknown (Explain): No human remains associated with this resource were identified during construction monitoring.

***A4. Features** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.):
A large number of features were encountered within the project area, including segments of railroad ties, electric utility poles, wooden floor segments, concrete footings, rock alignments, and refuse pits and concentrations. See continuation sheet below for more information. For additional information concerning these features, please see the accompanying construction monitoring report, Dietler et al. 2018.

***A5. Cultural Constituents (**Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.):
A large number of artifacts not related to features were observed in association with this resource, however due to the overwhelming volume encountered in the entirety of the project area over a number of years, only diagnostic artifacts associated with features were collected and subjected to additional analysis. Artifacts observed during construction monitoring included American period glass and ceramics, cans, railroad spikes, building materials, and other metal artifacts.

***A6. Were Specimens Collected?** ☐ No ■ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.) After analysis, the collected artifacts were not retained for curation.

***A7. Site Condition:** ☐ Good ■ Fair ☐ Poor (Describe disturbances.): Features associated with the site have been impacted by maintenance and operation activities related to the UPRR/SPRR as well as the development of the surrounding areas.

***A8. Nearest Water** (Type, distance, and direction.)**:** Alhambra Wash is located immediately to the west and the San Gabriel Wash is located immediately to the east.

***A9. Elevation:** 400-420 feet

A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.)**:** The documented portion of the site is located in the UPRR right of way in a developed, industrial-urban area of the City of San Gabriel. At the time of recording, the ROW was paved with asphalt or lined with ballast and delineated by a combination of a concrete fence and the back walls of large, commercial structures. Vegetation in the UPRR ROW was limited to a low density of nonnative plants and weeds, such as palms, grass, and shrubs.

A11. Historical Information: The Southern Pacific Railroad completed the Los Angeles Division rail line in this location in 1874.

***A12. Age:** ☐ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ■ 1848-1880 ■ 1880-1914 ■ 1914-1945 ■ Post 1945 ☐ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**
Diagnostic artifacts recovered from associated features date from the late 19th century to ca. 1949.

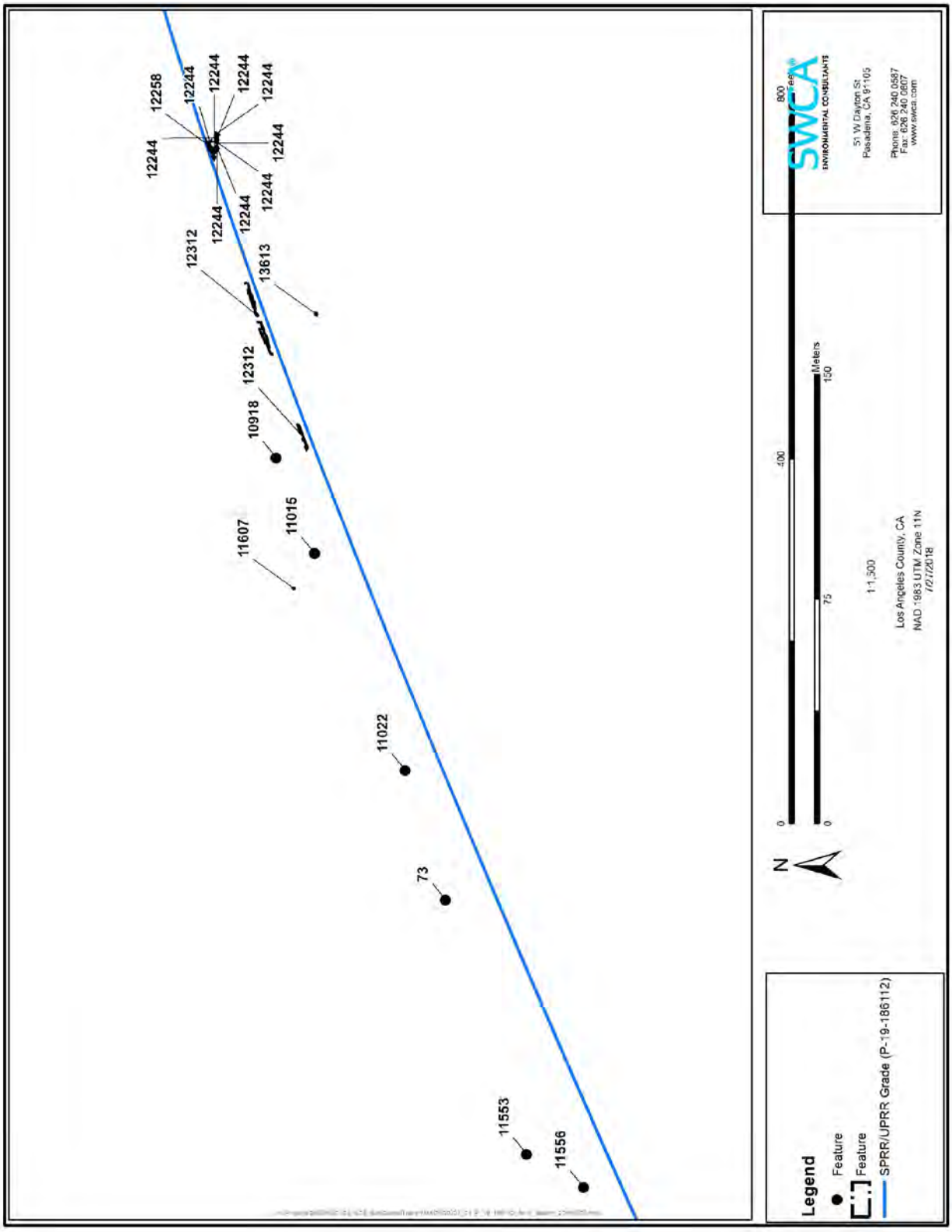
A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations): During the initial recording in 1999, the resource was recommended eligible for the NRHP listing under Criterion A and B. However, the segment updated in 2002 was recommended not eligible. No changes to the resource's eligibility status are recommended here.

A14. Remarks: In addition to the features and artifacts described here, there are a number of sites associated with the SPRR that were encountered during construction monitoring for the current project that were recorded as separate resources. These resources include the first San Gabriel SPRR Depot (CA-LAN-4782H), the second San Gabriel SPRR Depot (CA-LAN-2548H), three culvert features (CA-LAN-4783H, CA-LAN-4784H, P-19-190564), and railroad signal footings (CA-LAN-4785H).

A15. References (Documents, informants, maps, and other references):
Dietler, John, Heather Gibson, and James M. Potter (editors) (2015) *Abundant Harvests: The Archaeology of Industry and Agriculture at San Gabriel Mission*. SWCA Anthropological Research Paper No. 11. SWCA Environmental Consultants, Pasadena.

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record.):
Original Media/Negatives Kept at: SWCA Environmental Consultants, 51 West Dayton Street, Pasadena, CA 91105

***A17. Form Prepared by:** Alyssa Newcomb **Date:** March 13, 2018
Affiliation and Address: SWCA Environmental Consultants, 51 West Dayton Street, Pasadena, CA 91105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Pasadena, CA 91105
Phone: 626 240 0587
Fax: 626 240 0607
www.swca.com
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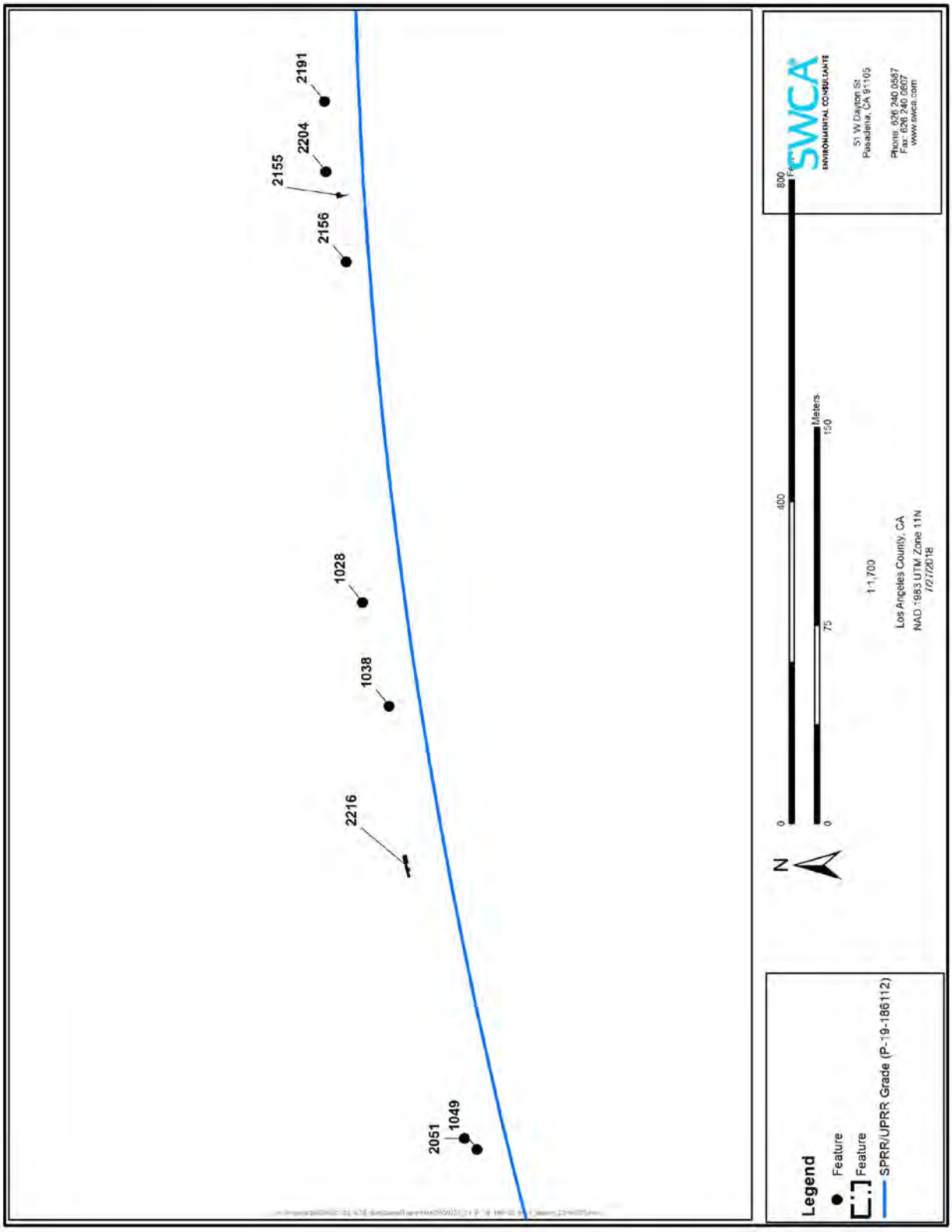
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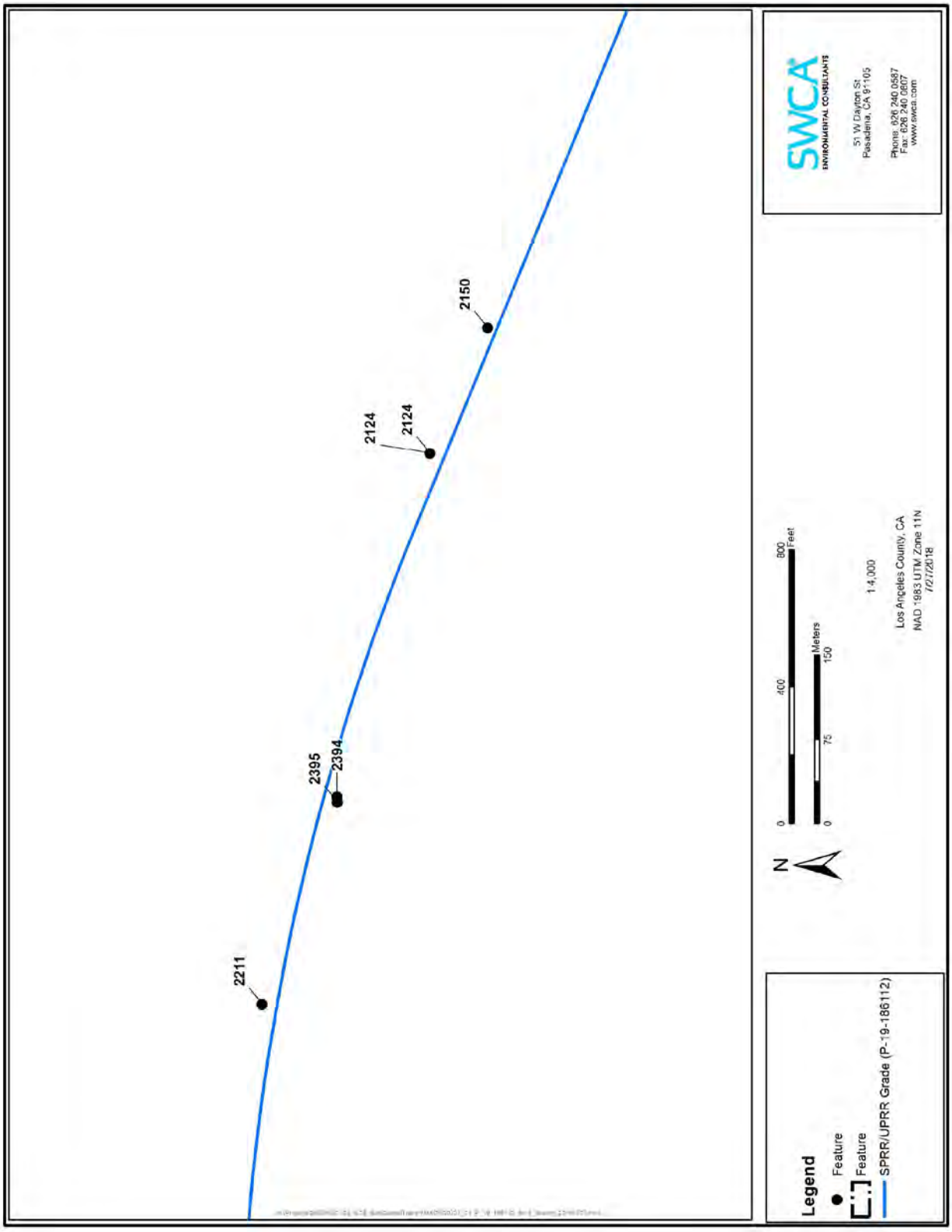
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ENVIRONMENTAL CONSULTANTS
51 W Dayton St
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Fax: 626 240 0607
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SPRR/UPRR Grade (P-19-186112)

***A4. Features (Cont.):**

Railroad ties in primary contexts (designated features) and secondary contexts (designated artifacts) were identified within the project area (Table 1). The railroad ties are similar to one another, measuring 7.9 inches in width and 3.9 inches to 4.3 cm thick, with the lengths being highly variable due to the extent of exposure for each feature as well as the generally poor condition of the wood. Features 13263 and 2156, comprising two and four ties, respectively, were identified in primary contexts, oriented north-south and lying parallel to each other. These in situ features have associated steel railroad spikes, some located in situ, as well as some historic refuse. The historic refuse includes ceramics, colorless glass fragments, faunal bone, and building materials in secondary contexts, and these are most likely not directly associated with the railroad. The railroad tie artifacts (PD 11418 and PD 11540) consist of one and two ties, respectively, identified in secondary contexts and in very poor condition. The ties were oriented vertically along their length within the ground, and were likely discarded and used as fill underneath the existing road surface.

A total of 16 utility pole base remnant features (pole butts) were identified within the project area during construction monitoring. These features consist of 15 cut wooden utility poles (Features 1028, 1038, 1049, 1060, 1066, 2191, 2204, 2211, 10918, 110515, 11022, 11553, 11556, 11607, and 13613) and the remains of one metal down guide/anchor (Feature 11952). The utility poles are in variable condition, with the wood of some poles in very poor condition and heavily degraded, while others are in good condition, maintaining their structural integrity. The diameter of the poles varied in size, ranging from 7.9 to 15.7 inches (20 to 40 cm), and were treated with oil or some similar substance. Two of the 16 utility poles (Features 11607 and 13613) have an associated refuse deposit at the base, and historic artifacts were associated with seven of the utility pole features. The refuse located at the base of the utility poles is most likely contemporaneous with the poles, deposited into the pole holes at the time of their installation. These include two green glass telegraph line insulators associated with Feature 10918 dating to 1910-1921 and 1920-1935, respectively (Table 1). Most of the 16 features located along the SPRR alignment were north of the tracks.

There are two wooden floor features: Features 2155 and 12258. Feature 2155 is a segment of a wooden walkway segment measuring 35 × 24 × 3 inches, with the planks oriented north-south. The feature is made up of four wooden planks that are smaller in size than a standard railroad tie, are spaced much closer together, and appear to have been treated with an oil-like substance. The smallest plank measures 23 × 6 × 3 inches, and the largest plank measures 24 × 5 × 3 inches. The feature was in primary context and retained moderate integrity, with some mechanical disturbance from current construction activities. Feature 2155 was not associated with any other features, and artifacts observed in the vicinity were likely post-depositional refuse and not directly associated. The observed artifacts include one glass fragment, faunal bone fragments, and one wire nail. The wooden walkway was located on the northern side of the SPRR alignment within the footprint of the T. J. Wilson Warehouse according to the 1938 Sanborn map. The T. J. Wilson Warehouse was located to the east of the circa 1888 SPRR depot, and likely had a means for loading and unloading products and materials onto trains. This wooden feature may have been a portion of this system.

Feature 12258 consisted of a wooden floor segment feature measuring 5.2 × 9.8 feet × 2.4 inches, oriented roughly north-south within the SPRR Mission Road crossing. The wooden floor segment consisted of six flat wooden boards, with four planks running parallel oriented east-west and two planks oriented north-south. This floor segment was likely associated with the construction or operation of the SPRR. The floor may have been part of a root cellar or basement. The feature was identified in primary context with moderate integrity, displaying some disturbance from previous mechanical excavation and the natural deterioration of the wood. Artifacts observed in the surrounding matrix include one faunal bone fragment, non-diagnostic metal nails, adobe melt, and a single piece of brownware. The artifacts appear not to be directly related to the feature but were likely deposited afterwards or were secondary deposits from another location.

Feature 12244 was a historic concrete footing feature measuring 35 inches (90 cm) in length, 24 inches (60 cm) in width, and 31 inches (78 cm) in height, and oriented north-south. The concrete footing has an additional curved piece of concrete approximately 10 inches (25.4 cm) in length and 6 inches (15.2 cm) in width attached to the west side. The concrete was of poor quality with many inclusions. The feature appears to be in primary context, with moderate integrity and some disturbance from previous construction activities. No artifacts were observed in association. The footing is most likely the remains of a structure related to the SPRR and is associated with a wooden floor feature (Feature 12258).

Feature 12312 consists of two linear, parallel rock alignments, oriented east-west. These alignments paralleled the SPRR (and UPRR) tracks to the north and south, and likely represent the formal edges of the original railroad trackway. The southern rock alignment measures 19.0 feet (5.8 m) in length and the northern rock alignment measures 86.3 feet (26.3 m) in length (east-west), with each measuring approximately 1.8 feet (0.5 m) in width. The rock alignments are spaced 13.8 feet (4.2 m) apart and are located on either side of the original SPRR alignment. Each rock alignment is constructed from two courses of medium to large cobbles of siltstone and other stone materials. Each cobble displays a flat or nearly flat surface and is positioned with the flat surface facing

up, creating a continuously flat series of stones. The alignments also have relatively straight outer edges. The stones sit directly upon a very thin layer of a black oil-like substance—likely represent an oiled road surface. These black layers are fairly hard and compact and positioned on top of a natural sandy layer. The rock alignment feature is in good condition, generally exhibiting little disturbance, with minor disturbance evident in the southern alignment. No artifacts were observed in association with this feature. These rock alignments appear to define the original SPRR railroad trackway. An 1884 photograph of the tracks (see Dietler et al. 2015:Figure 2.9) shows the SPRR tracks in this location just ten years after they were installed, and they appear to sit directly upon the ground, without ballast. The fact that the rock alignments are present here, and not to the east or west, may be explained by the fact that this was the high point on the landscape, and the only area where a ditch was cut into the topography to maintain the appropriate grade. The rocks may have been placed at the base of the small road cut, then, to prevent soils from the slope from washing onto the tracks.

A total of 7 refuse pits and artifact concentrations identified within the project area were likely associated with the SPRR. Refuse pits were differentiated from concentrations based on their relative shape (i.e., basin-shaped pits, versus flat concentrations) and their depositional environment (i.e., intrusive to natural strata or between natural strata, where observable). A total of three features (Features 73, 2124, and 2216) were determined to be refuse pits, and a total of four features (Features 2051, 2150, 2394, and 2395) were determined to be refuse concentrations. Most of the refuse pit features are irregular in shape, and were in moderate to poor condition due to extensive disturbance from previous construction activities. The historic refuse recovered from these pits and concentrations was relatively consistent across features, primarily consisting of household refuse and building materials. These features are likely related to construction and maintenance of, and travel along, the SPRR in addition to the installation and maintenance of various utilities, commercial/industrial activities in the area, and later residential activities. A sample of diagnostic artifacts recovered from these features is presented below in Table 2.

Table 1. Diagnostic Artifacts Associated with Utility Pole Features

Catalog Number	Feature Number	Artifact Type	Material	Manufacturer	Date Range	Description
CALAN00184H-39578.01	Feature 10918	Insulator	Green glass	Hemingray	1910-1921	Hemingray No 40 (CD 152)
CALAN00184H-39578.01	Feature 10918	Insulator	Green glass	McLaughlin	1920-1935	McLaughlin No 42 (CD 154)

Table 2. Diagnostic Artifacts Collected from SPRR Refuse Deposits

Catalog Number	Feature Number	Artifact Type	Material	Manufacturer	Date Range	Description
CALAN0N184H-00004	Feature 2124	Bottle	Amber glass	Unknown	1935-1946	Embossed design of ships and figures in battle; Embossed: "FEDERAL LAW FORBIDS SALE OR RE USE OF THIS BOTTLE" "D11 56 6" "ONE PINT", "DES.PAT.73096" (side); Owens Illinois mark (base); Parison mold
CALAN0N184H-00010	Feature 2216	Bottle	Colorless glass	Owens-Illinois Glass Company	1949	Embossed: "SPARKLETTS SPARKEETA" (neck); "SPARKLETTS /23 [Owens-Illinois mark]9 / REGISTERED /6 /L.A. CAL." (base); ACL label: "SPARTEETA LITHIATED ROOT BEER SPARKLETTS DRINKING WATER CORP. LOS ANGELES - CALIFORNIA."

Table 2. Diagnostic Artifacts Collected from SPRR Refuse Deposits

Catalog Number	Feature Number	Artifact Type	Material	Manufacturer	Date Range	Description
CALAN0N184H-00011	Feature 2216	Bottle	Colorless glass	Anchor Hocking	Post-1938	Colorless glass bottle with Anchor Hocking maker's mark
CALAN0N184H-00105	Feature 2395	Bottle base	Aqua glass	Unknown	Late 19th-early 20th	Aqua glass post bottom mold bottle base embossed with "3 C" (base).; Parison mold
CALAN0N184H-00106	Feature 2395	Bottle base	Aqua glass	Unknown	1900-1940	Aqua glass bottle base embossed with "2" (base).; valve or ejection mark date between 1900 and 1940
CALAN0N184H-00113	Feature 2395	Rice bowl	Porcelain	Unknown	Post-1921	Porcelain rice bowl fragments with a blue floral motif. Maker's mark base with Japanese characters and "Japan" in blue lettering; The word JAPAN and "Made in Japan" began being marked on Japanese vessels after "Nippon" became unacceptable in the U.S. in 1921 (Stitt 1974; Andracht et al. 1981:152; Costello And Maniery 1987)
CALAN00184H-00088..01	Feature 2394	Bottle	Colorless glass	United Drug Co.	1910-1930	Colorless glass medicine bottle embossed "W.T/U.D.CO./3" (base)

19-186564

NAME TEMPORARY DETENTION CAMPS FOR JAPANESE AMERICANS

COUNTY FRESNO, INYO, LOS ANGELES, MERCED, MONTEREY, SACRAMENTO, SAN JOAQUIN, SAN MATEO, STANISLAUS, TULARE, AND YUBA COUNTIES

APPROVAL COMMITTEE:

MRS. NADINE I. HATA, CHAIRPERSON

MR. ROBERT D. FERRIS, VICE CHAIRMAN

MS. JULIA G. COSTELLO

DR. ERNESTINE S. ELSTER

DR. AMANDA CLARK FROST

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STATE PARK COMMISSION

Russell W Cahill

DIRECTOR, DEPARTMENT OF NATURAL RESOURCES

REGISTERED LANDMARK NUMBER 934

DATE May 13, 1980

APPLICATION FOR REGISTRATION OF HISTORICAL LANDMARK 19-186564

Name of Proposed Landmark Temporary Detention Camps for Japanese Americans

Location See Appendix A, page 14

RECEIVED
MAR 2 0 1980
OHP

County See Appendix A, page 14

Name and Address of Landowner upon Whose Property Landmark is Proposed

Not applicable for this application

Name and Address of Applicant Ethnic Minority Cultural Resources Survey--Japanese Americans, Box 799, El Cerrito, Calif. 94530 Phone No. (415) 527-4629 Bus. Phone No. --

Is this landmark of statewide significance as described in the State of Policy? Yes

Explain (use extra sheet if necessary):

The Temporary Detention Camps (a.k.a. "Assembly Centers")[1] represent the first phase of the mass incarceration of 92,785 Californians[2] of Japanese ancestry during World War II.

Pursuant to Executive Order 9066 signed by President Franklin D. Roosevelt on February 19, 1942, twelve makeshift detention facilities were constructed at various horse racetracks, fairgrounds, and labor camps in California.[3] Three additional temporary camps were established in Arizona, Oregon, and Washington. These facilities were for the purpose of temporarily confining Japanese Americans until the more

Is bibliography complete? (To enable verification of statements and claims made herein.) Yes

Is permission of property owner for registration attached? Not applicable

Is approval of property owner to place a plaque attached? Not applicable

Is proof of reasonable protection for requested landmark attached? Not applicable

Are photographs, prints, or drawings (two views) attached? Yes

permanent concentration camps--such as Manzanar and Tule Lake in California--could be built in isolated areas of the United States.

Beginning on March 30, 1942,[4] all native-born Americans and long-time legal residents of Japanese ancestry[5] living in California were ordered to surrender themselves for detention. Individuals were imprisoned solely due to his or her ancestry. Citizenship, age, constitutional guarantees, or innocence of wrongdoing did not matter.

Japanese Americans were held behind barbed wire fences and guard towers at these Temporary Detention Camps for two to seven months until they were transferred to one of the permanent concentration camps. An entire population of loyal and productive Californians was eliminated from the public scene.

The incarceration of Japanese Americans had a profound effect on the military, political, and economic affairs of the state at the time; and the episode remains as a major blot in the history of American law.[6] United States citizens and lawful permanent residents were imprisoned without charges, without evidence, without trial, and in violation of every basic constitutional right.[7]

The Temporary Detention Camps are a sobering reminder to all Americans of what can happen if constitutional principles are not vigorously defended against racism, political expediency, and economic opportunism.

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BRIEF HISTORY AND DESCRIPTION (Corresponding to one or more items under I, II, or III of the Statement of Policy.)

HISTORY

Superficially, World War II might be seen as the impetus for the mass incarceration of Japanese Americans. The causes, however, were much more complex and deeply rooted in California history. Racial hate against Asian Americans emerged during the highly competitive and lawless Gold Rush days, inexorably grew in intensity during the next century, and finally reached its culmination in 1942. In the long historical context, the elimination of Japanese Americans from California was a logical extension of all that had transpired before; and the war itself was only a pretext to accomplish a "final solution" of sorts.[8]

During the peak gold mining years in California, there were over 9,000 Chinese miners, comprising 25% of the total number of miners. Viewed as unwanted competitors for the riches of California, the Chinese were driven from the mines through acts of violence and terrorism. By the early 1850's, racism against the Chinese became institutionalized in the law. Among other restrictions, Chinese Californians were denied the right to vote, to become naturalized citizens, to testify in court against a white person, or to engage in occupations of their choice. The California State Constitution had an entire article devoted to requiring discrimination against the Chinese and any "Mongolian."[9] A series of Chinese Exclusion Acts between 1882 and 1904 effectively reduced economic competition by controlling and eventually barring Chinese immigration to the United States.[10]

By the time the first sizable number of Japanese immigrants arrived in California during the late 1890's and early 1900's, governmental discrimination against Asian minorities was firmly established. Japanese immigrants were initially recruited by the California agricultural industry to fill an acute need for laborers. But like all other immigrant groups, the Japanese Californians did not remain docile, underpaid

workers for long, and they soon set out to earn their share of the American dream.[11] Perceived as a new "yellow peril" threat, the white establishment applied much of the existing anti-Chinese laws to the Japanese as well, including denial of the right to naturalized citizenship.[12] Also, the California "Alien Land Laws" of 1913 and 1920 were specifically directed against the Japanese denying them the right to own or lease land--a right possessed by white aliens.[13] Like the earlier Chinese exclusion movement, anti-Asian organizations in California lobbied the federal government to stop all immigration from Japan. In response to the pressures from California, Congress terminated Japanese immigration in 1924.[14]

In the years preceding World War II, racism against Asian Americans was a fact of life on the West Coast. Discrimination in housing, employment, education, public accommodations, and social relations was pervasive. Moreover, the media constantly reinforced negative stereotypes: newspapers, radio, movies, comic strips, and pulp novels inundated the public with lurid tales of Japanese spies and saboteurs.[15] This historical background is indispensable for an understanding of what happened to Japanese Americans during the war years.

Japan had been waging a war in Asia since 1937, and United States-Japan relations had steadily worsened. A breaking point came in July 1941 when the United States imposed a total trade embargo and effectively cut off Japan's oil supply. With no domestic source of oil and only a few months of reserves, Japan faced military and economic collapse. The United States had broken Japan's top secret code and was aware of the crisis in Japan and the probability for armed conflict.[16]

With the expectation of war, the U. S. government undertook precautionary measures. In October 1941, the State Department ordered a covert investigation of the Japanese American communities on the West Coast and Hawaii; the Federal Bureau of Investigation (FBI) and the military intelligence services intensified secret surveillance programs which had been in existence for several years. All of these

intelligence reports certified that the Japanese American population as a whole posed no threat to national security.[17] Curiously, on December 5, 1941--just two days before the outbreak of war--FBI Director J. Edgar Hoover instructed his agents to be ready for the "immediate apprehension" of Japanese nationals who had been targeted for "custodial detention."[18]

When the global war finally came to the United States on December 7, the government was well prepared to handle domestic security. Using previously prepared lists, the FBI summarily arrested over 2,000 Japanese nationals during the first few days of the war. No criminal charges were ever filed against these individuals; apparently, they were considered suspicious due to their leadership positions in the Japanese American community.[19] Organization officers, Buddhist and Shinto priests, newspaper editors, language and martial arts instructors were all imprisoned at one of 26 Internment Camps operated by the Justice Department.[20] Dependents were left without a source of livelihood, and the Japanese American community was stripped of its established leadership.

Despite the shock of Pearl Harbor, there was very little public hysteria or panic. With the home front completely secure, public opinion was generally favorable toward Japanese Americans during the first month of the war. Newspapers published editorials and letters sympathetic to Japanese Americans; and even the California State Legislature passed a resolution urging federal officials "to prevent any and all racial discrimination in the national defense program."[21]

It took a little time before the long-standing anti-Japanese groups in California realized what a potent weapon they had in their hands, but when they did, they seized the opportunity to attain a goal they had been seeking for over 40 years, i.e. to get rid of the Japanese Americans once and for all. An organized hate campaign centered in California ensued; and as a result, public opinion started to turn against Japanese Americans in late-January 1942. Latent prejudices were aroused, but the

average citizen remained law-abiding and acts of violence or vandalism against Japanese Americans were rare.[22]

Newspapers published unsubstantiated rumors about spies and saboteurs among the Japanese Americans. Because of the long history of prejudice and stereotypes, many white Americans believed the false stories. The truth was that there were absolutely no proven cases of espionage or sabotage committed by any person of Japanese ancestry living in the United States.[23] On the other hand, at least ten white persons were charged and convicted in courts of law as spies for Japan.[24]

Like the previous immigration exclusion campaigns, California politicians and pressure groups lobbied the federal government to remove and/or lock up all Japanese Americans.[25] Even though Attorney General Francis Biddle and FBI Director Hoover advised against it, President Franklin D. Roosevelt authorized the mass expulsion and incarceration of Japanese Americans by signing Executive Order 9066 on February 19, 1942.[26] The order itself was carefully worded to avoid constitutional challenges: it did not single out a specific group, nor did it say people were to be locked up. But there was a common understanding that Executive Order 9066 was designed primarily for the purpose of removing and/or imprisoning the Japanese Americans. With no public demands for locking up German Americans and Italian Americans, the government chose to forgo the theoretical option of incarcerating descendants of the European enemy nations as well.

On February 20, Secretary of War Henry L. Stimson designated Lt. General John L. DeWitt, head of the Western Defense Command, to carry out the intent of Executive Order 9066. Just to make sure DeWitt correctly understood his assignment, both Stimson and Assistant Secretary of War John J. McCloy directed him to include all persons of Japanese ancestry--irrespective of citizenship--in his plans, but that persons of German or Italian ancestry were to be left alone unless there was hard evidence to prove an individual was dangerous.[27]

The first action under authority of Executive Order 9066 was the expulsion of

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the entire Japanese American community from Terminal Island (San Pedro Bay, Los Angeles County) on February 25-27. Armed soldiers marched into the old fishing village and ordered every person of Japanese ancestry, including native-born Americans, to leave their homes within 48 hours. The majority of Terminal Island residents were United States citizens, but they were evicted without a hearing. The eviction was especially harsh because most of the men had been arrested earlier by the FBI and the move had to be made almost entirely by women and children. The government made no provisions for alternative housing, and some 2,000 Japanese Americans became displaced persons.[28]

On March 2, DeWitt declared the Western halves of California, Oregon, and Washington, plus the Southern half of Arizona as "Military Area #1," and announced his intention to remove every person of Japanese ancestry therefrom. Japanese Americans were urged to "voluntarily" give up their homes and jobs before they were forcibly expelled by the army. A total of 10,312 Japanese Americans hurriedly left the proscribed areas, with 4,310 moving to the Eastern side of California, which was then a "free zone."[29]

On March 11, DeWitt created the Wartime Civil Control Administration (WCCA) as a sub-unit of the Western Defense Command and appointed Colonel Karl R. Bendetsen as the military director responsible for implementation of the expulsion/detention program.[30] In the meantime, Congress passed Public Law 77-503 on March 21 which made it a federal offense for a civilian to disobey a military order issued under authority of Executive Order 9066.[31]

On March 24, all Japanese Americans on Bainbridge Island, Washington were ordered to report for imprisonment under "Civilian Exclusion Order #1."[32] Subsequently, "Civilian Exclusion Order #2" issued on March 30 applied to the Long Beach-San Pedro area in California. Eventually, 108 separate "Civilian Exclusion Orders" were issued, each applying to a different locale in Arizona, California,

Oregon, and Washington. Japanese Americans were directed to bring only what they could carry in their hands and turn themselves in at a "Civil Control Station" near their homes. Upon reporting, they were registered, numbered, tagged with shipping labels, and placed aboard buses, trains, and trucks under armed guard for transportation to one of the 15 Temporary Detention Camps. From that point on, Japanese Americans became prisoners of their own country. On arrival at the camps, they were forced to submit to body and baggage searches, fingerprinting, and long interrogations about their background.[33]

Japanese Americans were imprisoned on the basis of ancestry and ancestry alone. There was no evidence they had done anything illegal, or were dangerous in any way. Native-born Americans were locked up without charges or trial, and in complete disregard for their constitutional rights.

DeWitt gave the rationale of "military necessity" to protect the West Coast against sabotage in case of invasion, but such a claim was contrary to the actual U. S. Army "estimate of the situation" which correctly concluded that an invasion of the West Coast was extremely unlikely.[34] The claim was also inconsistent with the fact that Japanese Americans in Hawaii were not similarly incarcerated en masse. Hawaii was the site of the Pearl Harbor attack, was some 3,000 miles closer to the enemy, and was in far greater danger of any invasion. There were 159,534 Japanese Americans in Hawaii, comprising 34.2% of the population, but Lt. General Delos Emmons, the military commander in Hawaii, decided that "military necessity" there required the Japanese Americans to remain free and help in the war effort.[35]

The "military necessity" excuse was further contradicted by the fact babies, children, blind or paralyzed persons, infirm or bedridden old people--those who could not possibly commit acts of sabotage or espionage--were also incarcerated. Even orphans in institutions and children adopted by white families were ordered imprisoned if they had any Japanese ancestry at all.[36]

By March 24, all Japanese Americans were placed on a dusk to dawn curfew.

They were further required to have travel permits and were prohibited from possessing any camera, radio, or weapon. Although these regulations applied to all enemy nationals, Japanese Americans were the only United States citizens to be included in the restrictions.[37]

On March 27, DeWitt abruptly prohibited any further "voluntary" movement of Japanese Americans away from "Military Area #1." Japanese Americans were "frozen" in their homes until arrangements could be made for their incarceration: they were trapped with no option aside from imprisonment.[38] DeWitt methodically issued detention orders almost daily, and an average of 3,750 persons a day were forced out of their homes and locked up in the Temporary Detention Camps.[39]

In a corollary act, the California State Personnel Board summarily fired all state employees of Japanese ancestry on April 2. Blanket dismissal charges were filed against anyone with a Japanese surname. Those who had taken leaves to enter the Temporary Detention Camps were dismissed in absentia, while those who were still free were ordered to promptly vacate their jobs.[40]

On June 2, DeWitt proclaimed the Eastern half of California as "Military Area #2" and prohibited Japanese Americans from leaving that area as well until they, too, could be ordered to report for detention.[41] By this action, DeWitt betrayed an earlier promise to spare those who moved to the Eastern half of California during the "voluntary" period. Significantly, only the Eastern half of California was proscribed: the Eastern halves of Oregon and Washington were left alone. This discrepancy was due to the continued political pressures from California to eliminate Japanese Americans from the entire state.[42]

About this time, an important turning point in the Pacific War occurred. The U. S. Navy annihilated the core of the Japanese Navy at the Battle of Midway on June 3-6; from that point on, Japan totally lacked the capability to attack the West Coast. The U. S. government and military knew that any danger of invasion had vanished. However, instead of canceling the detention program and saving millions

in funds, war materiel, and personnel, the government relentlessly continued to build new concentration camps and locked up more Japanese Americans.[43] Detention orders for the Eastern half of California started to appear on June 27.[44]

The detention process progressed from district to district, county to county, over a five month period. By June 6, all Japanese Americans on the Western half of the West Coast states had been locked up; and by August 7, 1942, the entire process was completed. A total of 92,785 Californians, and an overall total of 120,313 Japanese Americans ended up in government custody.[45]

While the Japanese Americans were confined in the Temporary Detention Camps, the War Department built ten large concentration camps--each designed to hold an average of 12,000 prisoners--in the interior desert and swamp regions of the United States. Two of these concentration camps were located in California (Manzanar and Tule Lake), while the other eight were in the states of Arizona (2), Arkansas (2), Colorado, Idaho, Utah, and Wyoming.[46]

Beginning on May 26, and continuing through October 30, approximately 500 detainees per day were taken from the Temporary Detention Camps and placed aboard trains under armed guard for transfer to the permanent concentration camps. The movement required the use of 171 special trains--at a time when railroads were critically needed to transport military supplies. Each detainee had spent an average of 102.3 days in a Temporary Detention Camp before he or she was transferred; and a total of 9,485,202 detainee-days had been spent under the guns of the WCCA/ Western Defense Command.[47]

DESCRIPTION

Horse racetracks, fairgrounds, rodeo grounds, and labor camps were used as sites for the Temporary Detention Camps. The WCCA/Western Defense Command expropriated twelve such locations in California and hurriedly converted them into

transient detention facilities.[48] Existing horsestalls and grandstands were used for living quarters, and flimsy tarpaper barracks were hastily built for additional housing. The entire compound was surrounded by a high barbed wire fence and guard towers; sentries in the towers were armed with machine guns; soldiers with bayonet-tipped rifles patrolled the camp perimeter; and searchlights crisscrossed the camp interior at night.[49]

Detainees made the following observations:

Estelle Ishigo (Pomona):[50]

> The first sight of the barbed wire enclosure with armed soldiers standing guard as our bus slowly turned in through the gate stunned us.... Here was a camp of sheds, enclosed within a high barbed wire fence, with guard towers and soldiers with machine guns.

Charles Kikuchi (Tanforan):[51]

> I saw a soldier in a tall guardhouse near the barbed wire fence and did not like it because it reminds me of a concentration camp.

Mine Okubo (Tanforan):[52]

> We were close to freedom and yet far from it. The San Bruno streetcar line bordered the camp on the east and the main state highway on the south. Streams of cars passed by all day. Guard towers and barbed wire surrounded the entire center. Guards were on duty night and day.

The fence and guards were not there to "protect" the Japanese Americans: the barbed wire tops were turned inward, and the guards had their weapons trained into the camp. DeWitt, himself, explained the purpose of the security measures:[53]

> The Assembly Centers in the combat area are generally located in grounds surrounded by fences clearly defining the limits for the evacuees. In such places the perimeter of the camp will be guarded to prevent unauthorized departure of evacuees.... Should an evacuee attempt to leave camp without permission he will be halted, arrested, and delivered to camp police.

In order to make it absolutely clear to the Japanese Americans that they were prisoners, DeWitt issued "Civilian Restrictive Order #1" on May 19 ordering the inmates to remain within the boundaries of the Temporary Detention Camps at all times. Anyone who attempted to leave without written authorization was

threatened with ominous, unspecified "penalties and liabilities."[54]

The camp interiors were arranged like prisoner of war camps or overseas military camps, and were completely unsuited for family living. Barracks and horsestalls were divided into blocks and each block had a central mess hall, latrine, showers, wash basins, and laundry tubs. Toilets, showers, and bedrooms were unpartitioned; there was no water or plumbing in the living quarters; and anyone going to the lavatory at night was followed by a searchlight. Eight person families were placed in 20 x 20 ft. rooms, six person families in 12 x 20 ft. rooms, and four person families in 8 x 20 ft. rooms. Smaller families and single persons had to share unpartitioned units with strangers. Each detainee received a straw mattress, an army blanket, and not much else. Privacy was non-existent; everything had to be done communally; and endless queues formed for eating, washing, and personal needs. Sanitation and food quality were poor; outbreaks of diarrhea and communicable diseases were common; and the stench in the horsestall areas was overwhelming.[55]

In spite of the stark reality of the prison facilities, the WCCA/Western Defense Command called these places "Assembly Centers." Army officials (particularly WCCA Director Bendetsen, who was a lawyer) were aware of the serious constitutional issues which could be raised if they admitted that Americans were being confined against their will without due process of law. In order to circumvent any legal difficulties, the army coined numerous euphemisms to camouflage the truth. One indication of the tortured lengths to which army thinkers went to cover-up what was actually happening was their use of the phrase "non-alien" to refer to native-born citizens of the United States of America.[56]

The United States was not alone in the use of deceptive terminology during World War II. Canada expelled all Japanese Canadians from their homes in British Columbia and confined them in inland prison camps which were variously named "Clearing Stations," "Assembly Centres," "Interior Housing Centres," "Interior

Settlements," "Housing Projects," and Relocation Centres."[57] Interestingly, Japan also used the name "Assembly Centers" (Shukaisho) to refer to their internment camps in occupied China.[58]

Germany's nomenclature for their concentration and extermination camps best illustrate the thesis that official government names are not necessarily accurate, nor desirable for continued use today. The Nazi operated camps were known at the time as "Work-study Camps" (Arbeitserziehungslager), "Protective Custody Camps" (Schutzhaftlager), "State Retirement Homes" (Reichsaltersheim), "Health Resorts" (Heilbad), "Jewish Self-administration Centers" (Judische Selbtsverwaltung), and "Paradise Quarters" (Paradeisghetto).[59]

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APPENDIX A -- TEMPORARY DETENTION CAMPS IN CALIFORNIA, 1942

	Name	Location[60]	County[61]	Previous use[62]
1.	Fresno	Fresno	Fresno	Fairgrounds
2.	Marysville	Arboga	Yuba	Labor camp
3.	Merced	Merced	Merced	Fairgrounds
4.	Pinedale	Pinedale	Fresno	Labor camp
5.	Pomona	Pomona	Los Angeles	Fairgrounds
6.	Sacramento	Walerga	Sacramento	Labor camp
7.	Salinas	Salinas	Monterey	Rodeo grounds
8.	Santa Anita	Arcadia	Los Angeles	Horse racetrack
9.	Stockton	Stockton	San Joaquin	Fairgrounds
10.	Tanforan	San Bruno	San Mateo	Horse racetrack
11.	Tulare	Tulare	Tulare	Fairgrounds
12.	Turlock	Turlock	Stanislaus	Fairgrounds
13.	Manzanar[63]	Owens Valley	Inyo	Aqueduct land

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APPENDIX B -- TEMPORARY DETENTION CAMPS IN CALIFORNIA, 1942

	Name	Dates of operation[64]	Maximum detainees at any one time[65]	Total detainees[66]
1.	Fresno	May 6 to October 30	5,120	5,344
2.	Marysville	May 8 to June 29	2,451	2,465
3.	Merced	May 6 to September 15	4,508	4,669
4.	Pinedale	May 7 to July 23	4,792	4,823
5.	Pomona	May 7 to August 24	5,434	5,514
6.	Sacramento	May 6 to June 26	4,739	4,770
7.	Salinas	April 27 to July 4	3,594	3,608
8.	Santa Anita	March 27 to October 27[67]	18,719	19,348
9.	Stockton	May 10 to October 17	4,271	4,390
10.	Tanforan	April 28 to October 13	7,816	8,033
11.	Tulare	April 20 to September 4	4,978	5,061
12.	Turlock	April 30 to August 12	3,662	3,699
13.	Manzanar[63]	March 21 to May 31[67]	9,666	9,681

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APPENDIX C -- TEMPORARY DETENTION CAMPS IN CALIFORNIA, 1942

	Name	Origins of detainees[68]	Concentration camp destinations[69]
1.	Fresno	Central San Joaquin Valley; Amador County	Gila, Jerome
2.	Marysville	Placer and Sacramento Counties	Tule Lake
3.	Merced	Northern California Coast; West Sacramento Valley; North San Joaquin Valley	Granada
4.	Pinedale	Sacramento and El Dorado Counties; Oregon; Washington	Poston, Tule Lake
5.	Pomona	Los Angeles, San Francisco, and Santa Clara Counties	Heart Mountain
6.	Sacramento	Sacramento and San Joaquin Counties	Tule Lake
7.	Salinas	Monterey Bay Area	Poston, Tule Lake
8.	Santa Anita	Los Angeles, San Diego, and Santa Clara Counties	Gila, Granada, Heart Mountain, Jerome, Manzanar, Poston, Rohwer, Topaz
9.	Stockton	San Joaquin County	Gila, Rohwer
10.	Tanforan	San Francisco Bay Area	Topaz
11.	Tulare	Southern California Coast; Los Angeles and Sacramento Counties	Gila
12.	Turlock	Sacramento River Delta; Los Angeles	Gila
13.	Manzanar[63]	Los Angeles, Amador, and San Joaquin Counties; Washington	--

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NOTES

1. The name Temporary Detention Camp accurately describes the true nature of the sites being nominated for historical landmark registration. At the time, the U. S. Army used the euphemism "Assembly Center," but these sites were not merely places of assemblage. Instead, they were essentially and primarily detention camps to hold people against their will. "Assembly Center" is a misnomer and misrepresentation, and therefore is unacceptable for use as a landmark name. Justification for this position is given in the Description Section, pages 10-13.

2. Statistical data contained in this application are from U. S. War Department, Final Report: Japanese Evacuation from the West Coast, 1942 (Washington: U. S. Government Printing Office, 1943), p. 362 et passim. Two-thirds majority of the detainees were native-born Americans: while it is recognized that the minority were Japanese nationals, the terms Japanese Americans or Californians will be used to include all long-time residents of the United States (see note #5).

3. Manzanar was one of the original Temporary Detention Camps, which made a total of thirteen in California. But on June 1, 1942, Manzanar was redesignated as a permanent concentration camp, and the inmates stayed in place. Manzanar's primary significance rests on its permanent camp status (California State Historical Landmark #850); and the experience at Manzanar was slightly different from the purely temporary camps. Although Manzanar is listed in the tables as an early Temporary Detention Camp, it is not part of this application. For the sake of readability, the special circumstances of Manzanar is not included in the text discussions.

4. The first group of Californians locked up were covered under "Civilian Exclusion Order #2" dated March 30, 1942. An earlier group from Bainbridge Island (Puget Sound), Washington was imprisoned under "Civilian Exclusion Order #1" dated March 24. Although the residents of Terminal Island (San Pedro Bay), Los Angeles County were evicted from their homes in late February, they were not incarcerated.

5. "All Persons of Japanese Ancestry" was defined to mean anyone with 1/16 or more Japanese ancestry. Immigrants from Japan were prohibited by statute and court decision from becoming naturalized American citizens (see note #12). Since immigration from Japan was cut off in 1924, all Japanese immigrants had lived in the United States for a minimum of 18 years, and most had lived here for over 30 years (see note #14).

6. Nanette Dembitz, "Racial Discrimination and the Military Judgement," Columbia Law Review, 45 (March 1945), p. 175; Harrop Freeman, "Genesis, Exodus, and Leviticus," Cornell Law Quarterly, 28 (June 1943), p. 414; Eugene Rostow, "The Japanese American Cases--A Disaster," Yale Law Journal, 54 (June 1945), p. 489.

7. The following articles of the U. S. Constitution were abrogated or abridged: Amendment 1 (freedom of religion, speech, press, and assemblage); Amendment 2 (right to keep and bear arms); Amendment 4 (freedom from unreasonable search and seizure); Amendment 5 (right to life, liberty, and property, and due process

of law); Amendment 6 (right to speedy and public trial by impartial jury, to be informed of charges, to be confronted with witnesses against, to call witnesses for, and to legal counsel); Amendment 7 (right to trial by jury); Amendment 8 (right to reasonable bail, freedom from cruel and unusual punishment); Amendment 13 (freedom from involuntary servitude); Amendment 14 (right to equal protection of the law); Amendment 15 (right to vote); Article 1, Section 9 (right to writ of habeas corpus).

8. Walton Bean, California: An Interpretive History (New York: McGraw Hill, 1968), pp. 163-165, 233-236, 242, 332-335; Robert F. Heizer, The Other Californians (Berkeley: University of California Press, 1971), pp. 154-194; Paul Jacobs, To Serve the Devil: Colonials and Sojourners (New York: Random House, 1971), Vol. 2, pp. 71-84, 93-108, 169-185; Andrew F. Rolle, California: A History (New York: Crowell, 1963), pp. 373-385.

9. Article XIX of the California State Constitution adopted on May 7, 1879. This article was not repealed until November 4, 1952 (1953 Cal Stat cxxxi).

10. For a summary of the numerous anti-Chinese laws, see Thomas W. Chinn, A History of the Chinese in California (San Francisco: Chinese Historical Society, 1969), pp. 23-32; Stanford M. Lyman, Chinese Americans (New York: Random House, 1974), pp. 54-85; Cheng-Tsu Wu, "Chink!": A Documental History of Anti-Chinese Prejudice in America (New York: World Publishing Company, 1972), pp. 11-103.

11. Bean, op. cit., p. 294.

12. Takao Ozawa v. U. S. (260 US 178, 1922). See Consulate-General of Japan, Documental History of Law Cases Affecting Japanese in the United States, 1916-1924 (New York: Arno Press, 1978), Vol. 1, pp. 1-120; Yuji Ichioka, "The Early Japanese Immigrant Quest for Citizenship," Amerasia Journal, 4:2 (1977), pp. 1-22.

13. 1913 Cal Stat 206 (1913); 1921 Cal Stat lxxxvii (1920). See Frank F. Chuman, The Bamboo People (Del Mar, Calif.: Publisher's Inc., 1976), pp. 39-51, 73-89, 117-125; Yamato Ichihashi, Japanese in the United States (Stanford: Stanford University Press, 1932), pp. 261-281.

14. Immigration Act of 1924 (43 Stat 153). See Chuman, op. cit., pp. 91-103; Roger Daniels, The Politics of Prejudice (Berkeley: University of California Press, 1962), pp. 1-107; Ichihashi, op. cit., pp. 298-317.

15. Michio Kaku, "Media: Racism in the Comics," Bridge, 3:1 (February 1974), pp. 25-29; Dennis M. Ogawa, From Japs to Japanese (Berkeley: McCutchan, 1971), pp. 2-25; Irvin Paik, "That Oriental Feeling," Roots: An Asian American Reader (Los Angeles: University of California, 1971), pp. 30-36; Jacobus tenBroek, Prejudice, War and the Constitution (Berkeley: University of California Press, 1954), pp. 22-67; Eugene F. Wong, On Visual Media Racism (New York: Arno Press, 1978), pp. 56-119.

16. Ronald Clark, The Man Who Broke Purple (Boston: Little, Brown, 1977), pp. 138-178; John K. Fairbank, East Asia: The Modern Transformation (Boston: Houghton Mifflin, 1965), pp. 606-612; Anne R. Fisher, Exile of a Race (Seattle: F. & T. Publishers, 1970), pp. 1-30.

17. Bob Kumamoto, "The Search for Spies," Amerasia Journal, 6:2 (Fall 1979), pp. 45-75; Michi Weglyn, Years of Infamy (New York: William Morrow, 1976), pp. 33-53.

18. Kumamoto, op. cit., p. 69.

19. Chuman, op. cit., p. 154; Bill Hosokawa, Nisei: The Quiet Americans (New York: William Morrow, 1969), pp. 237-240; Betty E. Mitson, "Interviews of Herbert V. Nicholson," Valiant Odyssey (Upland, Calif.: Brunk's Printing, 1978), pp. 9-25; tenBroek, op. cit. pp. 100-102.

20. Internment Camp was the term used by the Justice Department. In this respect, the Justice Department was more honest about what they were doing. Justice Department prisoners at least had some measure of due process: each internee was accorded an administrative hearing, was allowed to appeal to a neutral consul (Spain), and was granted protections of the Geneva Prisoners of War Convention of 1929. Detainees held by the Western Defense Command had none of these rights.

21. Morton Grodzins, Americans Betrayed (Chicago: University of Chicago Press, 1949), pp. 377-399; tenBroek, op. cit., p. 76.

22. There were 36 cases of violence or vandalism against Japanese Americans in all of the West Coast states during the first four months of the war; and only seven of those attacks were known to have been committed by white persons. See Grodzins, op. cit., p. 140.

23. Stetson Conn, Office of the Chief of Military History, Department of the Army, "The Decision to Evacuate the Japanese from the Pacific Coast," Command Decisions (New York: Harcourt, Brace, 1959), p. 100.

24. Most people failed to see an obvious point: real spies had to be inconspicuous, and only white people could fulfill such a role. Individuals convicted of espionage for Japan are named in Saburo Kido, Brief of the Japanese American Citizens League, Amicus Curiae, Fred Korematsu v. United States, In the Supreme Court of the United States, October Term 1944, No. 22, pp. 30-37.

25. Roger Daniels, The Decision to Relocate the Japanese Americans (Philadelphia: J. B. Lippincott, 1975), pp. 3-58; Grodzins, op. cit., pp. 19-225; tenBroek, op. cit., pp. 68-96.

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26. Executive Order 9066, February 19, 1942 (7 Fed Reg 1407).

27. U. S. War Dept., op. cit., pp. 25-29.

28. Mass eviction notices were posted in the streets on the afternoon of February 25; soldiers handed each household an individual notice on February 26; and all Japanese Americans had to be off Terminal Island by midnight February 27. Earlier, the Harbor Commission announced on February 14 that all leases held by Japanese Americans were subject to cancellation in 30 days--but that warning gave residents until March 14 to settle their affairs. See Paul Bailey, City in the Sun (Los Angeles: Westernlore Press, 1971), pp. 29-35; Audrie Girdner, The Great Betrayal (New York: Macmillan, 1969), pp. 110-114; Hosokawa, op. cit., pp. 309-311.

29. Public Proclamation #1, March 2, 1942 (7 Fed Reg 2320); U. S. War Dept., op. cit., p. 107. DeWitt issued hundreds of military orders applying exclusively to civilians of Japanese ancestry. For a chronology and discussion of the key orders, see Sue K. Embrey, The Lost Years, 1942-1946 (Los Angeles: Moonlight Publications, 1972), pp. 5-13; Dillon S. Myer, Uprooted Americans (Tucson: University of Arizona Press, 1971), pp. xxiii-xxx; tenBroek, op. cit., pp. 116-134; Dorothy S. Thomas, The Spoilage (Berkeley: University of California Press, 1946), pp. 9-13.

30. General Orders #35, March 11, 1942, Headquarters, Western Defense Command and Fourth Army; U. S. War Dept., op. cit., pp. 41, 66.

31. Public Law 77-503, March 21, 1942 (56 Stat 173).

32. Civilian Exclusion Order #1, March 24, 1942 (7 Fed Reg 2581).

33. Bailey, op. cit., p. 42; Girdner, op. cit., pp. 134-147; tenBroek, op. cit., p. 124; U. S. War Dept., op. cit., pp. 118-124.

34. Roger Daniels, Concentration Camps USA (New York: Holt, Rinehart and Winston, 1972), p. 38.

35. Bean, op. cit., p. 435; Daniels, Decision to Relocate, op. cit., pp. 27-28; Hosokawa, op. cit., pp. 457-467; Girdner, op. cit., pp. 20-21; Carey McWilliams, Prejudice: Japanese Americans (Boston: Little, Brown, 1945), pp. 141-147.

36. WCCA Director Bendetsen stated: "I am determined that if they (the children) have one drop of Japanese blood in them, they must go to camp." See Weglyn, op. cit., p. 77.

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37. Public Proclamation #3, March 24, 1942 (7 Fed Reg 2543).

38. Public Proclamation #4, March 27, 1942 (7 Fed Reg 2601).

39. tenBroek, op. cit., p. 126.

40. Dorothy S. Thomas, The Salvage (Berkeley: University of California Press, 1952), pp. 564-569.

41. Public Proclamation #6, June 2, 1942 (7 Fed Reg 4436).

42. Thomas, Spoilage, op. cit., p. 12.

43. Bean, op. cit., p. 434; Allan R. Bosworth, America's Concentration Camps (New York: W. W. Norton, 1967), p. 125.

44. tenBroek, op. cit., pp. 132-133; Thomas, Spoilage, op. cit. pp. 12-13.

45. U. S. Department of the Interior, War Relocation Authority, The Evacuated People: A Quantitative Description (Washington: U. S. Government Printing Office, 1946), p. 8; U. S. War Dept., op. cit., p. 362.

46. U. S. War Dept., op. cit., pp. 248-273.

47. Ibid., pp. 227-233, 282-284, 288, 370.

48. Ibid., pp. 151-183.

49. Bailey, op. cit., p. 42; Bosworth, op. cit., p. 117; Girdner, op. cit., pp. 146-147; Anthony L. Lehman, Birthright of Barbed Wire (Los Angeles: Westernlore Press, 1970), p. 24; tenBroek, op. cit., p. 126; U. S. War Dept. op. cit., p. 444.

50. Estelle Ishigo, Lone Heart Mountain (Los Angeles: Anderson, Ritchie and Simon, 1972), p. 9.

51. Charles Kikuchi, The Kikuchi Diary (Urbana: University of Illinois Press, 1973), p. 54.

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52. Mine Okubo, Citizen 13660 (New York: Columbia University Press, 1946), p. 81.

53. U. S. War Dept., op. cit., p. 216.

54. Civilian Restrictive Order #1, May 19, 1942 (8 Fed Reg 982).

55. Bailey, op. cit., pp. 43-53; Maisie Conrat, Executive Order 9066 (San Francisco: California Historical Society, 1972), pp. 76, 81, 86, 87, 94; Daniels, Concentration Camps, op. cit., pp. 89-90; Girdner, op. cit., pp. 148-167; Ishigo, op. cit., pp. 9-10; Lehman, op. cit., pp. 21-27; Okubo, op. cit., pp. 34-86; U. S. War Dept., op. cit., pp. 183, 186; Weglyn, op. cit., pp. 80-82.

56. See samples of "Civilian Exclusion Order" and "Instructions to All Persons of Japanese Ancestry" in U. S. War Dept., op. cit., pp. 97-100. Other commonly used euphemisms were: "evacuation" instead of expulsion, "relocation" instead of incarceration, "reception center" instead of concentration camp, "evacuee" instead of prisoner.

57. Ken Adachi, The Enemy That Never Was (Toronto: McClelland and Stewart, 1976), pp. 218, 251-252.

58. Weglyn, op. cit., p. 202 (Japanese edition, p. 229).

59. Gerald Green, The Artists of Terezin (New York: Hawthorn Books, 1969), p. 20; Julius Schatzle, Stationen zur Holle (Frankfurt am Main: Roderberg-Verlag GmbH, 1974), p. 80; John Tolan, Adolph Hitler (Garden City: Doubleday, 1976), Vol. 2, p. 861.

60. U. S. War Dept., op. cit., pp. 155-165.

61. Ibid.

62. Wartime Civil Control Administration/Western Defense Command press releases dated March 28, April 1, April 4, 1942.

63. Manzanar is not part of this application. See note #3.

64. U. S. War Dept., op. cit., p. 227.

65. Ibid.

66. U. S. War Dept., op. cit., p. 373.

67. The first detention order applicable in California was issued on March 30. But some "volunteers" entered these installations earlier to help prepare the camp for the main body of detainees.

68. U. S. War Dept., op. cit., pp. 363-366, map insert II.

69. Ibid., p. 381.

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PHOTOGRAPHS, PRINTS, AND/OR DRAWINGS (Both recent and historic, if available.)

8 x 10 photographs enclosed:

1. Santa Anita Detention Camp -- Arrival of detainees
2. Stockton Detention Camp -- Baggage inspection on horse track
3. Stockton Detention Camp -- Detainees being led to barracks
4. Tanforan Detention Camp -- Unfinished horsestall living quarters
5. Tanforan Detention Camp -- Mud and horse manure front yards
6. Tanforan Detention Camp -- Communal latrine/laundry room by horsestall units
7. Tanforan Detention Camp -- Mess hall queue; detainees had to bring own plates
8. Salinas Detention Camp -- Walking back to tarpaper homes
9. Santa Anita Detention Camp -- Guard tower with machine gun emplacement
10. Santa Anita Detention Camp -- Dawn departure for a permanent concentration camp

NOTE: The enclosed photographs are for reference use only; and are not for publication without written permission from the applicant.

19-186564

BIBLIOGRAPHY: CITE THE BOOKS, RECORDS, AND OTHER AUTHORITIES SUSTAINING THESE FACTS.

ALL SOURCES HAVE BEEN CITED IN THE NOTES

Raymond Y Okamura

RAYMOND Y. OKAMURA
Application Writer

Isami Arifuku Waugh

ISAMI ARIFUKU WAUGH
Survey Coordinator

Signature

Date March 17, 1980

This form and all related correspondence is to be sent to the California Historical Landmarks Advisory Committee, Post Office Box 2390, Sacramento, California 95811.

An application must be considered solely on its historic or architectural merits and not for commercial gain, political benefits, or other non-historical reasons.

An individual committee member can advise and counsel an applicant, but all applications must be considered by the full committee meeting in regular session.

19-186564

OFFICE OF HISTORIC PRESERVATION * * * Directory of Properties in the Historic Property Data File for LOS ANGELES County. Page 868 08-15-11

PROPERTY-NUMBER	PRIMARY-#	STREET.ADDRESS.....	NAMES.....	CITY.NAME.....	OWN	YR-C	OHP-PROG..	PRG-REFERENCE-NUMBER	STAT-DAT	NRS	CRIT
156175		340 W JEFFERSON AVE		POMONA	P	1920	HIST.SURV.	1766-0019-0201	10/12/05	5D1	
156176		354 W JEFFERSON AVE		POMONA	P	1936	HIST.SURV.	1766-0019-0202	10/12/05	6Z	
156177		355 W JEFFERSON AVE		POMONA	P	1905	HIST.SURV.	1766-0019-0203	10/12/05	5D1	
156178		359 W JEFFERSON AVE		POMONA	P	1910	HIST.SURV.	1766-0019-0204	10/12/05	5D1	
156190		360 W JEFFERSON AVE		POMONA	P	1923	HIST.SURV.	1766-0019-0205	10/12/05	5D1	
156191		365 W JEFFERSON AVE		POMONA	P	1922	HIST.SURV.	1766-0019-0206	10/12/05	5D1	
156192		375 W JEFFERSON AVE		POMONA	P	1924	HIST.SURV.	1766-0019-0207	10/12/05	5D1	
156193		380 W JEFFERSON AVE		POMONA	P	1924	HIST.SURV.	1766-0019-0208	10/12/05	5D1	
156194		396 W JEFFERSON AVE		POMONA	P	1919	HIST.SURV.	1766-0019-0209	10/12/05	5D1	
156195		126 W KINGSLEY AVE		POMONA	P	1895	HIST.SURV.	1766-0019-0210	10/12/05	6Z	
156196		131 W KINGSLEY AVE		POMONA	P	1936	HIST.SURV.	1766-0019-0211	10/12/05	5D1	
156198		134 W KINGSLEY AVE		POMONA	P	1903	HIST.SURV.	1766-0019-0212	10/12/05	5D1	
156199		144 W KINGSLEY AVE		POMONA	P	1921	HIST.SURV.	1766-0019-0213	10/12/05	5D1	
156200		145 W KINGSLEY AVE		POMONA	P	1900	HIST.SURV.	1766-0019-0214	10/12/05	5D1	
156201		150 W KINGSLEY AVE		POMONA	P	1923	HIST.SURV.	1766-0019-0215	10/12/05	5D1	
156202		155 W KINGSLEY AVE		POMONA	P	1906	HIST.SURV.	1766-0019-0216	10/12/05	5D1	
156206		161 W KINGSLEY AVE		POMONA	P	1893	HIST.SURV.	1766-0019-0217	10/12/05	5D1	
156207		168 W KINGSLEY AVE		POMONA	P	1895	HIST.SURV.	1766-0019-0218	10/12/05	5D1	
156208		177 W KINGSLEY AVE		POMONA	P	1895	HIST.SURV.	1766-0019-0219	10/12/05	5D1	
156209		180 W KINGSLEY AVE		POMONA	P	1923	HIST.SURV.	1766-0019-0220	10/12/05	5D1	
156210		185 W KINGSLEY AVE		POMONA	P	1895	HIST.SURV.	1766-0019-0221	10/12/05	5D1	
156211		190 W KINGSLEY AVE		POMONA	P	1924	HIST.SURV.	1766-0019-0222	10/12/05	5D1	
156212		195 W KINGSLEY AVE		POMONA	P	1922	HIST.SURV.	1766-0019-0223	10/12/05	5D1	
150550		1075 W LAUREL AVE		POMONA	P	1950	HIST.RES.	DOE-19-04-0294-0000	09/01/04	6Y	
							PROJ.REVW.	HUD040809L	09/01/04	6Y	
091576	19-186564	1101 W MCKINLEY AVE	POMONA ASSEMBLY CENTER--TEMPORARY	POMONA	C	1942	HIST.SURV.	DOE-19-03-0153-0000	03/20/03	6Y	
							PROJ.REVW.	FCC030228G	03/20/03	6Y	
							HIST.RES.	SHL-0934-0005	05/13/80	1CL	
132699		1875 W MISSION BLVD	GENERAL DYNAMIC'S POMONA PLANT/ GO	POMONA		1952	HIST.RES.	DOE-19-01-0272-0000	11/27/01	6Y	
							PROJ.REVW.	FHWA011019B	11/27/01	6Y	
165334		311 W MONTEREY AVE		POMONA	P	1923	PROJ.REVW.	HUD070125H	02/23/07	6Y	
170018		375 W MONTEREY AVE		POMONA	P	1906	PROJ.REVW.	HUD071212M	12/28/07	6Y	
170019		385 W MONTEREY AVE		POMONA	P	1910	PROJ.REVW.	HUD071212N	12/28/07	6Y	
143208		636 W MONTEREY AVE	POMONA CITY STABLE / POMONA CITY B	POMONA	M	1909	HIST.RES.	NPS-04001109-0000	10/06/04	1S	AC
							NAT.REG.	19-0430	09/03/03	3S	AC
177379		759 W MONTEREY AVE		POMONA	P	1908	PROJ.REVW.	HUD091015I	10/27/09	6Y	
179067		1152 W ORANGE GROVE		POMONA	P	1946	PROJ.REVW.	HUD100419E	04/22/10	6Y	
156229		140 W ORANGE GROVE AVE		POMONA	P	1950	HIST.SURV.	1766-0019-0240	10/12/05	5D1	
156230		164 W ORANGE GROVE AVE		POMONA	P	1938	HIST.SURV.	1766-0019-0241	10/12/05	5D1	
156231		176 W ORANGE GROVE AVE		POMONA	P	1938	HIST.SURV.	1766-0019-0242	10/12/05	5D1	
156232		188 W ORANGE GROVE AVE		POMONA	P	1938	HIST.SURV.	1766-0019-0243	10/12/05	5D1	
156233		194 W ORANGE GROVE AVE		POMONA	P	1938	HIST.SURV.	1766-0019-0244	10/12/05	5D1	
156234		226 W ORANGE GROVE AVE		POMONA	P	1928	HIST.SURV.	1766-0019-0245	10/12/05	5D1	
156235		240 W ORANGE GROVE AVE		POMONA	P	1885	HIST.SURV.	1766-0019-0246	10/12/05	6Z	
156236		250 W ORANGE GROVE AVE		POMONA	P	1912	HIST.SURV.	1766-0019-0247	10/12/05	5D1	
156237		302 W ORANGE GROVE AVE		POMONA	P	1958	HIST.SURV.	1766-0019-0248	10/12/05	5D1	
156238		366 W ORANGE GROVE AVE		POMONA	P	1914	HIST.SURV.	1766-0019-0249	10/12/05	5D1	
156239		394 W ORANGE GROVE AVE		POMONA	P	1928	HIST.SURV.	1766-0019-0250	10/12/05	5D1	
156240		428 W ORANGE GROVE AVE		POMONA	P	1924	HIST.SURV.	1766-0019-0251	10/12/05	5D1	
156241		430 W ORANGE GROVE AVE		POMONA	P	1929	HIST.SURV.	1766-0019-0252	10/12/05	5D1	
156242		432 W ORANGE GROVE AVE		POMONA	P	1927	HIST.SURV.	1766-0019-0253	10/12/05	5D1	
156243		440 W ORANGE GROVE AVE		POMONA	P	1928	HIST.SURV.	1766-0019-0254	10/12/05	5D1	
156244		446 W ORANGE GROVE AVE		POMONA	P	1885	HIST.SURV.	1766-0019-0255	10/12/05	6Z	
156245		462 W ORANGE GROVE AVE		POMONA	P	1937	HIST.SURV.	1766-0019-0256	10/12/05	5D1	
156246		474 W ORANGE GROVE AVE		POMONA	P	1930	HIST.SURV.	1766-0019-0257	10/12/05	5D1	
156247		480 W ORANGE GROVE AVE		POMONA	P	1946	HIST.SURV.	1766-0019-0258	10/12/05	5D1	

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PROPERTY-NUMBER	PRIMARY-#	STREET.ADDRESS.....	NAMES.....	CITY.NAME.....	OWN	YR-C	OHP-PROG..	PRG-REFERENCE-NUMBER	STAT-DAT	NRS	CRIT
125522		918 TINDALO RD					PROJ.REVW.	HUD971006G	10/06/97	6Y	
				ARCADIA	U	1942	HIST.RES.	DOE-19-97-0242-0000	10/06/97	6Y	
125744		1213 VALENCIA WY					PROJ.REVW.	HUD971006G	10/06/97	6Y	
				ARCADIA	U	1947	HIST.RES.	DOE-19-99-0385-0000	06/14/99	6Y	
153842		129 W CAMINO REAL AVE					PROJ.REVW.	HUD990614F	06/14/99	6Y	
152525		650 W DUARTE RD		ARCADIA		1930	PROJ.REVW.	HUD040329B	04/21/04	6U	
				ARCADIA	P	1957	HIST.RES.	DOE-19-04-0423-0000	08/17/04	6Y	
030021	19-179332	701 W FOOTHILL BLVD	ANOAKIA				PROJ.REVW.	FCC040712J	08/17/04	6Y	
091575	19-186564	285 W HUNTINGTON DR	SANTA ANITA PARK / ASSEMBLY CENTER	ARCADIA	P	1912	HIST.SURV.	1006-0001-0000		3S	
				ARCADIA	U	1942	HIST.RES.	NPS-06000672-9999	08/03/06	2S	A
							NAT.REG.	19-0486	05/05/06	2S	A
083924		60 W LAS FLORES AVE					HIST.RES.	SHL-0934-0008	05/13/80	1CL	
083304		52 W LONGDEN AVE		ARCADIA	U	1927	PROJ.REVW.	HUD920211B	08/30/93	6Y	
125746		225 W LONGDEN AVE		ARCADIA	U	1937	PROJ.REVW.	HUD891231X	08/05/93	6Y	
				ARCADIA	U	1946	HIST.RES.	DOE-19-99-0387-0000	06/14/99	6Y	
153713		618 W LONGDEN AVE					PROJ.REVW.	HUD990614F	06/14/99	6Y	
125738		107 W NAOMI AVE		ARCADIA		1927	PROJ.REVW.	HUD040329B	04/21/04	6U	
				ARCADIA	U	1941	HIST.RES.	DOE-19-99-0380-0000	06/14/99	6Y	
154756		24 W NORMAN AVE					PROJ.REVW.	HUD990614F	06/14/99	6Y	
085015		239 W NORMAN AVE		ARCADIA		1925	PROJ.REVW.	HUD050627E	07/15/05	6U	
153931		100 W PAMELA RD		ARCADIA	P	1938	PROJ.REVW.	HUD931105G	12/15/93	6Y	
125740		68 W WOODRUFF AVE		ARCADIA		1950	PROJ.REVW.	HUD031101B	12/01/03	6U	
				ARCADIA	U	1947	HIST.RES.	DOE-19-99-0382-0000	06/14/99	6Y	
077894		452 W WOODRUFF AVE					PROJ.REVW.	HUD990614F	06/14/99	6Y	
084011		452 W WOODRUFF AVE		ARCADIA	U	1941	PROJ.REVW.	HUD920923M	10/28/92	6Y	
153841		617 W WOODRUFF AVE		ARCADIA	U	1941	PROJ.REVW.	HUD920928M	08/31/93	6Y	
				ARCADIA		1946	PROJ.REVW.	HUD040329B	04/21/04	6U	
173859			SANTA ANITA DAM DAM KEEPER'S HOUSE	(VIC) ARCADIA	C	1937	PROJ.REVW.	COE080804A	09/15/08	6Y	
173860			SANTA ANITA DAM PAINT AND EXPLOSIV	(VIC) ARCADIA	C	1936	PROJ.REVW.	COE080804A	09/15/08	6Y	
173861			SANTA ANITA DAM SLUICE GATE CONTRO	(VIC) ARCADIA	C	1936	PROJ.REVW.	COE080804A	09/15/08	6Y	
173862			SANTA ANITA DAM SHELTER HOUSE	(VIC) ARCADIA	C	1946	PROJ.REVW.	COE080804A	09/15/08	6Y	
173858			SANTA ANITA DAM	(VIC) ARCADIA	C	1927	PROJ.REVW.	COE080804A	09/15/08	6Y	
152618		10273 BARTEE AVE									
				ARLETA		1952	HIST.RES.	DOE-19-03-0466-0000	07/31/03	6Y	
150950		CANTERBURY AVE	DWP TRANSMISSION TOWERS				PROJ.REVW.	HUD030801A	07/31/03	6Y	
				ARLETA	M	1954	HIST.RES.	DOE-19-04-0365-0000	03/05/04	6Y	
143723		13560 OSBORNE ST					PROJ.REVW.	FCC040305F	03/05/04	6Y	
				ARLETA	P		HIST.RES.	DOE-19-03-0240-0000	08/08/03	6Y	
143724		13580 OSBORNE ST	VICTORY OUTREACH CHURCH				PROJ.REVW.	FCC030609D	08/08/03	6Y	
				ARLETA	P	1956	HIST.RES.	DOE-19-03-0241-0000	08/08/03	6Y	
125208		13712 TERRA BELLA ST					PROJ.REVW.	FCC030609D	08/08/03	6Y	
				ARLETA	Y	1948	HIST.RES.	DOE-19-98-0343-0000	08/03/98	6Y	
145937		14216 WEIDNER ST					PROJ.REVW.	HUD980803I	08/03/98	6Y	
				ARLETA		1950	HIST.RES.	DOE-19-03-0385-0000	01/31/03	6U	
							PROJ.REVW.	HUD030103G	01/31/03	6U	
095205		11625 183RD ST									
095232		11649 183RD ST		ARTESIA		1927	PROJ.REVW.	HUD940324M	09/19/94	6Y	
095204		11656 185TH ST		ARTESIA		1928	PROJ.REVW.	HUD940429J	09/19/94	6Y	
082797		11525 187TH ST		ARTESIA		1940	PROJ.REVW.	HUD940324L	09/19/94	6Y	
				ARTESIA	P	1943	PROJ.REVW.	HUD080801C	08/12/08	6Y	
081577		18728 ARLENE AVE					PROJ.REVW.	HUD930429O	07/19/93	6Y	
095233		18629 ARLINE AVE		ARTESIA	U	1912	PROJ.REVW.	HUD871027C	05/22/89	6Y	
083981		18728 ARLINE AVE		ARTESIA		1923	PROJ.REVW.	HUD940429K	09/19/94	6Y	
081613		18408 CLARKDALE AVE		ARTESIA	U	1910	PROJ.REVW.	HUD920422I	08/31/93	6Y	
				ARTESIA	U	1923	HIST.RES.	DOE-19-97-0169-0000	10/15/97	6U	

19-187025 PROP # 123678

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI # DOE-19-99-0319-000
Trinomial
NRHP Status Code 6
Other Listings
Review Code Reviewer Date

Caltrans ID, County/Route/Postmile/EA: LA-10-PM 42.4/48.3, 122401 **Map Ref. #** 12-13

P1. Resource name(s) or number: C. P. Stensgard Residence

***P2. Location:** ***a. County** Los Angeles
***c. Address** 565 Burdick Drive **City** Pomona **Zip** 91768-2414

***e. Assessor's Parcel Number** 8358-004-004

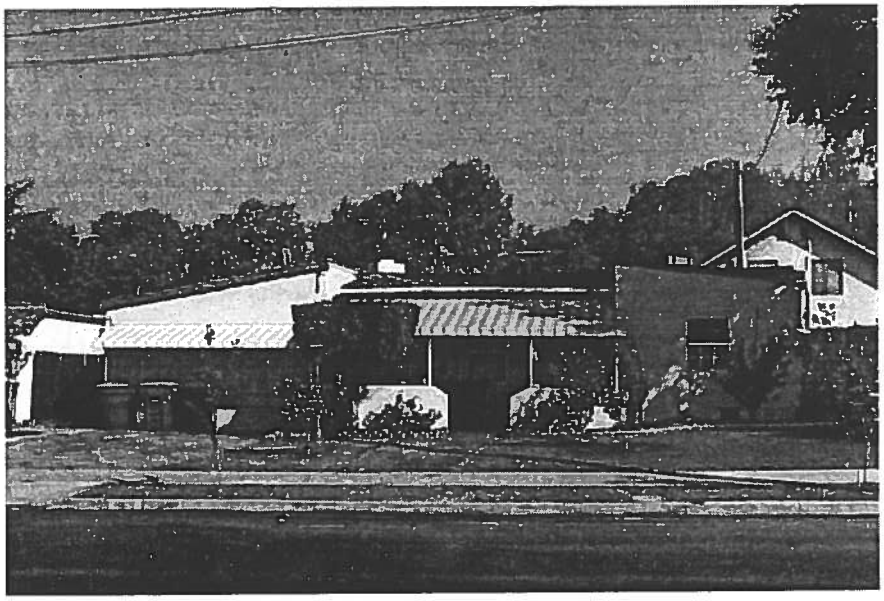
***P3a. Description:**

This Spanish style single family residence is made of frame construction set on concrete foundations. It is sheathed in white stucco and roofed in red clay tile. The central section is capped with a low-pitched side gable roof. It is flanked by pavilions covered with shed roofs. The compositional massing reveals the floor plan—a slightly set back main living quarters in the center, a dormitory wing to the right and a garage to the left. The roll-up paneled garage door and slab front porch are protected by metal awnings. The porch is enclosed by a low solid wall with an opening on center. Windows are six over six double hung.

Landscaping consists of low foundation plantings and a grass lawn parted by a scored red concrete walkway.

***P3b. Resource Attributes:** HP-3, Single Family Property
***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other

P5a. Photo



P5b. Photo date:
August 20, 1999

***P6. Date Constructed/Sources:**
c. 1930

***P7. Owner and Address:**
Jose & Maria V. Ramirez
565 East Burdick Drive
Pomona, CA 91768-2414

***P8. Recorded by:**
Diane Kane, Ph.D.
Caltrans
Office of Environmental Planning
120 South Spring Street
Los Angeles, CA 90012

***P9. Date Recorded:**
October 14, 1999

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Supplemental Historic Architectural Survey Report for the I-10 HOV Lane Project from the SR 57/210 Interchange to the Los Angeles County/San Bernardino County Line, Caltrans, October 1999.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ■Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other

***Required information**

19-187025

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or # : Map #12-13

B1. Historic name: C. P. Stensgard Residence
B2. Common name: 565 Burdick Drive
B3. Original Use: Residential **B4. Present use:** Residential
***B5. Architectural Style:** Spanish
***B6. Construction History:** Built 1930; Garage converted to den in 1951.
***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
B9a. Architect: Unk nown **b. Builder:** Unknown
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** Residential **Applicable Criteria** N/A

This single family residence was built in 1930 by C. P. Stensgard. It occupies Lot 6, Block A, in the Ganesha Park Tract. The 1068 sq. ft. residence, consisting of two living rooms, two bedrooms, a bath, a kitchen and a breakfast nook, was originally valued at $2136.00. In 1951, the attached garage was converted to a den.

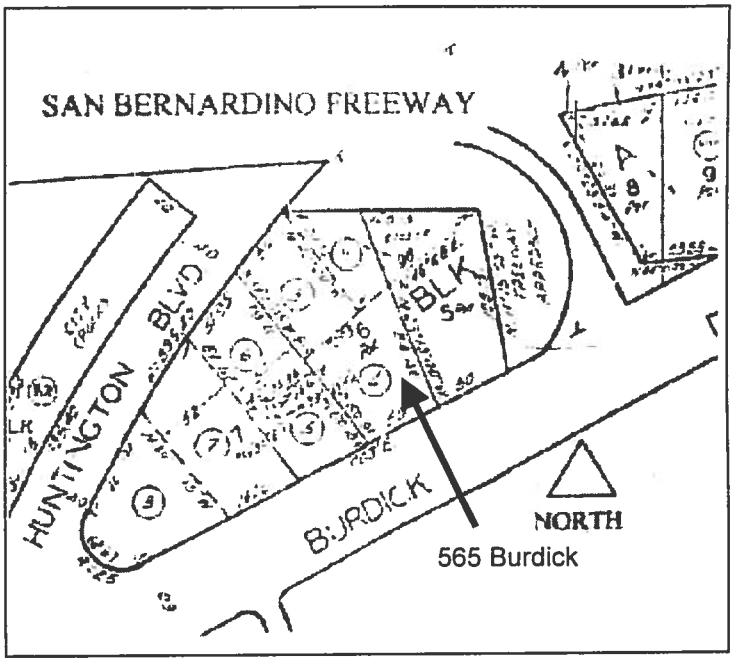
Although this residence is fairly intact and is typical of modest, middle class architecture of its day, it does not exhibit any exceptional qualities or design features that would denote architectural merit. It is not associated with significant events or persons in Pomona History. It does not appear to meet the eligibility requirements for the National Register of Historic Places. In addition, this property was evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, and was not determined to be a historic resource for the purposes of CEQA.

B11. Additional Resource Attributes: Single Family Property

***B12. References:**
Los Angeles County Assessor's Map Books
Los Angeles County Assessor's Archives,
West Covina Assessor's Files
Pomona Planning Department Building Files

B13. Remarks:
***B14. Evaluator:** Diane Kane Ph. D., Caltrans
120 S. Spring Street, Los Angeles, CA 90012

*Date of Evaluation October 14, 1999



(This space reserved for official comments.)

19-187041

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # _____
HRI # HRI# 091576
Trinomial _____
NRHP Status Code 6Z

Page 1 of 5 Other Listings _____
Review Code _____ Reviewer _____ Date _____

P1. Resource Identifier: Fairplex Clubhouse
P2. Location: a. County Los Angeles and (Address and/or UTM Coordinates. Attach Location Map as required.)
b. Address 1101 W. McKinley Avenue
City Pomona Zip 91768
c. UTM: USGS Quad _____ (7.5'/15') Date _____ ; Zone _____ , _____ mE/ _____ mN
d. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate):
Building No. 17-B Fairplex, Parcel II of the El Paraiso Tract as per map recorded in Book 28, Page 60 of Maps of the Office of the Los Angeles County Recorder

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):
See Continuation Sheet

P4. Resources Present: ☒Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District

P5. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P6. Date Constructed/Age:
☐Prehistoric ☒ Historic ☐ Both
1964

P7. Owner and Address:
Fairplex
P.O. Box 2250
Pomona, CA. 97169

P8. Recorded by (Name, affiliation, and address):
Janet Tearnen, M.A. &
Lauren Bricker, Ph.D.
Redlands, CA 92373

P9. Date Recorded: 2/23/98

P10. Type of Survey ☒ Intensive ☐ Reconnaissance ☐Other
Describe:
Section 106 Compliance

P11. Report Citation (Provide full citation or enter "none"): none

Attachments: ☐NONE ☐Map Sheet ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Linear Resource Record ☐Archaeological Record ☐District Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List): _____

19-187041

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # _____
HRI# _____

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 2 of 5

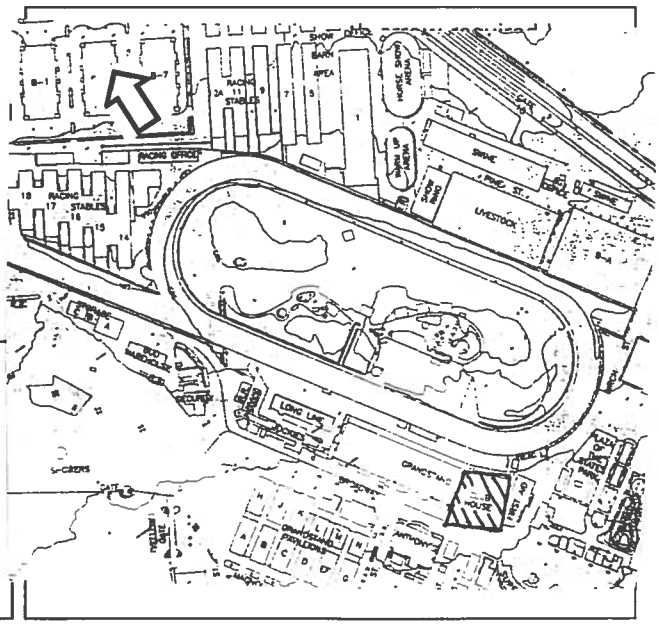
B1. Resource Identifier: Fairplex Clubhouse
B2. Historic Name:
B3. Common Name: Fairplex Clubhouse
B4. Address: 1101 W. McKinley Avenue
City: Pomona **County:** Los Angeles **Zip:** 91768
B5. Zoning: F-Fair Zone B6. Threats: none known
B7. Architectural Style: Post-War International Style
B8. Alterations and Date(s):
Interior extensively altered in 1986

B9. Moved? ☒No ☐Yes ☐ Unknown Date: _____ Original Location: _____
B10. Related Features:
None

B11. Architect: Froehlich and Kow, Los Angeles Builder: unknown
B12. Historic Attributes (List attributes and codes): HP20—Stadium/Sports Arena

B13. Significance: Theme: none determined Area: _____
Period of Significance: _____ Property Type _____ Applicable Criteria N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)
The Fairplex Clubhouse was built in 1964 for use as a pari-mutuel betting facility and grandstand for viewing horse races. It is not yet fifty years of age and does not meet the criteria for "exceptional importance" under Criteria Consideration G: Properties that have achieved significance wihtin the last fifty years." The building is not eligible for listing in the National Register of Historic Places or for any local or state designations.

B14. References:
See Continuation Sheet



B15. Evaluator: Tearnen/Bricker
Date of Evaluation: 2/23/98

(This space reserved for official comments.)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

Primary # _____

HRI #/Trinomial _____

☒ Continuation ☐ Update

Resource Identifier: Fairplex Clubhouse

P3. Description:

The 487-acre Fairplex, the facility hosting the annual Los Angeles County Fair is located in Pomona, California. The fairgrounds are comprised of several distinct areas of activity. Among these is the centrally located Fairplex Park. This consists of a 5/8 mile racetrack (1922; alterations, 1985-86) and a number of related buildings located to the north, east, and west. At the southwest corner of Fairplex Park is the Grandstand (1932) and Clubhouse (1964; additions and alterations, 1986). Adjacent to the Clubhouse is a first-aid building (1954), and a concessions building; the functions of these buildings do not directly relate to the racetrack activities.

The Clubhouse (Fairplex building #17-B) is sited south of the Grandstand and was constructed for use as a pari-mutuel betting facility and for viewing horse races. It shares a common wall with the older Grandstand building although it was constructed as a separate building. The Clubhouse is a four-story reinforced concrete and steel frame building. It is roughly square in plan. The interior, western portion of each floor accommodates elevator lobbies, cocktail lounge, (second floor) and rest rooms. The remaining eastern sections of the building are part of a tiered grandstand that extends the grandstand portion of the earlier (1932) building. The exposed steel truss roof which shelters the seating is supported by steel beams.

Stylistically, the Clubhouse is an example of the post-war International Style. The selection of architectural form was in keeping with current trends found in the design of recreation, institutional, and commercial buildings of the 1950s and 60s. At the same time, the inherent classicism of the main facade, in which expressed structural beams frame five bays, successfully continues the composition of the 1932 Moderne style building. Additionally, the height of the Clubhouse maintains the cornice line of the earlier Grandstand building. In contrast with these gestures to the past, the semi-enclosed fourth floor projects beyond the massing of the building in an anti-classical fashion that deliberately declares the building's modernity. Also the choice of exterior construction materials is reflective of current practice: at the ground floor panels of brightly colored glazed tile contrast with lightly tinted stucco wall surfaces, glass and aluminum doors and windows define the entrance, and metal screens unify the second and third story window openings. The interior of the Clubhouse was extensively altered in 1986.

B14. References:

Andreason Engineering, Inc. "L.A. County Fairgrounds Site Planametrics," n.d.

Fairplex, Inc. "Los Angeles County Fair Association: History of Fairplex," 1996.

Froehlich and Kow Architects, Los Angeles. Floor Plans and Details for Addition and Alterations: Grandstand and Clubhouse L.A. County Fair, Pomona, CA., 1988.

Los Angeles County Fairgrounds Property Records, Building 17-B, Clubhouse

Contacts:

Richard Belmudez, Planner, City of Pomona

Ronald J. Juliff, Vic President Administration, Fairplex

Raymond Ortegaso, Human Resources Assistant, Fairplex

Bill Shacklet, Facilities Manager, Fairplex

P5. Additional Photographs:



North Elevation showing a portion of the Grandstand Building



East elevation

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary# _____
HRI# _____
Trinomial _____
NRHP Status Code _____
Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 **of** 13 *** Resource Name or #:** (Assigned by recorder) Los Angeles County Fair Grandstand

P1. Other Identifier:
*** P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
*** a. County:** Los Angeles County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
*** b. USGS 7.5' Quad** San Dimas **Date** 1980 **T** 1S; **R** 9W; N/A ¼ **of** N/A ¼ **of Sec** 13; **B.M.** S.B.
c. Address 1101 W. McKinley Avenue City Pomona Zip 91768
d. UTM: (Give more than one for large and/or linear resources) Zone 11S, 429319 mE/ 3771727 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
The specific project location (APN 8378-020-901) is at the Fairplex or Los Angeles County Fairgrounds (Fairgrounds), a 543-acre site bounded by N. White Avenue and Fulton Road to the east, Arrow Highway to the north, Fairplex Drive to the west, and W. McKinley Avenue to the south.

*** P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The subject property is a grandstand west of a race track in the center of the parcel. The grandstand is currently a complex composed of three interconnected sections: the original grandstand built in 1932, a first aid section south of the original grandstand built in 1954, and a grandstand addition built between them in 1964. The grandstand addition joined the original grandstand and the first aid section to create a grandstand complex. The complex has an irregularly-shaped footprint that wraps around the southwest corner of the race track. The subject parcel and the area surrounding it are characterized by both flat and hilly topography that has undergone extensive ground disturbance, due to development. The parcel is primarily covered with pavement.
SEE CONTINUATION SHEET

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P3b. Resource Attributes: (List attributes and codes) HP39 - Other (grandstand)

*** P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: (view, date, accession #) North and West Elevations, October 2010

*** P6. Date Constructed/Age and Source:** ☒Historic ☐Prehistoric ☐Both 1932, 1954, 1964 (*Los Angeles Times* 1932, 1954, 1964 articles)

*** P7. Owner and Address:** Private

*** P8. Recorded by:** (Name, affiliation, and address)
URS Corp.
1615 Murray Canyon Road, Suite 1000
San Diego, CA, 92108-4314

*** P9. Date Recorded:** October 2010

*** P10. Survey Type:** (Describe) Intensive Survey
*** P11. Report Citation:**
(Cite survey report and other sources, or enter "none.") Verizon Cellular Communications Tower Site -- Estrella LTE, 1101 W. McKinley Avenue (APN: 8378-020-901) Pomona, CA 91768, October 2010.

*** Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #_____
HRI #_____
Trinomial_____

***P3a. (Continued)**

The grandstand is a complex composed of three interconnected sections: the original grandstand built in 1932, a first aid section south of the original grandstand built in 1954, and a grandstand addition built between them in 1964. The grandstand addition joined the original grandstand and the first aid station to create a grandstand complex. The complex has an irregularly shaped footprint that wraps around the southwest corner of the race track.

Original Grandstand
The original grandstand is four-stories tall, 420 feet long, rectangular in plan, and covered by a flat composition-sheet roof. It is in the Art Deco style. The words "FAIRPLEX" have been recently painted in a bubble font on the roof. The east elevation is open for tiered seating. It is covered by a steel roof overhang supported by steel beams connected to curving rafters. The overhang is lined by a Warren truss with vertical members between the "W" shapes formed by the diagonal members.

The west elevation features a monumental concrete block façade book-ended on each side by square-plan piers. Each pier is marked on the two elevations by a recessed vertical band of painted glass with small square-shaped mullions. The band stretches from the second story to the top story. The glass is set in panels that are five squares long and six squares high. At the upper section of the each panel, there is a rectangular three-by-two-square window. These windows vary and appear to be pivot, hopper, or awning sashes. At ground level, each pier houses an entry that consists of non-original metal double doors and transom windows in a recessed opening that slightly projects from the pier wall. The openings are topped by geometric-pattern cornice. Between the piers are nine symmetrical bays divided by fluted pilasters with no capitals. The bay consists of a deeply recessed vertical band of painted glass as seen in the piers. Above the piers and centered within each bay are three deeply recessed rectangular openings with metal-framed casement windows.

Centered on the west elevation is a one-story projecting, flat-roofed entrance of four rectangular bays. The main entrance features a triangular-plan Streamline Moderne marquee with curved corners and wing wall vertical signs ("GRAND STAND"), one on either side of the marquee. The marquee, sign, and the roof line are decorated with neon lighting. On either side of the main entrance are recessed ticket booths supported by metal poles. Each booth features four ticket windows that are wood-framed with a projecting sill and metal grille. An extra, open bay is south of the southern ticket booth.

The north elevation wall is triangular, cut to reflect the tiered grandstand seats. It features seven recessed metal-framed windows that have been painted over. The windows consist of a central double-hung sash with fixed windows on the top and bottom. The roof overhang's truss is covered by a screen that covers recently-added panel antennas.

First Aid Section
The first aid section faces the south and is roughly rectangular in plan. It is in the mid-century modern style. It is two stories, clad with a stucco finish, and covered by a flat composition sheet roof with deep overhanging eaves. The south elevation is symmetrically organized with a central entry framed by four evenly spaced thin, projecting piers that extend from the ground level to the soffit and an overhang that projects from above the first story entry, on top of which the words "FIRST AID" are mounted upright. Above the original aluminum doors are metal-framed windows. On both sides of the entrance and on both stories are horizontal rows of four windows (casement windows flanking a fixed window) that are set in a wooden rectangular frame. Access is through a side ramp framed by a stepped concrete block wall and landscaping in planters. The landscaping consists primarily of hedges that are set in a stepped pattern to reflect the design of the stepped wall. The east elevation features an unadorned wood door with inset window and a wood-framed double window. The second story features two multi-light wood-framed windows and a recessed entrance with access through a metal staircase.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #_____
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Trinomial_____

Page 3 **of** 13 ***Resource Name or #** (Assigned by recorder) Los Angeles County Fair Grandstand
***Recorded by:** URS Corp ***Date** October 2010 X **Continuation** __ **Update**

***P3a. (Continued)**

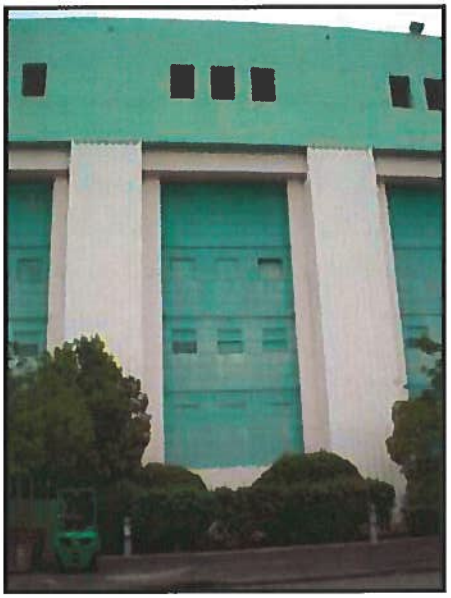
Grandstand Addition

The grandstand addition is between the original grandstand and the first aid section. It is connected to the first aid section by a one-story, flat roofed concession stand area to its south and also connected to the original grandstand to its north. The addition is roughly square in plan and is sited at an angle to the original grandstand, so that it would follow the race track's first turn.

It is four stories high, clad in concrete panels, and is in the mid-century modern style. The east elevation is open for tiered seating. It is covered by a steel roof overhang supported by steel beams with boomerang-shaped rafters. The overhang is lined by two shallow boomerang-shaped screens. The west elevation is composed of five bays and divided into three horizontal sections. The top horizontal section is cantilevered. The bays are divided by flat piers with curved corners that frame the bays and extend to support the cantilevered top section. The first story is recessed and framed by large flat piers with curved corners that narrow at the base. The northernmost bay is in-filled with geometric-patterned ceramic tile. Recessed within the first story are aluminum-framed entrances to the clubhouse and grandstand. The middle section is filled in by large, rectangular fixed windows covered by thin geometric-patterned copper screens within turquoise-colored metal frames. The concrete panels in the middle section are tinted in a pink shade. The cantilevered top section has a block of metal-framed windows (a row of casements with awning windows on top and fixed windows on the sides and bottom) within the middle three bays. Some of these windows have turquoise-shaded glass and some have dark-blue glass. Three small utility boxes are on the rooftop.



West Elevation of Original Grandstand



Detail of West Elevation of Original Grandstand

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Trinomial_____

Page 4 of 13 *Resource Name or # (Assigned by recorder) Los Angeles County Fair Grandstand
*Recorded by: URS Corp *Date October 2010 X Continuation __ Update

*P3a. (Continued)



East Elevation of Grandstand Addition (left) and Original Grandstand (right)
East Elevation of First Aid Section (lower left)



Entrance on the West Elevation of Original Grandstand



North Elevation of Original Grandstand



Number 24
Detail of Entry on Original Grandstand's Pier

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CONTINUATION SHEET

Primary #_____
HRI #_____
Trinomial_____

Page 5 of 13 *Resource Name or # (Assigned by recorder) Los Angeles County Fair Grandstand
*Recorded by: URS Corp *Date October 2010 X Continuation __ Update

*P3a. (Continued)



West and South Elevations of Grandstand Addition



Detail of West Elevation of Grandstand Addition, Cantilevered Top Story



South Elevation of Grandstand Addition and First Aid Building



South Elevation of First Aid Building

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HRI #_____

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 6 **of** 13 ***NRHP Status Code** 3S
***Resource Name or #** (Assigned by recorder) Los Angeles County Fair Grandstand
B1. Historic Name: Los Angeles County Fair Grandstand
B2. Common Name: Fairplex Park Grandstand
B3. Original Use: Grandstand
B4. Present Use: Grandstand and offices
***B5. Architectural Style:** Art Deco (original) and Mid-century Modern (additions)
***B6. Construction History:** (Construction date, alterations, and date of alterations)
In 1932, the original grandstand was constructed (*Los Angeles Times* 1932: A1). In 1954, a first aid station (originally a fire and first aid station) was built at the site of the original fire and first aid buildings (*Los Angeles Times* 1954, G2). This site was just south of the original grandstand. In 1964, a grandstand addition was built south of the original grandstand and north of the fire and first aid station (*Los Angeles Times* 1964, H1). The grandstand addition joined the original grandstand and the first aid station to create a grandstand complex. In 1986, the grandstand and clubhouse facilities were renovated (Fairplex 2010), but the specific work done is unknown. There are no apparent exterior alterations. After the name of the fairgrounds was changed to Fairplex in 1988, the words "Fairplex" were painted on the grandstand's roof.

***B7. Moved?** X No __Yes __Unknown **Date:** _____ **Original Location:** _____
***B8. Related Features:**
N/A

B9a. Architect: Karl Muck (original)
Unknown (first aid section)
Arthur Froehlich (addition)

b. Builder: C.T. and W. PI Stover (original)
Unknown (first aid section)
Jones Brothers Construction Co. (addition)

***B10. Significance: Theme** Architecture **Area** Pomona, Los Angeles County, CA
Period of Significance 1932 **Property Type** Grandstand
Applicable Criteria C (Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)
The historical significance of the Los Angeles County Fair Grandstand was determined by applying the procedure and criteria for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR).

Based on site investigations and historic research, the Los Angeles County Fair Grandstand does appear to possess the requisite significance to be eligible for listing on the NRHP and CRHR.

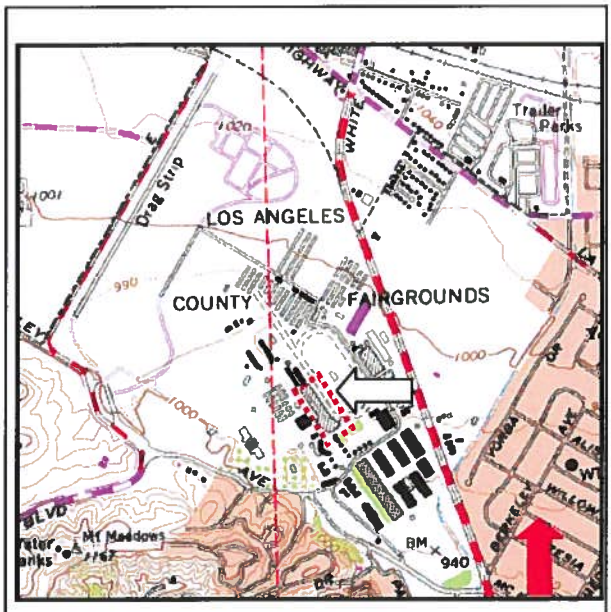
SEE CONTINUATION SHEET

B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**

SEE CONTINUATION SHEET

B13. Remarks: None
***B14. Evaluator:** URS Corporation
***Date of Evaluation:** October 2010

(This space reserved for official comments.)



San Dimas (1969) USGS Map N

*Required information

State of California — The Resources Agency
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CONTINUATION SHEET

Primary #_____
HRI #_____
Trinomial_____

***B10. (Continued)**

In 1920, L. R. Sheets proposed that the Los Angeles County Fair (fair) be held in Pomona. Five times previously there had been fairs organized in Los Angeles County, but they had been in different cities. Sheets promoted the idea for an annual fair to be held in Pomona (Hillinger 1950, B5). Sheets eventually became president of a non-profit organization named "Los Angeles County Fair." The overall purpose of the fair was to promote agriculture, horticulture, and animal care interest in the Southwest (Villafana 2004: 2).

In 1922, the City of Pomona chose a fairgrounds site, which was originally forty acres in the north part of the city, north of Ganesha Park (*Los Angeles Times* 1922: II15). The land was part of a grant given to two Mexican army officers, Ricardo Vejar and Ygnacio Palomares, in 1837. The City bought the land from the descendants of the Vejar family (Hillinger 1950, B5). The first fair was held from October 17-21, 1922. Attendance of more than 49,000 people surpassed all expectations and the fair was held for five days for the next five years. In 1928-1932, the fair was opened for six days. In 1933-1934, it was opened for ten days and then seventeen days starting in 1935 (Villafana 2004: 3). From the beginning, the fair was successful and continued to register large attendance numbers every year, setting the stage for more permanent facilities to be built on the site.

In 1928, Councilman C. B. Afflerbaugh proposed the development of a comprehensive plan for the Los Angeles County Fairgrounds. The plan included the first permanent buildings on a site that was now approximately 105 acres. Other details of the plan specified that the buildings were to face east, new roads were to be built, and that the fairgrounds were to be permanently landscaped (*Los Angeles Times* 1928: 10). Los Angeles County Architect Karl W. Muck designed the first permanent building, an exhibition building (also called an exposition building) which was opened for the 1929 fair. (*Los Angeles Times* 1928: 14).

In 1931, Muck presented the plans for the second permanent building, a grandstand that would seat 10,000. The old grand stand was demolished (*Los Angeles Times* 1931: 16). In 1932, construction started on the grandstand by general contractors C. T. and W. P. Stover. The stand was 420 feet long and also included four large exhibit rooms and restrooms. That same year, the City of Pomona transferred land to the County of Los Angeles, though the exhibition building was not included (*Los Angeles Times* 1932: A1).

During the Depression, attendance dropped. In 1933, pari-mutuel wagering was legalized in California and the fair became the first in Southern California to allow fans to bet on horse racing. In 1937, the Works Progress Administration constructed a fine arts building, an administration building, two other buildings, and a cafeteria that was named Anthony's and now named Avalon (Fairplex, "Our History: 1930," 2010). In 1941, attendance retumed to high levels and plans were created to add a mezzanine floor to the grandstand. Four tunnels lead from the main seating to the mezzanine floor. An electric "approximate odds" board was added to the wall at the west end of the mezzanine floor (*Los Angeles Times* 1941: A12).

World War II interrupted the fair schedule, when the Army took over the fairgrounds starting in December 14, 1941, a week after the bombing of Pearl Harbor (*Los Angeles Times* 1945, 2). After the bombing of Pearl Harbor by the Japanese, a wave of fear in the United States regarding the loyalties of Japanese Americans led to the idea that Japanese Americans that lived on the West Coast should be relocated to inland areas. Following Executive Order 9066 signed by President Franklin D. Roosevelt on February 19, 1942, thirteen temporary detention facilities (initially called "assembly centers") were hastily constructed in California at various racetracks, fairgrounds, and labor camps. Beginning in March 30, 1942, the Army ordered Americans with Japanese ancestry, which included those that were born in the United States and long-time legal residents, to report to the detention centers (California State Parks 1996, 107). In April, the Army ordered evacuees to immediately dispose of their personal property before they were to move to these detention centers (*Los Angeles Times* 1942d, 6). One of these assembly centers was at the fairgrounds in Pomona. In California, the other detention centers were in the following locations: the Santa Anita Racetrack in Arcadia, the Tulare County Fairgrounds in Tulare, the Pinedale Assembly Center in Fresno, the Fresno County Fairgrounds in Fresno, the Owens Valley Reception Center in Manzanar, the Merced County Fairgrounds in Merced, the Sherwood Gardens Rodeo Grounds in Salinas, Walerga Park in Sacramento, the Administration Building of the San Joaquin County Fairgrounds in Stockton, the Tanforan Park Shopping Center in San Bruno, the Stanislaus County Fairgrounds in Turlock, and the Yuba County Fairgrounds in Marysville (California State Parks 1996).

SEE CONTINUATION SHEET

State of California — The Resources Agency
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CONTINUATION SHEET

Primary #_____
HRI #_____
Trinomial_____

***B10. (Continued)**

In April 1942, temporary housing facilities for 5,000 evacuees were rushed into construction on 28-acres of the fairgrounds in Pomona. The city engineer also needed to find a way to create additional connections from the fairgrounds to the local sewage disposal plant that was already running at capacity. At this time, Japanese Americans from Downey and Lawndale were already evacuated to the Santa Anita Racetrack detention center and the deadline for evacuating 100,000 remaining Japanese Americans from the "Pacific Coast defense zone" was to be completed by May 15 (*Los Angeles Times* 1942c, A1). The first Japanese Americans arrived at the fairgrounds on May 8. They were housed in 420 prefabricated buildings and ate in eight mess halls that were situated on the west parking lot of the fairgrounds (*Los Angeles Times* 1942e, A1). More Japanese Americans arrived on May 10 to the fairgrounds (*Los Angeles Times* 1942a, A1). In general, most of them were from Los Angeles and Pomona, though 700 were from San Francisco. In August, the 5300 Japanese Americans at the fairgrounds were sent in groups of 600 per day to a permanent internment camp at Heart Mountain near Cody, Wyoming (*Los Angeles Times* 1942b, 12).

After the Japanese Americans left, the Army established the Pomona Ordnance Base there in September of 1942, which stocked ordnance materials for the California/Arizona Maneuver Area east of Pomona (California State Military Museum 2010). The Army also used the Fairgrounds to house German prisoners of war. Starting in March 11, 1945, the prisoners lived in a barbed-wire stockade within a parking area and worked six days a week as farm workers (*Los Angeles Times* 1945, 2). By March 1946, the prisoners of war had been relocated and the buildings that housed the prisoners were moved to Brooklyn Avenue and Mednick Street to be remodeled into residences for veterans and their families (*Los Angeles Times* 1946, A1).

In 1947, the Fair Association restored the fairgrounds to the 1941 conditions (*Los Angeles Times* 1947, A3). The detention center facilities were removed from the parking lot and the agriculture exhibition building destroyed by fire in 1941 was rebuilt (*Los Angeles Times* 1945, 2). The Los Angeles County Fair resumed on September 17, 1948. In addition to a new Palace of Agriculture, two new livestock pavilions and a Radio-Television Building were built (*Los Angeles Times* 1948a, B1). The parking lot was repaved and enlarged to a 30,000-automobile capacity (Los Angeles Times 1948b, A6).

Two additions to the grandstand were constructed. In 1954, a first aid station (originally a fire and first aid station) was built at the site of the original fire and first aid buildings (*Los Angeles Times* 1954, G2). This site was just south of the original grandstand. In 1964, a grandstand addition designed by architect Arthur Froehlich and constructed by Jones Brothers Construction Company was built south of the original grandstand and north of the fire and first aid station (*Los Angeles Times* 1964, H1). The grandstand addition joined the original grandstand and the first aid station to create a grandstand complex. Within the addition, two sets of escalators and elevator service led to a restaurant on the top floor (*Los Angeles Times* 1964, H1). In 1986, the grandstand and clubhouse facilities were renovated and the track was renamed Fairplex Park. In 1988, the name of the fairgrounds was changed to Fairplex to encourage year-round use as an exposition complex (Fairplex, "Our History: 1980," 2010).

Upon review of the site survey and historical research, the subject building does appear to meet the criteria of eligibility for inclusion on the NRHP and CRHR based on its current appearance and form, under Criterion C an d3 – Design/Construction. Initial research has yielded no information indicating an association with significant historic events or people (Criteria A/1 and B/2 of the NRHP/CRHR). The grandstand was one of the first permanent buildings on the site, but the most significant building to the history of the fairgrounds would be the Palace of Agriculture (exhibition hall), which was the main exhibition hall. Therefore, the grandstand complex is not the building that best depicts the history of the fairgrounds. While the fairgrounds were also associated with the Japanese American detention centers, the grandstand complex itself was not specifically associated with this history. The detention center buildings were removed and the site of the detention centers is what California Historical Landmark 934 commemorates. There are no physical buildings or structures associated with the California Historical Landmark designation. In addition, the grandstand complex is not specifically associated with a significant person in the city of Pomona or the history of the fairgrounds. The grandstand complex does significantly embody the distinctive characteristics of an architectural style, type or period or represent the work of a master (Criterion C/3 of the NRHP/CRHR). It significantly embodies the Art Deco style as applied to a grandstand. The major character defining features include the overall building's massing and form, decorative bands, geometric patterned cornices, and the tall piers. The mid-century modern additions do not significantly embody the mid-century modern style. Further, the mid-century modern additions from 1952 and 1964 (or other additions) do not diminish the character defining features of the historic Art Deco grandstand. Lastly, it does not have the potential to yield important information (Criterion D/4 of the NRHP/CRHR).

SEE CONTINUATION SHEET

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #_____
HRI #_____
Trinomial_____

*B10. (Continued)

In addition, in order for a property to be eligible for listing in the National or State Register, besides meeting one of the above criteria, it must also retain its historic integrity. The National Register traditionally recognizes a property's historic integrity through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association. In order for a property to be eligible, it must retain some, if not most, of the aspects. Location is defined as the place where the historic-period property was constructed or the place where the historic event took place. The subject property has not been moved; therefore, retains its integrity of location. Design is defined as the composition of elements that constitute the form, plan, space, structure, and style of a property. The 1954 and 1964 additions did reduce the design integrity of the original grandstand by destroying the original footprint and the original south elevation. However, the west elevation's design and entry detailing has been retained and this elevation is the character-defining feature. Therefore, the building has maintained its integrity of design. Setting is defined as the physical environment of a historic-period property that illustrates the character of the place. The building was built on the Los Angeles County fairgrounds. It retains its setting on the fairgrounds. Materials are defined as the physical elements combined in a particular pattern or configuration to form the aid during a period in the past. The additions have destroyed materials on the south elevation, but the materials on the other elevations have been retained. Therefore, the integrity of materials has been compromised by the additions, but enough original material remains to retain the integrity of materials. Workmanship is defined as the physical evidence of the crafts of a particular culture or people during any given period of history. The detailing in the modeme entrance and the bays of the original grandstand's west elevation retains physical evidence of the crafts of a given period of history. Feeling is defined as the quality that a historic-period property has in evoking the aesthetic or historic sense of a past period of time. The subject property retains its sense of feeling for an early-twentieth century grandstand. Association is defined as the direct link between a property and the event or person for which the property is significant. No significant events or persons are associated with the building so integrity of association was not evaluated. The building retains its integrity of design, materials, setting, workmanship, and feeling. As such, the grandstand complex does appear to be eligible for listing to the NRHP.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #_____
HRI #_____
Trinomial_____

***B12. (Continued)**

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California State Parks. *California Historical Landmarks*. Office of Historic Preservation, 1996.l

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Fairplex. "Our History: 1930" and "Our History: 1980." http://www.fairplex.com/fp/company/annualreports/ourhistory.html#, accessed October 22, 2010.

---------- "Event Planning." http://www.fairplex.com/fp/eventplanning/documents/FairplexMasterGroundsMap.pdf, accessed October 25, 2010.

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No Author. 1922. "Pomona Call Accepted by Missionary." *Los Angeles Times*, April 29.

---------- 1928. "Fairgrounds Plan Set." *Los Angeles Times*, August 16.

---------- 1942a. "Army Orders Evacuation of 3900 Japanese." *Los Angeles Times*, May 10.

---------- 1942b. "Japanese to Leave Pomona Fairground." *Los Angeles Times*, August 7.

---------- 1942c. "Japs Leave Downey and Lawndale Tomorrow." *Los Angeles Times*, April 12.

---------- 1942d. "Pomona Fairgrounds to Be Jap Center." *Los Angeles Times*, April 6.

---------- 1942e. "Population of Santa Anita Japanese Center Now 13,000." *Los Angeles Times*, May 7.

---------- 1945. "Fate of 1946 County Fair Uncertain With Germans Billeted on Grounds." *Los Angeles Times*, November 11.

---------- 1946. "Housing Aid Project Begun." *Los Angeles Times*, March 15.

---------- 1947. "Los Angeles County Fair Won't Be Held This Year." *Los Angeles Times*, February 8.

---------- 1948a. "County Promised Its Greatest Fair." *Los Angeles Times*, August 9.

---------- 1948b. "Work Speeded on Elaborate Fair Building." *Los Angeles Times*, September 5.

---------- 1954. "Fairgrounds Fire Station Will Be Built for $85,000." *Los Angeles Times*, March 28.

---------- 1964. "Fair Grounds to Get New Grandstand." *Los Angeles Times*, January 23.

Villafana, Ana. 2004. "Los Angeles County Fair." Paper for HIST 389 Class at the University of La Verne. http://faculty.ulv.edu/~marcusk/student%20research/villafana_lacountyfair.htm, accessed October 22, 2010.

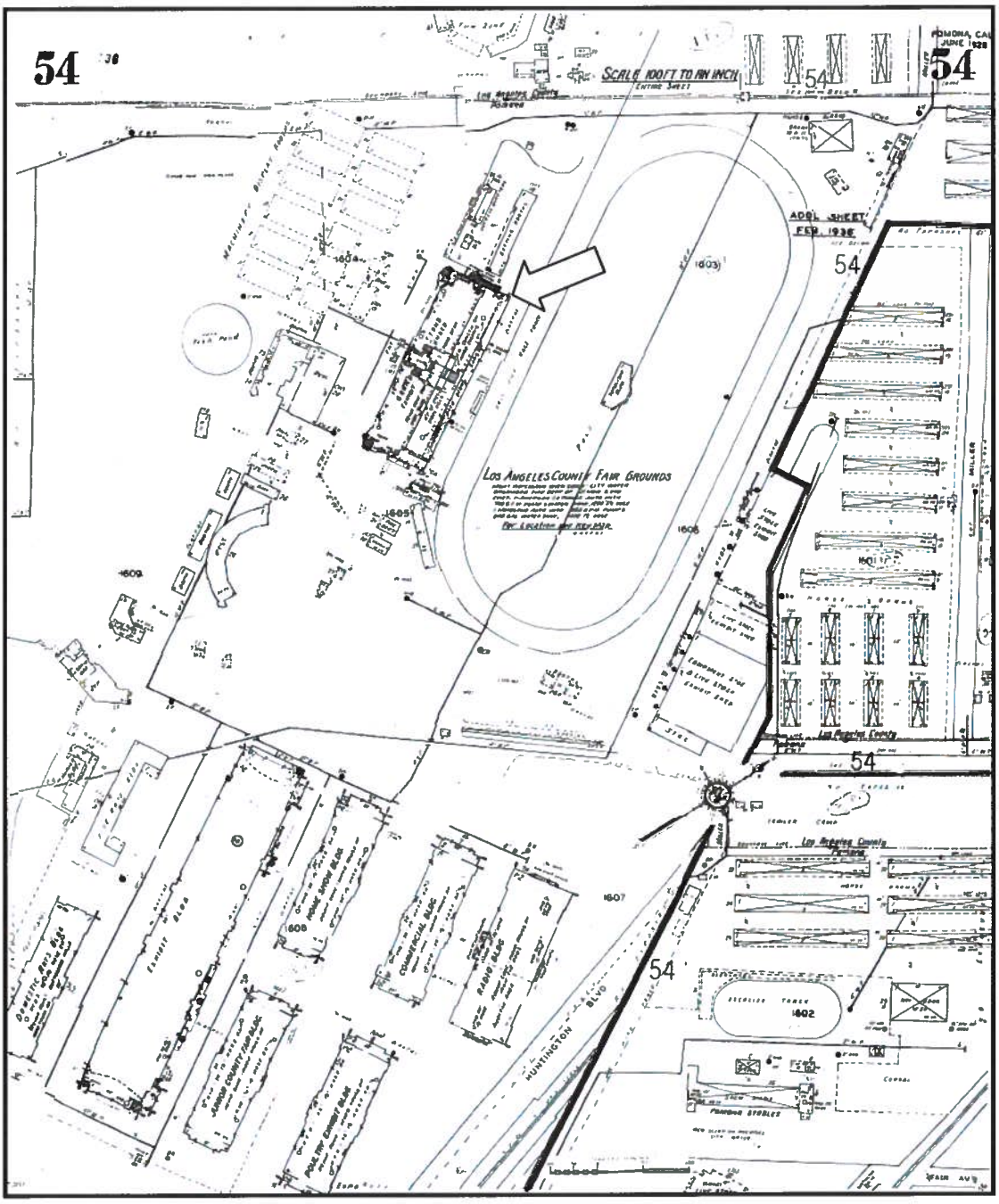
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #_____
HRI #_____
Trinomial_____

Page 11 of 13 *Resource Name or # (Assigned by recorder) Los Angeles County Fair Grandstand
*Recorded by: URS Corp *Date October 2010 X Continuation __ Update

*B10. (Continued)

Sanborn Fire Insurance Map, June 1928-Sept.1950, Sheet 54



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

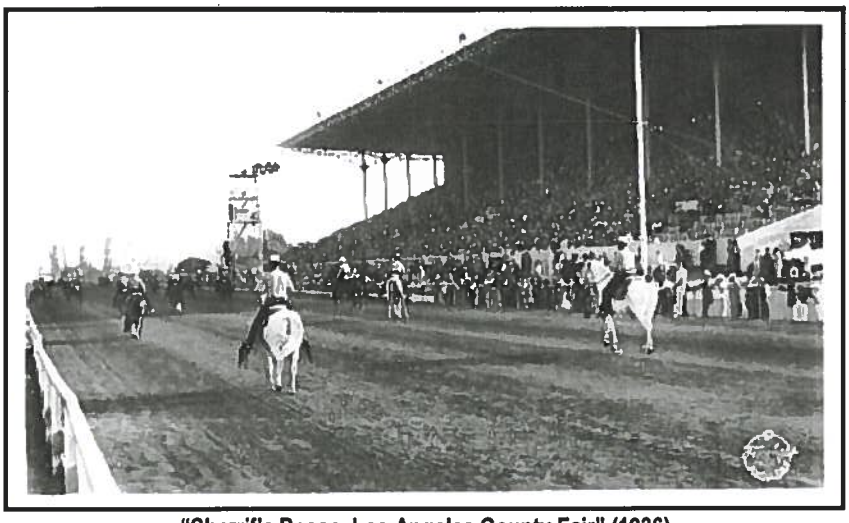
Primary #_____
HRI #_____
Trinomial_____

*B10. (Continued)

Pomona Public Library, Frasher Foto Postcard Collection



"View from Grandstand, Los Angeles County Fair, Pomona, California" (1932)
Photographer Burton Frasher



"Sherrif's Posse, Los Angeles County Fair" (1936)
Photographer Burton Frasher

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #_____
HRI #_____
Trinomial_____

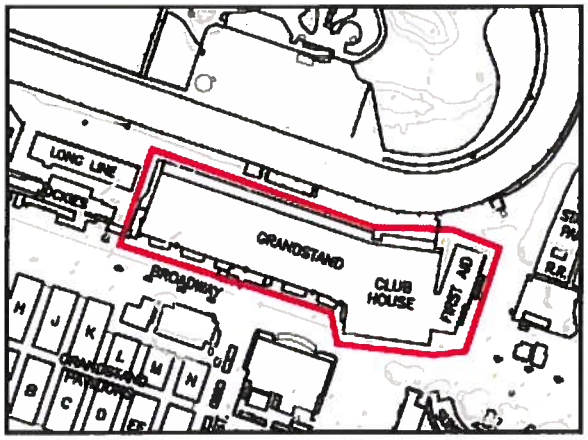
Page 13 of 13 *Resource Name or # (Assigned by recorder) Los Angeles County Fair Grandstand
*Recorded by: URS Corp *Date October 2010 X Continuation __ Update

*B10. (Continued)

Pomona Public Library, Frasher Foto Postcard Collection



"Los Angeles County Fair, Pomona, America's Largest, Most Beautiful County Fair" (1950)
Photographer Burton Frasher, (Grandstand is in center and top of postcard)



Fairplex Master Grounds Map, Grandstand Complex
Grandstand (original), Clubhouse (Grandstand Addition), and First Aid Section
(Fairplex, "Event Planning," http://www.fairplex.com/fp/eventplanning/documents/FairplexMasterGroundsMap.pdf, accessed October 25, 2010.)

19-188036

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code 6Z
Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 of 3 Resource Name or #: 1737 West Holt Avenue

P1. Other Identifier: Western Mobile Garden Trailer Park
*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County: Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad: San Dimas Date: San Dimas T 1S ; R 9W ; of Sec unsectioned ; S.B.B.M.
c. Address: 1737 West Holt Avenue City: Pomona Zip: 91766
d. UTM: Zone: 11; _____mE/ _____mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 8355-017-003 and 8355-018-010; location on the north side of West Holt Avenue, east of Erie Street.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Western Mobile Garden Trailer Park is located northwest of downtown Pomona in an area characterized by residential, commercial, and office uses. The park has a circular drive that loops through the property with 3 permanent buildings (1A, 1B, and 1C) and trailers of varying ages, sizes, and styles along the perimeter and a permanent office/laundry building (1D) and trailers in the center of the loop. The modest, Vernacular permanent buildings include a residence (1A), a detached garage (1B), an office (1C) that houses Pierce Consulting, Inc, and an office/laundry building (1D).

The residence (1A) has a low-pitched hipped roof with small gabled vents at the peaks and moderate eaves with exposed rafter tails. The exterior walls are clad with stucco and the fenestration consists predominantly of wood-framed double-hungs and metal casement windows. A picket fence atop a low retaining wall surrounds the yard. The detached garage (1B) has a medium-pitched gable roof, is clad with stucco, and has an off-center garage door.

The consultant's office building (1C) is also constructed of cinder blocks, but it has a shed roof and features a painting on the façade that depicts Old West cowboys. Below the eaves on the façade and sides of the building there are decorative vertical boards with pointed ends. There is a small, projecting gable roof supported by two wood braces over the main wood and glass entry door. Fenestration consists primarily of wood-framed double-hung windows. It appears that some alterations have been made to the rear of the building.

The cinder block office/laundry building (1D) is surmounted by a medium-pitched, side-gable roof. It has wood-framed double-hung windows and what appear to be the original doors.

*P3b. Resource Attributes: (List attributes and codes) HP39-Other (mobile trailer park)
*P4. Resources Present: ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #) Residence (1A); view to the northeast (2/13/07) *(See Continuation Sheet)*

*P6. Date Constructed/Age and Sources: ☒Historic ☐Prehistoric ☐Both
Ca. 1955

*P7. Owner and Address:
Unknown

*P8. Recorded by: (Name, affiliation, and address)
Riordan Goodwin and Casey Tibbet, LSA Associates, Inc., 1500 Iowa Avenue, Suite 200, Riverside, CA 92507

*P9. Date Recorded:
February 2007

*P10. Survey Type: (Describe):
Intensive-level CEQA compliance

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Cultural Resources Assessment, 1737 and 1753 West Holt Avenue, City of Pomona, Los Angeles County, California, March 9 2007, prepared by Casey Tibbet, M.A.

*Attachments: ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

19-188036

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # _____
HRI# _____

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

*Resource Name or # (Assigned by recorder) 1737 West Holt Avenue

B1. Historic Name:

B2. Common Name: Western Mobile Garden Trailer Park

B3. Original Use: Trailer park **B4. Present Use:** Trailer park

***B5. Architectural Style:** Vernacular

***B6. Construction History:** (Construction date, alterations, and date of alterations)
No original building permits were found for this property, however, the Los Angeles County Assessor's online records indicate that buildings were constructed in 1926, 1935, and 1947, but this could not be substantiated.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** _____ **Original Location:** _____

***B8. Related Features:**
Numerous trailers

B9a. Architect: Unknown **b. Builder:** Unknown

***B10. Significance: Theme:** Early to mid-20th century residential/recreational development **Area:** City of Pomona
Period of Significance: Ca. 1955 **Property Type:** Trailer Park **Applicable Criteria:** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)
The buildings at the trailer park do not appear to meet any of the criteria for listing in the National Register or California Register. Under Criteria A/1, no evidence was found to indicate that the trailer park was associated with any events significant in national, state, or local history. Under Criteria B/2, no evidence was found indicating that the trailer park was associated with any important persons in national, state, or local history. Under Criteria C/3, the modest permanent buildings on the property do not exhibit the characteristics of any particular architectural style and do not appear to have been designed or constructed by a noteworthy architect or builder. Further, there are thousands of similar buildings in Pomona and the southern California region. Under Criteria D/4, which related primarily to archaeological resources, the buildings do not appear to have the ability to answer important questions in prehistory or history. For the same reasons, the buildings do not appear to meet any of the criteria for local designation.

B11. Additional Resource Attributes: (List attributes and codes) HP39-Other (trailers)

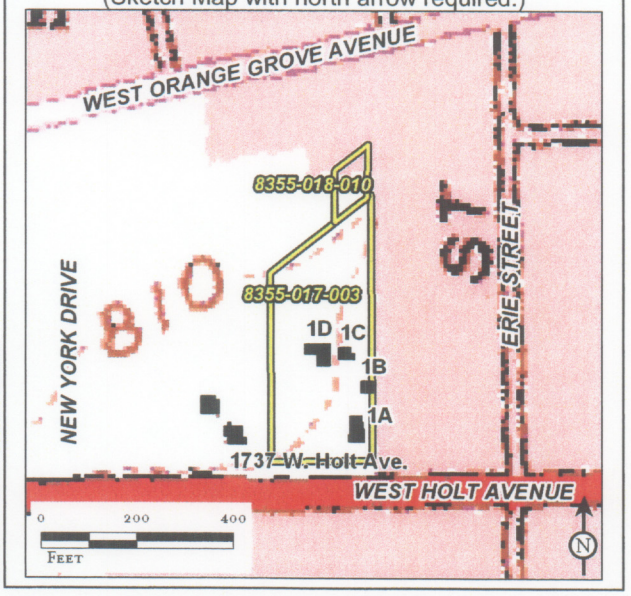
***B12. References:**
Pomona City Directory, 1900-1965. On file, California Room, Pomona Public Library.
Betty Peters, library volunteer, oral communication March 2007
Mickey Galvin, Pomona Valley Historical Society, oral communication, March 2007.
Mr. Rodriguez, Western Mobile Garden Trailer Park resident, oral communication, March 2007.

B13. Remarks:

***B14. Evaluator:** Casey Tibbet, M.A., LSA Associates, Inc., 1500 Iowa Avenue, Suite 200, Riverside, CA 92507

***Date of Evaluation:** February 2007

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

19-188036

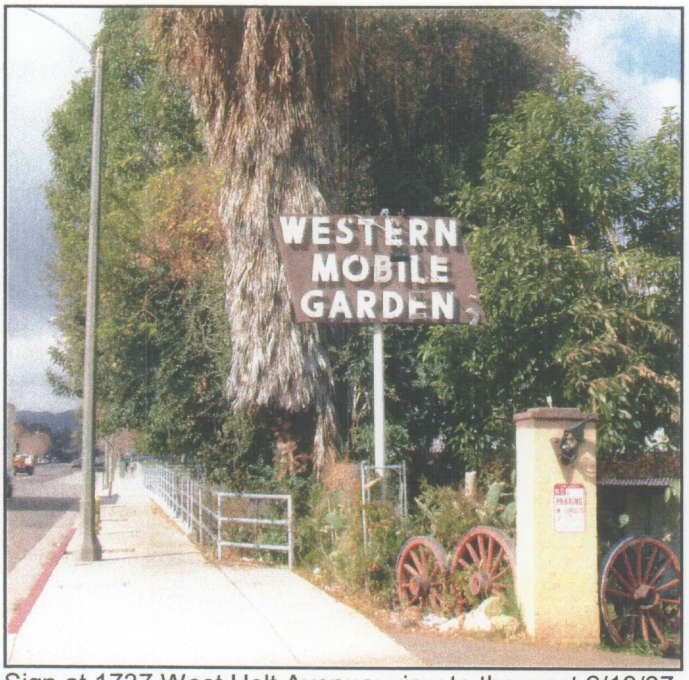
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

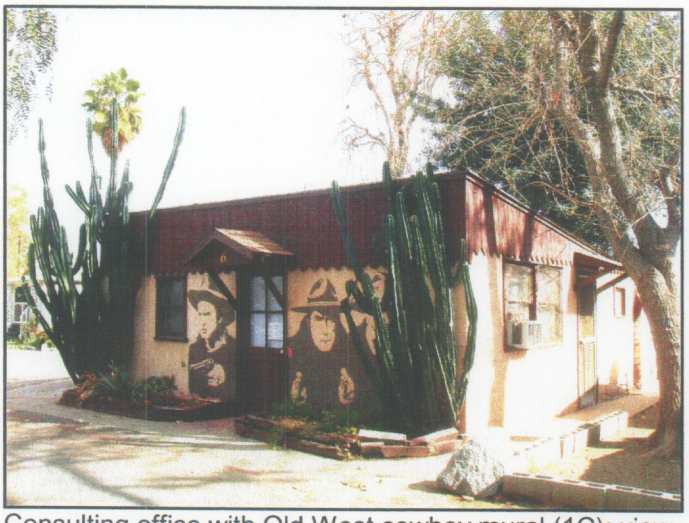
Page 3 of 3 *Resource Name or #: (Assigned by recorder) 1737 West Holt Avenue
*Recorded by Rory Goodwin, LSA Associates *Date: February 2007 X Continuation _____ Update

P5a. Photo or Drawing.



Sign at 1737 West Holt Avenue; view to the west 2/13/07


Garage (1B) and double-wide trailer; view to the northeast 2/13/07


Consulting office with Old West cowboy mural (1C); view to the northeast 2/13/07


Laundry/office (1D); view to the west-northwest 2/13/07

19-188037

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code 6Z
Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 of 2 Resource Name or #: 1753 West Holt Avenue

P1. Other Identifier: _____

*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County: Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: San Dimas Date: 1966 PR 1981 T 1S ; R 9W ; of Sec unsectioned ; S.B.B.M.

c. Address: 1753 West Holt Avenue City: Pomona Zip: 91766

d. UTM: Zone: 11; _____mE/ _____mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 8355-017-002; located on the north side of West Holt Avenue, east of Erie Street.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
This very nondescript, one-story Vernacular residence sits below street grade on an approximately 1.31-acre parcel with minimal landscaping and improvements. It is irregular in plan and surmounted by a low-pitched hipped roof. The south and west elevations consist of plain stucco walls with no openings. The east elevation includes three metal-framed windows and a door and the north (rear) elevation also has metal-framed windows. A detached shed constructed of plywood is located north of the residence. The property is secured by a chain link fence and gate.

*P3b. Resource Attributes: (List attributes and codes) HP2-Single-family residence

*P4. Resources Present: ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #) View to the northwest; February 2, 2007

*P6. Date Constructed/Age and Sources: ☒Historic ☐Prehistoric ☐Both
Ca. 1955

*P7. Owner and Address:
Unknown

*P8. Recorded by: (Name, affiliation, and address)
Riordan Goodwin and Casey Tibbet, LSA Associates, Inc., 1500 Iowa Avenue, Suite 200, Riverside, CA 92507

*P9. Date Recorded:
February 2007

*P10. Survey Type: (Describe)
Intensive-level CEQA compliance

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Cultural Resources Assessment, 1737 and 1753 West Holt Avenue, City of Pomona, Los Angeles County, California, March 9 2007, prepared by Casey Tibbet, M.A.

*Attachments: ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

19-188037

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # _____
HRI# _____

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

*Resource Name or # (Assigned by recorder) 1753 West Holt Avenue

B1. Historic Name:

B2. Common Name:

B3. Original Use: Residence **B4. Present Use:** Residence

***B5. Architectural Style:** Vernacular

***B6. Construction History:** (Construction date, alterations, and date of alterations)
No original building permits were found for this building, however the Los Angeles County Assessor online records indicate the residence was constructed in 1954. This could not be substantiated.
1963 demolition permit for a shed
1982 demolition permit for a house

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** _____ **Original Location:** _____

***B8. Related Features:**
Small plywood shed, date unknown.

B9a. Architect: Unknown **b. Builder:** Unknown

***B10. Significance: Theme:** Post-World War II residential development **Area:** City of Pomona
Period of Significance: 1954 **Property Type:** HP2-Single-family property **Applicable Criteria:** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)
The residence does not appear to meet any of the criteria for listing in the National Register or California Register. Under Criteria A/1, no evidence was found to indicate that the residence was associated with any events significant in national, state, or local history. Under Criteria B/2, no evidence was found indicating that the residence was associated with any important persons in national, state, or local history. Under Criteria C/3, the nondescript residence does not exhibit any characteristics of a particular architectural style and does not appear to have been designed or constructed by a noteworthy architect or builder. Further, there are thousands of similar buildings in Pomona and the southern California region. Under Criteria D/4, which related primarily to archaeological resources, the building does not appear to have the ability to answer important questions in prehistory or history. For the same reasons, the residence does not appear to meet any of the criteria for local designation.

B11. Additional Resource Attributes: (List attributes and codes)

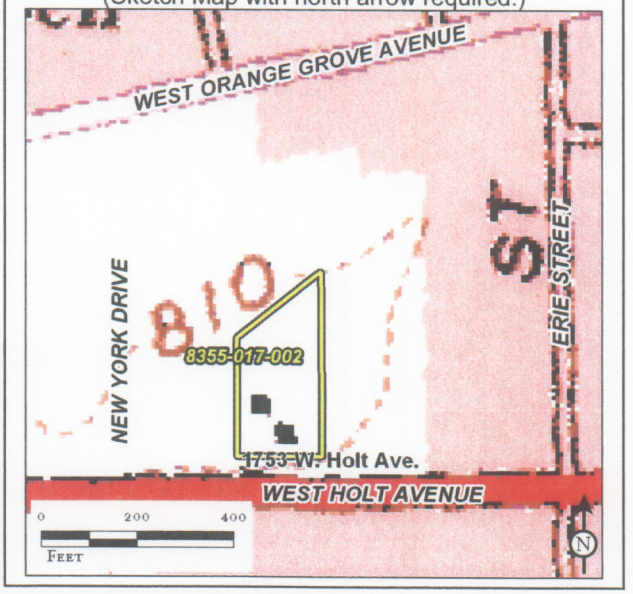
***B12. References:**
Pomona City Directory, 1900-1965. On file, California Room, Pomona Public Library.
Betty Peters, library volunteer, oral communication March 2007
Mickey Galvin, Pomona Valley Historical Society, oral communication, March 2007.

B13. Remarks:

***B14. Evaluator:** Casey Tibbet, M.A., LSA Associates, Inc., 1500 Iowa Avenue, Suite 200, Riverside, CA 92507

***Date of Evaluation:** February 2007

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 19-188186
HRI#
Trinomial
NRHP Status Code 3S

Other Listings
Review Code _____ Reviewer _____ Date _____

Page 1 of 7 **Resource Name or #: LA60XC010A - Sprint Telecommunications Facility Candidate**

P1. Other Identifier:
P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** Los Angeles
and (P2b and P2C or P2d. Attach a Location Map as necessary.)
b. USGS 7.5' Quad San Dimas **Date** 1978 **T** 1S; **R** 8W; ¼ **of** ¼ **of Sec** ; San Bernardino **B.M.**
c. Address 875 W ORANGE GROVE AVE City Pomona Zip 91768
d. UTM: Zone 11 ; 429222 mE/ 3769940 mN
e. Other Locational Data: Tract #18030 Lots 32, 33 and Lot 34; APN #8358-009-006

P3a. Description:
The property contains a one-story church building with an irregular U-shaped plan and wood-frame construction. The building has a steeply-pitched gable roof with asphalt shingles and slightly flared eaves. The exterior walls have an original smooth stucco finish. The building's U-shape plan faces Orange Grove Avenue to the south and is comprised of three principal massings. The oldest massing, erected in 1948-49, is formed by the church's central and eastern sections.

Designed in a modernistic English Gothic Revival style, the church's central and eastern sections form what was once the original church building. The building's eastern wing originally contained the church sanctuary. A decorative tripartite stained-glass window with gothic arches is centered in the south elevation of this section above a non-original sign with a brick base, constructed in 1961. Pairs of regularly spaced twelve-over-twelve double-hung sash windows punctuate the wing's west elevation, which is further characterized by a heavy stylized red brick chimney. A series of projecting side-gabled sections define the building's east elevation, as does an original recessed door opening fit with an original panel door with simple Gothic Revival details. A one-story

(See Continuation Sheet)

P3b. Resources Attributes: 16 Religious Building
P4. Resources Present: ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other



P5b. Description of Photo:

P6. Date Constructed/Age and Sources: ☒ Historic ☐ Both ☐ Prehistoric
1948/1959-63 (F) Building Permits

P7. Owner and Address:
Ponoma Fellowship Church
875 W Orange Grove Ave
Pomona, CA 91768

P8. Recorded by:
Christopher J. Hetzel
619 E Elmwood Ave #G
Burbank, CA 91501

P9. Date Recorded: 3/8/2004

P10. Survey Type:
Section 106 Compliance Project Review

P11. Report Citation: None.

Attachments: ☐ NONE ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other:

P3a. Significance, continued:

classroom addition, constructed in 1952, is located behind the east wing at the building's northeast corner. It has a flat roof and is characterized by regularly spaced pairs of double-hung sash windows on the east and west elevations.

The building's center section is symmetrically divided and maintains the same character and scale as the east wing. A prominent front-gable projects from the center of the section's south facade to form a canopy over the church's front entrance, which is comprised of a pair of framed-glass double doors. The gable end contains decorative half-timbering, wide fascia, and faux trusses that form a stylized gothic arch. Above the gable, a tall three-tiered revival style spire stands at the roof ridge. The spire has a hexagonal shape and is topped by a ornate iron cross. The facade is further characterized by wide overhanging eaves that form a recessed walkway across the entire elevation. To the east of the main entrance, the walkway is partially enclosed by a red brick masonry wall supporting a series of bracketed wood columns that provide the appearance of an arched colonnade. To the west of the entrance, the walkway has been altered to form a non-original entrance that leads into the the building's west wing.

The building's west wing contains the church's present sanctuary, which was constructed as an addition to the original building in 1959-63. The overall height of the west wing is higher than that of the rest of the building, but it is connected to the church's center section by a much shorter space. The sanctuary's south elevation features two recessed window wells that are vertically placed in the exterior wall. These wells are clad with brick and punctuated by a series of rectangular window openings. The south elevation is further characterized by a metal cross on a rectangular pedestal at the peak of the gable. The sanctuary's east elevation is similarly punctuated by regularly spaced vertical three-light window openings that have red brick surrounds and are separated by decorative masonry buttresses. The elevation also features a side entrance and two pairs of vertical window openings fit with fixed windows with diamond shaped mutins.

BUILDING, STRUCTURE, AND OBJECT RECORD

NRHP Status Code 3S

Resource Name or #: LA60XC010A - Sprint Telecommunications Facility Candidate

B1. Historic Name: Pomona Church of the Brethren
B2. Common Name: Pomona Fellowship Church
B3. Original Use: Church
B4. Present Use: Church
B5. Architectural Style: Modern English Gothic Revival
B6. Construction History:

B7. Moved? ☒ No ☐ Yes ☐ Unknown **Date:** **Original Location:**
B8. Related Features:

B9a. Architect: E. Lepelin Spring, C.E./Frick & Frick **b. Builder:** Unknown/Edwards Construction Company
B10. Significance: Theme Religious Architecture **Area** Pomona, CA
Period of Significance 1948/1959-63 **Property Type** Church **Applicable Criteria** C

The existing building at 875 Orange Grove Avenue is comprised of at least three documented phases of construction, each completed at a different time. The original church building was erected by the Pomona Church of the Brethren in 1948 and completed in 1949. According to city building permits, the building was designed by civil engineer E. Lepelin Spring and constructed by the church itself. The church subsequently constructed two large additions to the building in 1952 and 1959-1963, respectively. In 1952, the church added a 52' x 44' classroom wing to the rear of the structure using day workers. In 1959, construction began on the church's existing sanctuary, which today comprises the building's west wing. Architects Frick & Frick of Pasadena designed the sanctuary addition, while the Edwards Construction Company, a local contractor, built the structure. The 8,252 square foot sanctuary was completed in 1963.

(See Continuation Sheet)

B11. Additional Resource Attributes: 16 Religious Building

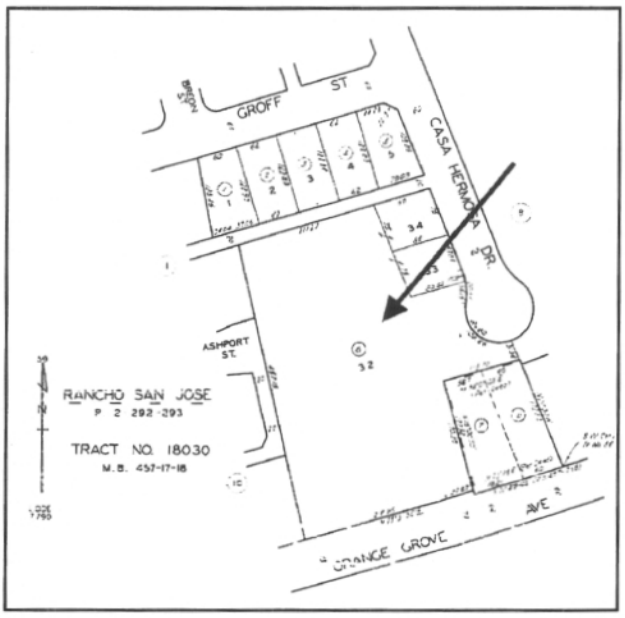
B12. References:

(See Continuation Sheet)

B13. Remarks:

B14. Evaluator: Christopher J. Hetzel
Date of Evaluation: 3/8/2004

(This space reserved for official comments.)



B10. Significance, continued:

The property appears to be in good condition. Its integrity is fair because of the several additions added to the original building, and the alteration of some original windows. The form of the original 1948 church was effected by the addition of the 1952 classroom addition at the rear of the building and the completion of the present sanctuary in 1963. However, these additions were designed to be relatively sensitive to the architectural style and form of the original structure. Although they significantly changed the structure's overall plan and massing, the integrity of the original church building appears to remain essentially unaltered.

The property has been evaluated according to the eligibility criteria for listing in the National Register of Historic Places. It was evaluated under National Register Criterion A for its association with events that have made a significant contribution to the broad patterns of our history. The church is associated with a national religious denomination known as the Church of the Brethren. First introduced to the area with the founding of the University of La Verne in 1891, the denomination is now represented by a large number of churches in surrounding communities and throughout Southern California. The Pomona church does not appear to hold special significance relative to these other congregations and their church buildings.

The property was evaluated under National Register Criterion B for its association with the lives of persons significant in our past. None of the people who have owned or are otherwise associated with the property appear to be significant.

The property was evaluated under National Register Criterion C for embodying the distinctive characteristics of a type, period, or method of construction, or representing the work of a master, or possessing high artistic values, or representing a significant and distinguishable entity whose components may lack individual distinction. The property is characterized by modernistic application of the English Gothic Revival style to the original church building and the modern style elements present in the 1963 addition. These characteristics make the church architecturally distinctive, especially when placed in context of the surrounding community. The church is located in a residential neighborhood, and appears to be one of only a few examples of the Gothic Revival style in a mid-century wood-frame religious building that exists in the area. The structure also contains a number of artistic decorative elements, including original stained glass windows. Although the building is associated with named architects and builders, there is no evidence to suggest that these individuals are significant.

The property was evaluated under Criterion D for the potential to yield, or may likely to yield, information important to prehistory or history. For the property to be eligible under this criterion, it would need to be, or have been, the principal source of important information. This is not the case with this property.

Despite apparent non-original additions, the integrity of the original building remains essential unaltered, retains its original use, and continues to be a prominent landmark in the area. Based on our review, the property appears to be potentially eligible for individual listing in the National Register of Historic Places under Criterion C for its distinctive architectural character. Therefore, it should be considered a historic property under the provisions of Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations, 36 CFR Part 800.

B12. References, continued:

City of Pomona Building Permits
Los Angeles Tax Assessor Archives
Los Angeles Public Library Collections
Los Angeles Times Historical Newspaper Archive
Sanborn Fire Insurance Maps

Photographs of the Subject Property:



East Elevation, Looking Northwest



South Elevation, Looking Northwest



South Elevation, Looking Northwest



South Elevation/East Wing, Looking North



East Elevation/West Wing, Looking West



South Elevation/Center Section, Looking North

Photographs of the Subject Property, Continued:



South Elevation, Looking Northeast



South Elevation, Looking Northeast



South Elevation/West Wing, Looking Northwest



East Elevation/West Wing, Looking Northwest



West Elevation/East Wing, Looking East



South Elevation/Center Section, Looking North

Photographs of the Subject Property, Continued:



West Elevation/East Wing, Looking Northeast



South Elevation/East Wing, Looking North



East Elevation/East Wing, Looking West



East & North Elevation, Looking Southwest

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI # 166120
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Sandra Campbell, Senior Planner (contract) Date 6/11/07

 *Resource Name or #: 8357-009-008 / Garcia/991 Huntington

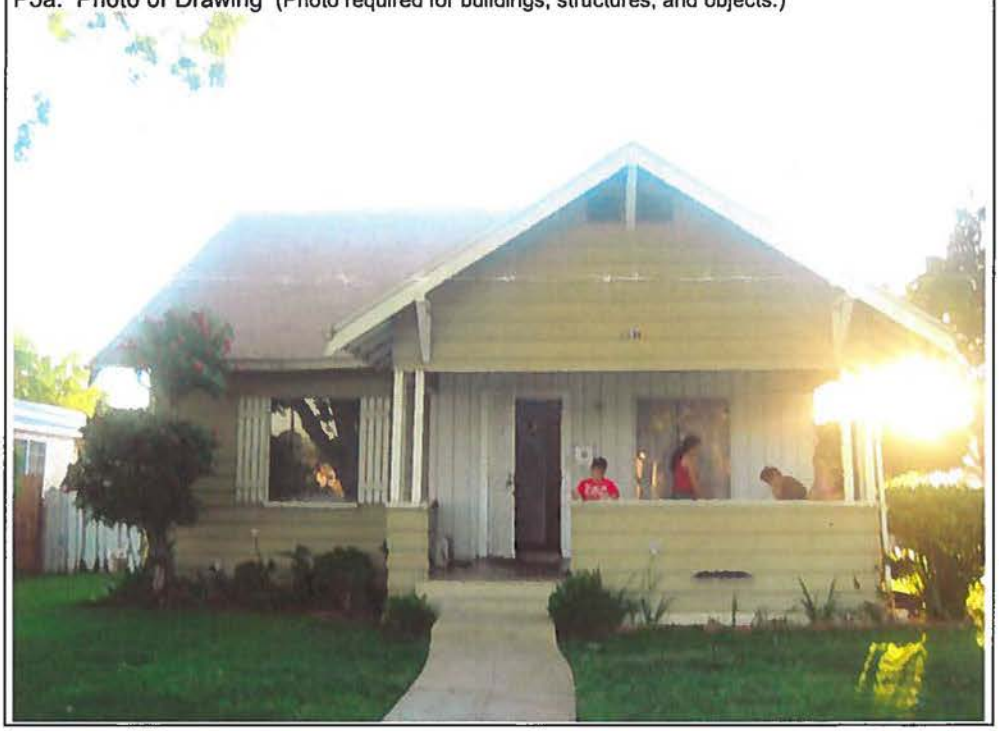
P1. Other Identifier:
*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County: Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad: San Dimas Date: T ; R ; ¼ of ¼ of Sec ; M.D. B.M.
c. 991 N. Huntington Blvd. City: Pomona Zip: 91768
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The building is a single-story single-family residence built in 1923 per Los Angeles County Assessor's records. The residence is an example of a Craftsman bungalow style of architecture. The building sites on a raised foundation and has an irregular plan. The exterior siding extends over the foundation material so that it is not visible. A cross-gable roof shelters the building. The roof is covered with composition shingles and has a wide overhang, exposed rafter ends, and triangular knee braces under the gable ends. There is a partial width front porch that is sheltered by a gable roof extending from the main roof. The porch roof is supported by two columns on either side that consist of two square wood posts that sit on a railing clad with exterior aluminum siding. The exterior is covered with wood aluminum siding that is not original to the building. Windows have been replaced with non-historic aluminum windows. The two front windows are aluminum fixed-frame style. The original wood window frames are missing and were most likely removed with the application of the aluminum siding.

There is a detached single-car garage behind the home at the rear of the property that was probably buildt at the same time because the style reflects that of the residence and the garage retains the original wood siding. The residence sits behind a modest front yard that has a concrete walkway leading directly from the street to the front porch. The home appears to be in good condition.

*P3b. Resource Attributes: (List attributes and codes) HP2
*P4. Resources Present: ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #)
Front elevation photo taken 5/2007.

*P6. Date Constructed/Age and Sources: ☒Historic ☐Prehistoric ☐Both
Constructed in 1923. (LA County Assessor records)

*P7. Owner and Address:

*P8. Recorded by: (Name, affiliation, and address)
Sandra Campbell
Contract Planner
City of Pomona
505 S. Garey Ave.
Pomona, CA 91769

*P9. Date Recorded: 6/11/07
*P10. Survey Type: (Describe)
Reconnaissance for purpose of evaluating building for HUD-funded project.

*P11. Report Citation: Marsh, Diann. Pomona *Historic Resources Survey,* 1994; Heritage Architectural and Planning, *City of Pomona Focused Survey of Potential 1945-1954 Historic Districts,* 2004

*Attachments: ☐NONE ☐Location Map ☐Sketch Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

*Resource Name or #: 8357-009-008 / Garcia/ 991 Huntington Blvd., Pomona, CA

B1. Historic Name: **991 N. Huntington Blvd., Pomona, CA**
B2. Common Name: 991 N. Huntington Blvd., Pomona, CA
B3. Original Use: Single-family residential B4. Present Use: Single-family residence

***B5. Architectural Style:** Craftsman bungalow

***B6. Construction History:** (Construction date, alterations, and date of alterations) The home was originally constructed in 1923 (LA County Assessor records) and has the following buildingpermits on file at the city of Pomona:

- 1975 – Installation of aluminum siding

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:** None
B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme:** **Area:** Northwest quadrant of city
Period of Significance: **Property Type:** residential **Applicable Criteria:** None
B11. Additional Resource Attributes: None

***B12. References:** McAlester and McAlester, *A Field Guide to American Houses,* 2004; Marsh, Diann. Pomona *Historic Resources Survey,* 1994; Heritage Architecture & Planning, *City of Pomona Focused Survey of Potential 1945-1954 Historic Districts,* 2004

B13. Remarks: A lead paint remediation project is proposed for this building that involves exterior paint, paint stabilization, friction and impact treatment to doors and windows, and window replacement. The home does not have historic significance as a stand alone historic landmark in that it does not meet the National Register evaluation criteria or the local criteria for designation as a standalone historic resource or as contributor to a historic district. The home is a modest example of a Craftsman bungalow dating from the early 20th century and has major alterations that affect its integrity that include replacement of original wood siding with alumunium siding, replacement of original wood sash windows with aluminum windows, and removal of the wood window frames. The alterations disqualify it as a contributor to a historic district. The 1994 citywide survey lists the home as "NA" (building alterations prevent it from contributing to historic streetscape) and "R" (altered builing that could become a contributor if alterations reversed) because of the major alterations.

The residence has no known association with persons or events important in local, California, and national history, and, therefore, does not meet the National Register criteria A or B. The residence is also not eligible under criteria C because of the loss of integrity due to the alterations. The residence also does not qualify under criteria D. Therefore, the proposed project would not have an effect on an historic resource.

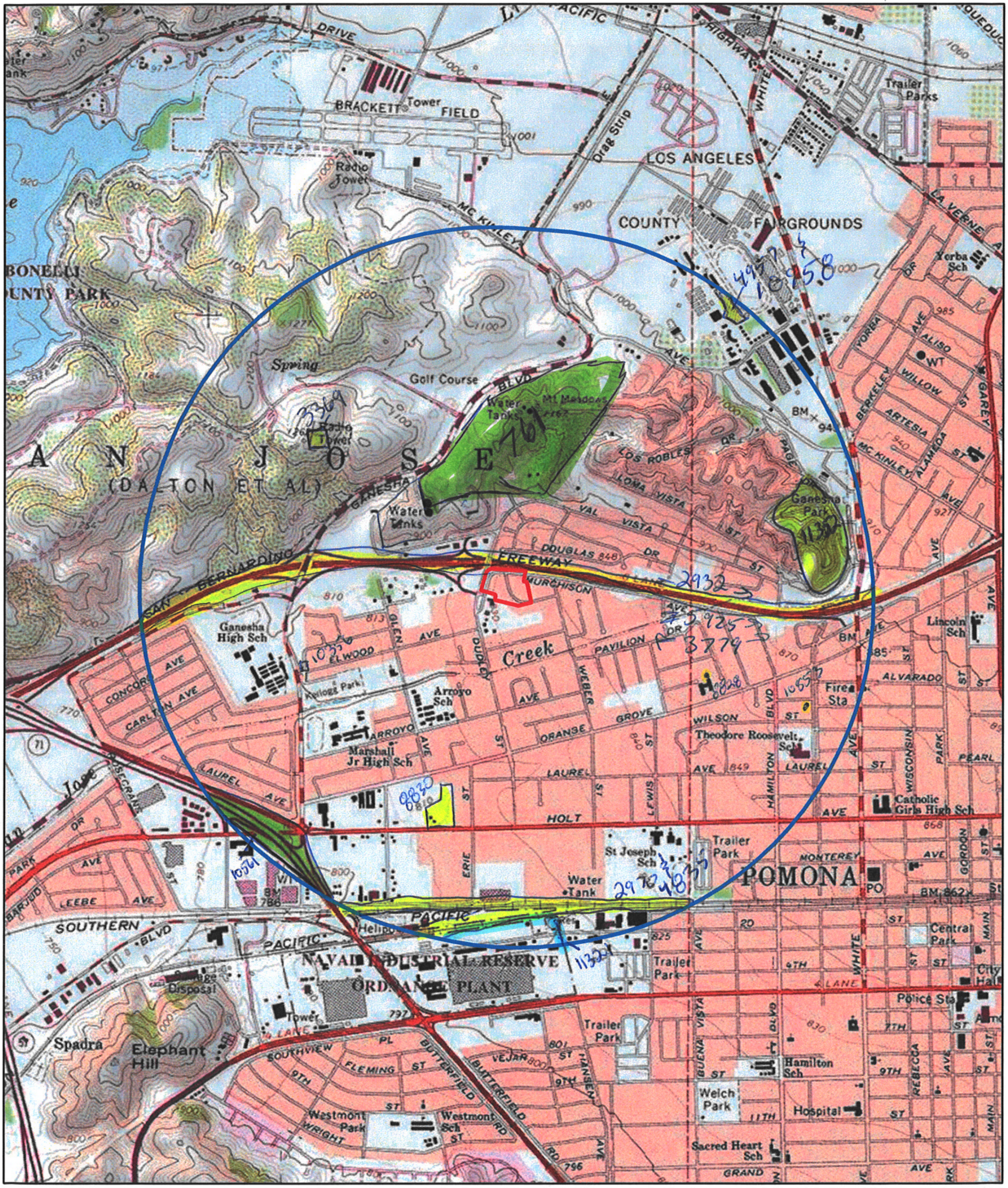
***B14. Evaluator:** Sandra Campbell, Contract Senior Planner, City of Pomona

***Date of Evaluation:** 6/11/07



(This space reserved for official comments.)

*Required information



Project

mile_radius

AJG BFSA: 10/11/2019

Dudley Pomona (19-195)
USGS *San Dimas* Quadrangle
(7.5-minute series)

Reports 1 of 2

N

1:24,000


BRACKETT FIELD
Tower
Radio Tower
Drag Strip
LOS ANGELES
COUNTY FAIRGROUNDS
Trailer Parks
Golf Course
Water Tanks
Mt Meadows
Spring
ANJOSE
(DALTON ET AL)
Ganesha High Sch
Ganesha Park
FREEWAY
Creek
Arroyo Sch
Marshall Jr High Sch
Theodore Roosevelt Sch
Lincoln Sch
Fire Sta
Catholic Girls High Sch
St Joseph Sch
Trailer Park
POMONA
PACIFIC
SOUTHERN
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT
Spadra
Elephant Hill
Westmont Park
Westmont Sch
Hamilton Sch
Welch Park
Hospital
Sacred Heart Sch
Police Sta
Central Park
City Hall
Project
mile_radius
Dudley Pomona (19-195)
USGS San Dimas Quadrangle
(7.5-minute series)
Reports 2052
N
AJG BFSA: 10/11/2019
1:24,000

Reports

ReportNum	Authors	CitYear	CitTitle	CitPublisher	Resources
LA-00389	Bissell, Ronald M.	1988	Cultural Resources Reconnaissance of Five Areas in the Frank G. Bonellli Regional County Park Los Angeles County, California	RMW Paleo Associates, Inc.	
LA-00761	Douglas, Ronald D.	1980	An Archaeological Records Search and Field Survey Mountain Meadows Property City of Pomona Los Angeles County, California	Archaeological Planning Collaborative	
LA-02665	Cottrell, Marie G., James N. Hill, Stephen Van Wormer, and John Cooper	1985	Cultural Resource Overview and Survey for the Los Angeles County Drainage Area Review Study	ARMC	19-000026, 19-000075, 19-000163, 19-000164, 19-000166, 19-000167, 19-000173, 19-000182, 19-000208, 19-000221, 19-000230, 19-000240, 19-000241, 19-000300, 19-000339, 19-000347, 19-000348, 19-000397, 19-000522, 19-000524, 19-000657, 19-000693, 19-000694, 19-000695, 19-000697, 19-000858, 19-001009, 19-001014, 19-001044, 19-001045, 19-001046, 19-001109
LA-02882	McKenna, Jeanette A.	1993	Cultural Resources Investigations, Site Inventory, and Evaluations, the Cajon Pieline Project Corridor, Los Angeles and San Bernadino Counties, California	Mc Kenna et al.	19-000967, 19-001046
LA-02932	Wlodarski, Robert J.	1993	Negative Archaeological Survey Report Provide High Occupancy Vehicle (hov) Lanes on Interstate 10 (i-10) From the Junction of State Route 57 (sr 57/interstate 610 (i-210) in the City of Pomona to the Los Angeles/san Bernardino County Line 07-la-i10/p.m. 4	Historical, Environmental, Archaeological, Research, Team	
LA-02970	Chamberlaine, Pat and Jean Rivers-Council	1992	Cajon Pipeline Project Draft Environmental Impact Statement Environmental Impact Report	City of Adelanto, and Bureau of Land Management	19-000059, 19-000060, 19-000067, 19-000077, 19-000194, 19-000213, 19-000216, 19-000248, 19-000441, 19-000444, 19-000823, 19-000903, 19-000925, 19-000926, 19-000927, 19-000962, 19-001015, 19-001046, 19-001134, 19-001354, 19-001595, 56-000027, 56-000062, 56-000141, 56-000240, 56-000241, 56-000644, 56-000842, 56-000916, 56-000917
LA-03369	Wlodarski, Robert J.	1996	A Phase 1 Archaeological Study for the Pomona Vor Dopler Conversion Project, County of Los Angeles, California	Historical, Environmental, Archaeological, Research, Team	

Reports

ReportNum	Authors	CitYear	CitTitle	CitPublisher	Resources
LA-03508	Van Wormer, Stephen R.	1985	Historical Resource Overview and Survey for the Los Angeles County Drainage Area Review Study	Archaeological Resource Management Corp.	
LA-03779	Smith, Francesca	1994	Historic Property Survey Report Provide High Occupancy Vehicle Lanes on Interstate 10 Between Sr 57/i-210 and the Los Angeles County/san Bernardino County Line in Los Angeles County 07-la-10-41.7/48.3	Myra L. Frank & Associates, Inc.	19-150397, 19-150408
LA-03800	Burton, Jeffery F.	1996	Three Farewells to Manzanar	National Parks Service	19-176918, 19-186564
LA-04835	Ashkar, Shahira	1999	Cultural Resources Inventory Report for Williams Communications, Inc. Proposed Fiber Optic Cable System Installation Project, Los Angeles to Riverside, Los Angeles and Riverside Counties	Jones & Stokes Associates, Inc.	19-186109, 19-186112, 19-187090
LA-04957	Duke, Curt	2000	Cultural Resource Assessment for the At&t Wireless Services Facility Number C787, County of Los Angeles, California	LSA Associates, Inc.	
LA-05726	Sylvia, Barbara	2001	Negative Archaeological Survey Report	Caltrans District 7	
LA-05925	Smith, Francesca	1994	Historic Property Survey Report Provide High Occupancy Vehicle Lanes on Interstate 10 Sr57/i-210 and the Los Angeles County/san Bernardino County Lines in Los Angeles 07-la-10-41.7/48.3	Myra L. Frank & Associates, Inc.	
LA-08828	Bonner, Wayne H.	2007	Cultural Resources Records Search and Site Visit Results for Royal Streel Communications, Llc Candidate La2337a (i-10 at White), 875 West Orange Grove, Avenue, Pomona, Los Angeles County, California	Michael Brandman Associates	19-150348, 19-150400, 19-150401
LA-08830	Tibbet, Casey and Bill Bell	2007	Cultural Resources Assessment 1737 and 1753 West Holt Avenue City of Pomona, Los Angeles County, California	LSA Associates, Inc.	19-188036, 19-188037
LA-09079	Bonner, Wayne H. and Christeen Taniguchi	2004	Records Search Results and Site Visit for Sprint Telecommunications Facility Candidate La60xc010a (brethren Church) 875 West Orange Grove Avenue, Pomona, Los Angeles County, California	Michael Brandman Associates	

Reports

ReportNum	Authors	CitYear	CitTitle	CitPublisher	Resources
LA-10038	McKenna, Jeanette A.	2004	Results of an Archaeological Monitoring Program for the C-crest Partners Llc Property, 1280 Loma Vista Street, Pomona, Los Angeles Co., California.	McKenna et al.	
LA-10356	Hatoff, Brian	2009	Archaeological Survey Report Verizon Cellular Communications Tower Location-Pomona 2 Relo 1151 Fairplex Drive, Pomona, Los Angeles County, CA 91760	URS	
LA-10561	Sylvia, Barbara	2001	Negative Archaeological Survey Report - Highway Project Description, State Route 71	Caltrans	
LA-10853	Simpson, Karen	2007	Historic Preservation Environmental Review Site(s); 991 N. Huntington Blvd.	City of Pomona	19-188909
LA-10958	Hollins, Jeremy and Christia Chang	2010	Verizon Cellular Communications Tower Site- Estrella LTE 1101 W. McKinley Avenue, Pomona, CA 91768	URS	19-187106
LA-11321	Schamel, Kathleen	2009	Conservation/repair of the Civil War Soldier Monument, Los Angeles National Cemetery, Los Angeles County, CA.	Department of Veteran's Affairs	
LA-11350	Lothrop, Gloria Ricci	1988	Pomona - A Centennial History		19-000208
LA-11351	Belmont, John and Timothy Seymour	1979	Smallpox, Poverty and Death at Ganesha Park, Mt. San Antonio Historian	CSU Pomona	19-000208
LA-11352	Bassi, Matthew	2004	Request to Designate Ganesha Park as a Single Historic Landmark; Applicant, Mickey D. Gallivan of the Historical Society of Pomona Valley	Historic Preservation Commission	19-000208

APPENDIX C

NAHC Sacred Lands File Search Results

Brian F. Smith & Associates

Archaeological/Biological/Historical/Paleontological/Air/Traffic/Noise Consulting

October 11, 2019

For: Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, California 95814

From: Andrew Garrison M.A., RPA
Brian F. Smith and Associates Inc.
14010 Poway Rd. Suite A
Poway, CA 92064

Re: Request for Sacred Lands File and Native American Contact List for the Dudley Pomona Project, Pomona, Los Angeles County, California.

I would like to request a record search of the Sacred Lands File and a list of appropriate Native American contacts for the following project: Dudley Pomona Project (Project No. 19-195). The 7.69-acre project is a Phase I assessment for the proposed zone change and multifamily residential development of 22 parcels (APNs 8358-035-908, -909, -910, -911, -912, -913, -914, -915, -917, -918, -922, -923, -925, -926, -928, -929, -935, -936, -937, -938, -939, -941) located just south of Interstate 10 and east of North Dudley Street in the city of Pomona, Los Angeles County, California. The project is located within the unsectioned San Jose (Dalton et al) land grant (Township 1 South, Range 9 West [Projected], in the USGS *San Dimas* Quadrangle. A copy of the project map showing the project area has been included for the processing of this request.

Thank you for your time.

Sincerely,

Andrew Garrison M.A., RPA
Project Archaeologist
Billing: 14678 Ibex Court, San Diego, CA 92129
Phone: 858-484-0915
Email: agarrison@bfsa-ca.com

Attachments:
USGS 7.5 *San Dimas*, California, topographic map with project area delineated.

Sacred Lands File request form

Sacred Lands File & Native American Contacts List Request
NATIVE AMERICAN HERITAGE COMMISSION

915 Capitol Mall, RM 364 ∗ Sacramento, CA 95814 ∗ (916) 653-4082
(916) 657-5390 – Fax ∗ nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: Dudley Pomona Project (Project No. 19-195)

County: Los Angeles

USGS Quadrangle Name(s): *San Dimas*

Unsectioned San Jose (Dalton et al) land grant (Township 1 South, Range 9 West [Projected])

Company/Firm/Agency: Brian F. Smith & Associates Inc.

Contact Person: Andrew Garrison

Street Address: 14010 Poway Road, Suite A

City: Poway Zip: 92064

Phone: 858-484-0915

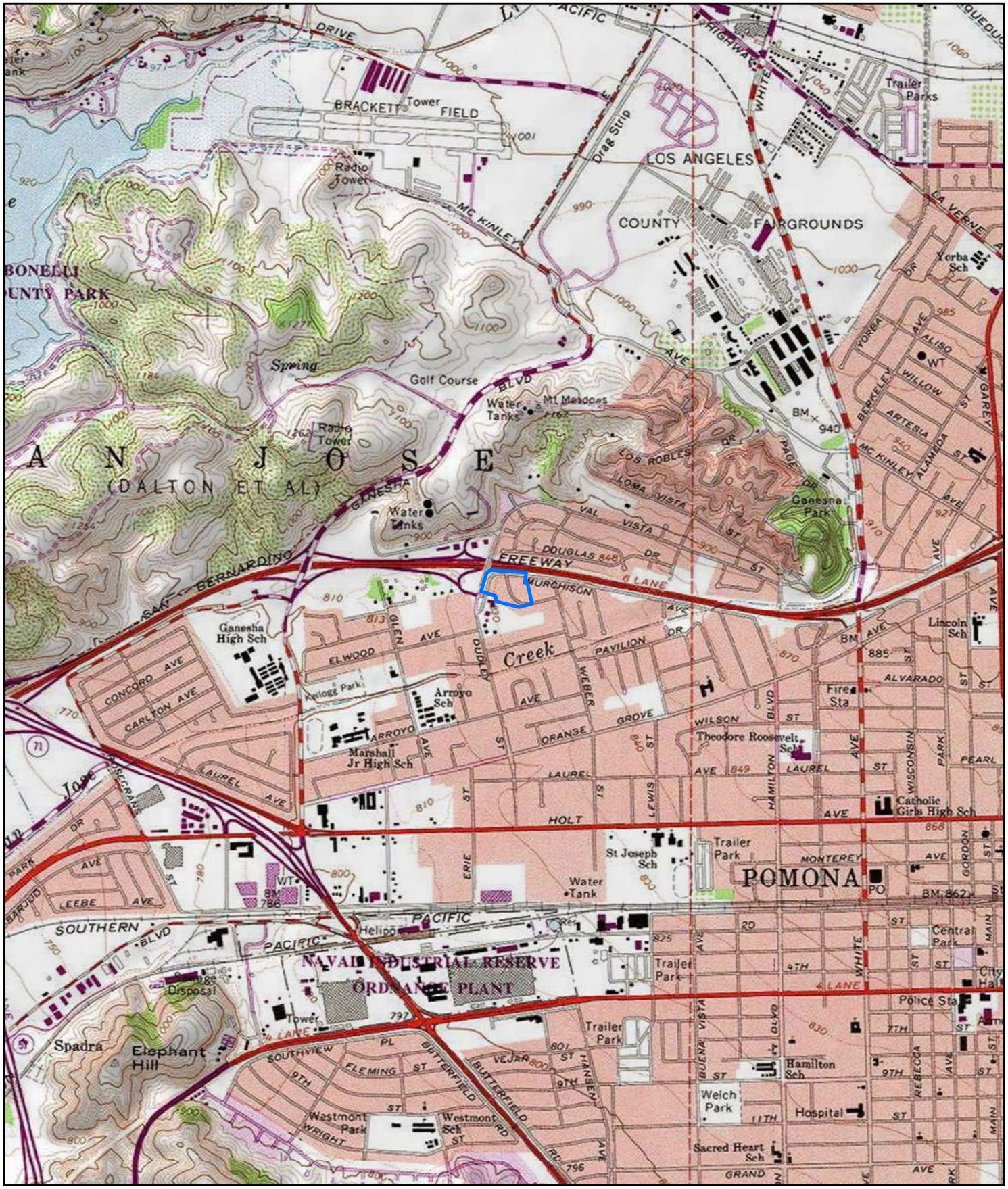
Fax: 858-679-9896

Email: agarrison@bfsa-ca.com

Project Description:

I would like to request a record search of the Sacred Lands File and a list of appropriate Native American contacts for the following project: Dudley Pomona Project (Project No. 19-195). The 7.69-acre project is a Phase I assessment for the proposed zone change and multifamily residential development of 22 parcels (APNs 8358-035-908, -909, -910, -911, -912, -913, -914, -915, -917, -918, -922, -923, -925, -926, -928, -929, -935, -936, -937, -938, -939, -941) located just south of Interstate 10 and east of North Dudley Street in the city of Pomona, Los Angeles County, California. The project is located within the unsectioned San Jose (Dalton et al) land grant (Township 1 South, Range 9 West [Projected]), in the USGS *San Dimas* Quadrangle. A

copy of the project map showing the project area has been included for the processing of this request.



Project

Dudley Pomona (19-195)
USGS *San Dimas* Quadrangle
(7.5-minute series)

N

AJG BFSA: 10/11/2019

1:24,000

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

October 24, 2019

Andrew Garrison
Brian F. Smith & Associates

VIA Email to: agarrison@bfsa-ca.com

RE: Dudley Pomona Project, Los Angeles County

Dear Mr. Garrison:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the Gabrieleno Band of Mission Indians – Kizh Nation on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Los Angeles County
10/24/2019

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Dudley Pomona Project, Los Angeles County.

Brian F. Smith and Associates, Inc.
Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

October 25, 2019

Andrew Salas
Chairperson
Gabrieleno Band of Mission Indians – Kizh Nation
P.O. Box 393
Covina, California 91723

Subject: Information regarding Native American cultural resources on or near the Dudley Pomona Project, Los Angeles County, California

Dear Mr. Salas:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Dudley Pomona Project. The information you provide will help to assess potential impacts within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public. This is part of the information gathering/exchange process for cultural resource studies and **is not** part of the Assembly Bill 52 or Senate Bill 18 consultation process executed between government agencies.

The proposed project includes a multifamily residential development of 22 parcels on 7.69 acres located just south of Interstate 10 and east of North Dudley Street in the city of Pomona, Los Angeles County, California (Assessor's Parcel Numbers 8358-035-908, -909, -910, -911, -912, -913, -914, -915, -917, -918, -922, -923, -925, -926, -928, -929, -935, -936, -937, -938, -939, -941). This project is located within the unsectioned San Jose (Dalton et al.) land grant (Township 1 South, Range 9 West [Projected]), in the USGS 7.5-minute *San Dimas, California* topographic quadrangle. Please find enclosed a section of the USGS *San Dimas* quadrangle map on which the project is delineated.

A review of the Sacred Lands File by the NAHC came back positive for results in the USGS 7.5-minute *San Dimas* Quadrangle. The Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment: USGS 7.5-minute *San Dimas, California* topographic map with project area delineated

Brian F. Smith and Associates, Inc.
Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

October 25, 2019

Anthony Morales
Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, California 91778

Subject: Information regarding Native American cultural resources on or near the Dudley Pomona Project, Los Angeles County, California

Dear Mr. Morales:

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Brian F. Smith and Associates, Inc.
Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

October 25, 2019

Charles Alvarez
Gabrielino-Tongva Tribe
23454 Vanowen Street
West Hills, California 91307

Subject: Information regarding Native American cultural resources on or near the Dudley Pomona Project, Los Angeles County, California

Dear Mr. Alvarez:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Dudley Pomona Project. The information you provide will help to assess potential impacts within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public. This is part of the information gathering/exchange process for cultural resource studies and **is not** part of the Assembly Bill 52 or Senate Bill 18 consultation process executed between government agencies.

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Brian F. Smith and Associates, Inc.
Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

October 25, 2019

Robert Dorame
Chairperson
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, California 90707

Subject: Information regarding Native American cultural resources on or near the Dudley Pomona Project, Los Angeles County, California

Dear Mr. Dorame:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Dudley Pomona Project. The information you provide will help to assess potential impacts within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public. This is part of the information gathering/exchange process for cultural resource studies and **is not** part of the Assembly Bill 52 or Senate Bill 18 consultation process executed between government agencies.

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tstropes@bfsa-ca.com

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Brian F. Smith and Associates, Inc.
Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

October 25, 2019

Sandonne Goad
Chairperson
Gabrielino/Tongva Nation
106 ½ Judge John Aiso Street, #231
Los Angeles, California 90012

Subject: Information regarding Native American cultural resources on or near the Dudley Pomona Project, Los Angeles County, California

Dear Ms. Goad:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Dudley Pomona Project. The information you provide will help to assess potential impacts within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public. This is part of the information gathering/exchange process for cultural resource studies and **is not** part of the Assembly Bill 52 or Senate Bill 18 consultation process executed between government agencies.

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Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment: USGS 7.5-minute *San Dimas, California* topographic map with project area delineated

Subject: Re: Dudley Pomona Project
From: Andrew Garrison <agarrison@BFSA-ca.com>
Date: 10/30/2019, 9:36 AM
To: Administration Gabrieleno <admin@gabrielenoindians.org>
CC: Elena Goralogia <elena@bfsa-ca.com>, Courtney Accardy <caccardy@bfsa-ca.com>

Hi Andy,

I am interested in any information that you may want to provide in relation to this project. As you know the NAHC Sacred Lands File Search results were positive for the general area and the NAHC recommended contacting you directly. Although our firm has already sent you a formal letter, feel free to give me a call or send me a direct email.

The proposed project includes a multifamily residential development of 22 parcels on 7.69 acres located just south of Interstate 10 and east of North Dudley Street in the city of Pomona, Los Angeles County, California (Assessor's Parcel Numbers 8358-035-908, -909, -910, -911, -912, -913, -914, -915, -917, -918, -922, -923, -925, -926, -928, -929, -935, -936, -937, -938, -939, -941). This project is located within the unsectioned San Jose (Dalton et al.) land grant (Township 1 South, Range 9 West [Projected]), in the USGS 7.5-minute San Dimas, California topographic quadrangle.

Any information you might provide will be kept confidential and will not be divulged to the public. Again, this is part of the information gathering/exchange process for cultural resource studies and is not part of the Assembly Bill 52 or Senate Bill 18 consultation process executed between government agencies.

A map showing the project's location is attached to this email.

Thank you,

Andrew

--
Andrew Garrison M.A. RPA
Project Archaeologist
Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064
Archaeology // Paleontology // History // Biology //
(951) 681-9950- Riverside
(858) 679-8218- San Diego
(858) 679-9896- Fax
agarrison@bfsa-ca.com
www.bfsa-ca.com // www.sandiegoarchaeology.com

Confidentiality Notice: The information contained in this electronic e-mail and any accompar

On 10/24/2019 8:54 AM, Administration Gabrieleno wrote:

> Thank you for your email Mr. Quinn,
> I can help with any questions Mr. Garisson May have . Again thank you
>
> On Thu, Oct 24, 2019 at 7:55 AM Quinn, Steven@NAHC <Steven.Quinn@nahc.ca.gov> wrote:
>
> > Good Morning,
> >
> > Attached is the response to the project referenced above. If you have any additional questions, please feel free to contact our office email at nahc@nahc.ca.gov.
> >
> > Regards,
> >
> > **Steven Quinn**
> >
> > Native American Heritage Commission
> >
> > 1550 Harbor Blvd., Suite 100
> >
> > West Sacramento, CA 95691
> >
> > Steven.Quinn@nahc.ca.gov
> >
> > Direct Line: (916) 573-1033
> >
> > Office: (916) 373-3710
>
> --

Tracy Stropes

From: Administration Gabrieleno <admin@gabrielenoindians.org>
Sent: Tuesday, November 5, 2019 3:26 PM
To: Tracy Stropes
Subject: The Dudley Pomona Project, Los Angeles County, CA

Dear Tracy Stropes,

Thank you for your letter dated October 25,2019, regarding the above project. Chairman Salas would like to request the contact information of the individual(s) from the lead agency. The Tribal Council would like to provide confidential information in a government to government consultation.

Sincerely

Lexie Salas,

Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

Attachments area

PALEONTOLOGICAL ASSESSMENT FOR THE DUDLEY POMONA PROJECT

CITY OF POMONA
LOS ANGELES COUNTY, CALIFORNIA

APNs 8358-035-908 to -915, -917, -918, -922, -923, -925, -926, -928, -929, -935 to -939, and -941

Prepared for:

MLC Holdings, Inc.
5 Peters Canyon Road, Suite 310
Irvine, California 92606

Submitted to:

City of Pomona
505 Garey Avenue
Pomona, California 91766

Prepared by:

Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064

November 8, 2019

Paleontological Database Information

Author:	Todd A. Wirths, M.S., Senior Paleontologist, California Professional Geologist No. 7588
Consulting Firm:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064 (858) 484-0915
Report Date:	November 8, 2019
Report Title:	Paleontological Assessment for the Dudley Pomona Project, Pomona, Los Angeles County, California (APNs 8358-035-908, -909, -910, -911, -912, -913, -914, -915, -917, -918, -922, -923, -925, -926, -928, -929, -935, -936, -937, -938, -939, -941)
Prepared for:	MLC Holdings, Inc. 5 Peters Canyon Road, Suite 310 Irvine, California 92606
Submitted to:	City of Pomona 505 Garey Avenue Pomona, California 91766
Prepared by:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064
USGS Quadrangle:	*San Dimas, California* (7.5 minute)
Study Area:	7.47 acres
Key Words*:*	Paleontological assessment; High paleontological resource sensitivity; city of Pomona.

I. INTRODUCTION AND LOCATION

A paleontological resource assessment has been completed for the Dudley Pomona Project, located in the city of Pomona in Los Angeles County (Figures 1 and 2). The 7.47-acre project is located at 1440 Murchison Avenue within the city of Pomona and is bounded by Interstate 10 to the north, North Dudley Street to the west, residential development to the east, and Cortez Elementary School to the south. The property has been graded and is generally flat with an average elevation of 835 feet above mean sea level. The project is located within the unsectioned San Jose (Dalton et al) land grant (Township 1 South, Range 9 West [Projected], as shown on the USGS 7.5' *San Dimas, California* topographic quadrangle map (see Figure 2). The project includes 22 parcels identified as Assessor's Parcel Numbers (APNs) 8358-035-908 to -915, -917, -918, -922, -923, -925, -926, -928, -929, -935 to -939, and -941. The project, as proposed by the applicant, will consist of the construction of a multi-family residential development along with associated parking lots, landscaping, and infrastructure.

II. REGULATORY SETTING

The California Environmental Quality Act (CEQA), patterned after the National Environmental Policy Act (NEPA), is the overriding environmental document that sets the requirement for protecting California's cultural and paleontological resources. The document does not establish specific rules that must be followed, but mandates that governing permitting agencies (lead agencies) set their own guidelines for the protection of nonrenewable paleontological resources under their jurisdiction.

State of California

Under Guidelines for the Implementation of CEQA, as amended March 29, 1999 (Title 1, Chapter 3, California Code of Regulations: 15000 et seq.), procedures define the type of activities, persons, and public agencies required to comply with CEQA. In the Environmental Checklist, one of the questions to answer is, "Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (Section 15023, Appendix G, Section XIV, Part a). The California Public Resources Code (PRC) Section 5097.5 states:

> a) No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

b) As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

City of Pomona

In the City of Pomona's Draft Environmental Impact Report (DEIR), impacts to paleontological resources are outlined under Impact 4.4-3 (Rincon Consultants, Inc. [Rincon] 2013, p. 4.4-18). The DIER poses the question, "Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" The response, Impact 4.4-3, is stated below:

> Ground-disturbing activities associated with development under the proposed General Plan Update and Corridors Specific Plan could result in damage to or destruction of unique paleontological resources within rock units or geologic features. However, proposed General Plan Update policies would ensure that such impacts are addressed on a case-by-case basis. Therefore, impacts would be Class III, less than significant. (Rincon 2013)

The City of Pomona's General Plan Update contains several policies designed to protect paleontological resources (City of Pomona 2014). By implementing these policies, impacts to paleontological resources are said to be reduced to less than significant (Rincon 2013). The policies of the General Plan Update are listed below (City of Pomona 2014, p. 239-240):

- *7F.P35*: Per the Guidelines for the California Environmental Quality Act (CEQA), require that new development avoid or reduce potential impacts to archaeological, paleontological and historic resources.
- *7F.P41*: Maintain sources of information regarding paleontological and archeological sites and the names and addresses of responsible organizations and qualified individuals, who can analyze, classify, record, and preserve paleontological or archeological findings.
- *7F.P42*: Require a qualified paleontologist/archeologist to monitor all grading and/or excavation where there is a potential to affect cultural, archeological or paleontological resources. If these resources are found, the applicant shall implement the recommendations of the paleontologist/archeologist, subject to the approval of the Planning Division.
- *7F.P43*: Require new development to donate scientifically valuable paleontological or archaeological materials to a responsible public or private institution with a suitable repository, located within Pomona, or Los Angeles County, whenever possible.

III. GEOLOGY

The project is located within the western extent of the Pomona Valley, between the San Gabriel Valley to the west and the San Bernardino Valley to the east. The San Gabriel Mountains are located north of the San Gabriel and Pomona valleys, and the western half of the San Bernardino Valley. A southern spur of the San Jose fault is mapped underlying the channelized San Jose Creek approximately 850 feet south of the project (Morton and Miller 2006). The San Jose Hills lie just north of the project, consisting mostly of Miocene volcanic deposits and Cretaceous plutonic rocks (Dibblee and Minch 2002; Morton and Miller 2006). As mapped by Morton and Miller (2006), the project area is underlain by middle Holocene young alluvial fan deposits; similarly, Dibblee and Minch (2002) indicate Holocene alluvium of sand and gravel underlying the project (area colored tan and labeled as "Qa" in Figure 3, after Dibblee and Minch 2002).

IV. PALEONTOLOGICAL RESOURCES

Definition

Paleontological resources are the remains of prehistoric life that have been preserved in geologic strata. These remains are called fossils and include bones, shells, teeth, and plant remains (including their impressions, casts, and molds) in the sedimentary matrix, as well as trace fossils such as footprints and burrows. Fossils are considered older than 5,000 years of age (Society of Vertebrate Paleontology [SVP] 2010), but may include younger remains (subfossils) when viewed in the context of local extinction of the organism or habitat, for example. Fossils are considered a nonrenewable resource under state, county, and local guidelines (Section II of this report).

Fossil Records Search

A paleontological records search was performed for the Dudley Pomona Project by the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County (LACM; McLeod 2019, attached). The report by McLeod (2019) identified LACM Locality No. 8064 as located southwest of the intersection of Highway 60 and Highway 71, about four miles to the south of the Dudley Pomona Project, and consisting of the fossil remains of a bison. Also identified nearby are Pleistocene horse and camel bones from LACM Locality No. 1728 in English Canyon of Chino Hills, located just under six miles south-southeast of the Dudley Pomona Project (McLeod 2019). These fossil specimens were recovered from a depth of 15 to 20 feet deep. McLeod (2019) indicated that shallow excavations in the overlying younger alluvium are unlikely to yield significant vertebrate fossils, but deeper excavations into older deposits of Quaternary alluvium have a greater potential to encounter vertebrate fossils.

V. PALEONTOLOGICAL SENSITIVITY

Overview

The degree of paleontological sensitivity of any particular area is based on a number of factors, including the documented presence of fossiliferous resources on a site or in nearby areas, the presence of documented fossils within a particular geologic formation or lithostratigraphic unit, and whether or not the original depositional environment of the sediments is one that might have been conducive to the accumulation of organic remains that might have become fossilized over time. Late Quaternary (Holocene, or "modern") alluvium is generally considered to be geologically too young to contain significant nonrenewable paleontological resources (*i.e.,* fossils) and is thus typically assigned a "Low" paleontological sensitivity. Pleistocene (> 11,000-year-old) alluvial and alluvial fan deposits in the Inland Empire, however, often yield important Ice Age terrestrial vertebrate fossils, such as extinct mammoths, mastodons, giant ground sloths, extinct species of horse, bison, camel, saber-toothed cats, and others (Jefferson 2009a, 2009b). These Pleistocene sediments are thus accorded a "High" paleontological resource sensitivity.

Professional Standards

The Society of Vertebrate Paleontology (SVP) drafted guidelines outlining procedures that include:

> [E]valuating the potential for impacts of a proposed action on paleontological resources and for mitigating those impacts. Impact mitigation includes pre-project survey and salvage, monitoring and screen washing during excavation to salvage fossils, conservation and inventory, and final reports and specimen curation. The objective of these procedures is to offer standard methods for assessing potential impacts to fossils and mitigating these impacts. (SVP 2010)

The guidelines include four categories of paleontological sensitivity for geologic units (formations) that might be impacted by a proposed project, as listed below:

- *High Potential:* Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- *Undetermined Potential:* Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment, and that further study is needed to determine the potential of the rock unit.
- *Low Potential:* Rock units that are poorly represented by fossil specimens in institutional collections or based upon a general scientific consensus that only preserve fossils in rare circumstances.
- *No Potential:* Rock units that have no potential to contain significant paleontological

resources, such as high-grade metamorphic rocks and plutonic igneous rocks.

Analysis

In the area around the Dudley Pomona Project, older Quaternary alluvial deposits (i.e., rocks with a "High" paleontological resource sensitivity) are not indicated as present at the surface, nor in the vicinity of LACM Localities 8064 and 1728 (Dibblee and Minch 2002; Morton and Miller 2006). The only geologic rock formation mapped underlying these localities is Holocene alluvium (areas labeled "Qa" in Figure 3). However, these fossil localities represent older Quaternary (Pleistocene) fossils recovered from alluvial deposits of that age, therefore the older Pleistocene sediments must be present below the mapped Holocene alluvial sediments. While the depth for LACM Locality 8064 is not provided, LACM Locality 1728 was recovered from between 15 and 20 feet deep (McLeod 2019), indicating the Holocene-Pleistocene alluvial interface is a maximum of approximately 15 feet deep in that area (English Canyon in Chino Hills).

VI. RECOMMENDATIONS

The probable existence of Quaternary (*i.e.*, Pleistocene) alluvial deposits beneath the Dudley Pomona Project, along with the High paleontological resource sensitivity assigned to these sediments locally (McLeod 2019, Jefferson 2009a, 2009b), and the presence of previously recorded fossil specimens from Pleistocene alluvial deposits about four and six miles south of the subject property all support the recommendation that full-time paleontological monitoring be required in these Pleistocene alluvial deposits. However, hard data supporting the presence of Pleistocene sediments below the Holocene surficial deposits at the project was not available at the time of this writing. It is recommended that periodic "spot checks" be performed by a qualified paleontologist during grading, excavation, or utility trenching activities at the Dudley Pomona Project, starting at a depth of 10 feet below the surface, to determine the stratigraphic relationships of the sediments underlying the site, and for the presence of fossils. Periodic "spot check" monitoring will consist of approximately one to two scheduled site visits per week by a paleontological monitor during construction ground disturbance. Once Pleistocene strata are recognized or fossils are discovered, full-time monitoring for paleontological resources is warranted.

A paleontological Mitigation Monitoring and Reporting Program (MMRP) consistent with the provisions of CEQA, those of the City of Pomona, and the guidelines of the SVP (2010) should be developed and implemented for any mass grading and excavation-related activities, including utility trenching and boring activities, during site preparations for the construction of the proposed Dudley Pomona Project. A proposed paleontological MMRP follows.

Proposed Paleontological MMRP:

1. Monitoring of mass grading and excavation activities in areas identified as likely to contain paleontological resources shall be performed by a qualified paleontologist or paleontological monitor. Periodic spot checks should be performed starting at a depth of 10 feet, to determine the presence of Pleistocene strata or fossils. Once Pleistocene strata are recognized or fossils are discovered, full-time monitoring for paleontological resources is warranted. Monitoring will be conducted full-time in areas where grading, excavation, or drilling activities occur within Pleistocene sedimentary deposits in order to mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources.

2. Paleontological monitors will be equipped to salvage fossils as they are unearthed to avoid construction delays and to remove samples of sediment that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor must be empowered to temporarily halt or divert equipment to allow for the removal of abundant or large specimens in a timely manner. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface, or if they are present, are determined upon exposure and examination by qualified paleontological personnel to have low potential to contain fossil resources.

3. Preparation of recovered specimens to a point of identification and permanent preservation, including screen-washing sediments to recover small invertebrates and vertebrates if indicated by the results of test sampling. Preparation of individual vertebrate fossils is often more time-consuming than for accumulations of invertebrate fossils.

4. All fossils must be deposited in an accredited institution (university or museum) that maintains collections of paleontological materials. All costs of the paleontological monitoring and mitigation program, including any one-time charges by the receiving institution, are the responsibility of the developer.

5. Preparation of a final monitoring and mitigation report of findings and significance, including lists of all fossils recovered and necessary maps and graphics to accurately record their original location(s). A letter documenting receipt and acceptance of all fossil collections by the receiving institution must be included in the final report. The report, when submitted to (and accepted by) the appropriate lead agency (e.g., the City of Pomona), will signify satisfactory completion of the project program to mitigate impacts to any nonrenewable paleontological resources.

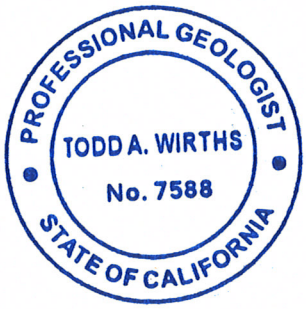
VII. CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this paleontological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief, and have been compiled in accordance with CEQA criteria.

November 8, 2019

Todd A. Wirths
Senior Paleontologist
California Professional Geologist No. 7588

Date



VIII. ATTACHMENT A

References
Resume

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Jefferson, G.T. 2009b. A catalogue of Blancan and Irvingtonian vertebrates and floras from Arizona, southern California, Nevada, Utah, and northwestern Mexico. Unpublished draft manuscript, Colorado Desert District Stout Research Center, Anza-Borrego Desert State Park, Borrego Springs, California.

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Todd A. Wirths, MS, PG

Senior Paleontologist

Brian F. Smith and Associates, Inc.
14010 Poway Road • Suite A •
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: twirths@bfsa-ca.com

Education

Master of Science, Geological Sciences, San Diego State University, California **1995**

Bachelor of Arts, Earth Sciences, University of California, Santa Cruz **1993**

Associate of Arts, Geological Sciences, Santa Barbara City College **1992**

Professional Certifications

Professional Geologist, California (#7588), 2003
Riverside County Approved Paleontologist
San Diego County Qualified Paleontologist
Orange County Certified Paleontologist (applied, 2019)
OSHA HAZWOPER 40-hour trained; current 8-hour annual refresher

Professional Memberships

Board member, San Diego Geological Society
San Diego Association of Geologists (President, 2012; Vice President, 2011)
South Coast Geological Society

Publications

Picacho and the Cargo Muchachos: Guns, Gold, and Geology of Eastern Imperial County, California: San Diego Associations of Geologists/Sunbelt Publications, 2012 (1st ed.), 2014 (2nd ed.).
"*Picacho, the Golden Road*," Dezert Magazine, Winter, 2013.

Experience

Senior Paleontologist **October 2012–Present**
Brian F. Smith and Associates, Inc. **Poway, California**

Mr. Wirths serves as the director of the paleontology department at BFSA. Mr. Wirths oversees all phases of project-related paleontology, including management of field and junior staff, planning, organizing, and implementing monitoring projects, research, report drafting, regulatory compliance, and laboratory oversight. Mr. Wirths directs or performs resource mitigation monitoring of construction sites, fossil salvage activities, paleontological field surveys and assessments, laboratory fossil preparation and curation. He has drafted dozens of technical reports, including paleontological assessments, site reports, and paleontological resource impact mitigation program (PRIMP) reports. Mr. Wirths created and implemented BFSA-specific fossil-recovery data sheets for field use by monitoring staff. The field

experience of Mr. Wirths includes the use of Trimble GPS data recording, burlap and plaster techniques, collection of microfossils, and wet and dry-screening techniques. Mr. Wirths provides expert identification of fossil marine invertebrates.

Lead Geological/Paleontological Consultant **November 2011–February 2009**
Cogstone Resource Management **San Diego and Orange, California**

Mr. Wirths conducted on-site paleontological monitoring, drafted/evaluated RFP responses, work plans, and reports; planned, organized, and implemented projects, and trained and supervised junior staff. Field localities include projects in Calaveras, Merced, Tulare, San Joaquin, Kern, San Bernardino, Los Angeles, and Riverside Counties. At the Highway 99 Caltrans expansion project near Merced, Mr. Wirths recovered dozens of Rancholabrean-age vertebrate fossils using plaster and burlap casting techniques.

Paleontological/Geological Monitor **February 2011–November 2011**
San Diego Natural History Museum **San Diego, California**

Oversaw construction and development sites for fossil resources and logged and interpreted geology during drilling and trenching activities/recovery of fossils. Monitoring projects include the SDG&E Sunrise Powerlink, several SDG&E Wood to Steel projects, San Diego City College expansion, The Bishops School, and the Prebys Cardiovascular Institute.

Project Manager/Geologist **March 2010–February 2011**
Wirths Consulting **San Diego, California**

Provided environmental consulting services for Apex Companies, H.M. Pitt Labs, Ninyo & Moore, and TRC Solutions, providing project management, reporting, and certified professional field oversight, designing/budgeting an *in situ* chemical oxidation project, and obtaining a City of San Diego business license.

Senior Project Manager **April 2007–August 2009**
ETIC Engineering, Inc. **Santa Diego, California**

Operated as senior project manager for 10 ExxonMobil retail sites, designed and implemented assessment and remediation projects (including project forecasting/budgeting, managing subcontractors, and composing work plans), composed work plans, assessment reports, and corrective action plans, and managed/mentored staff-level associates.

Project Manager **January 2000–April 2007**
TRC Solution, Inc./TRC Alton Geoscience **San Diego and Imperial Counties, California**

Operated as project manager for various projects throughout San Diego County, including ExxonMobil Oil Corporation and Unocal Corporation remediation activities, BNSF Railway Company groundwater assessment and remediation, and Ultramar/Valero, Inc., which involved supervising/managing on-site personnel, collecting/managing soils, groundwater, and wood samples, writing reports, and conducting remediation feasibility testing and remedial planning.

Staff Geologist **May 1997–September 2000**
IT Corp./Pacific Environmental Group **San Diego, Orange, and Los Angeles Counties, California**

Tracked progress of excavation and delineation of impact, sampled/managed soil, and conducted drilling and groundwater monitoring/well installation activities.

Selected Technical Reports

Glover, Amy, Todd **Wirths**, and Sherri Gust

2012 *Paleontological assessment for the Paradise Creek Housing Development, National City, San Diego County, California.* Prepared for The Related Companies of California, Irvine, CA, by Cogstone Resource Mgt., Inc.

Gust, Sherri, Kim Scott, and Todd **Wirths**

2012 *Paleontological resources assessment for the WECC Path 42 Project in Riverside County, California.* Prepared for Southern California Edison, Monrovia, CA, by Cogstone Resource Mgt., Inc.

Horne, Melinda, Todd **Wirths**, and Amy Glover

2012 *Paleontological and cultural resources assessment for the town of Yucca Valley General Plan update, San Bernardino County, California.* Prepared for The Planning Center – DC&E, Santa Ana, CA, by Cogstone Resource Mgt., Inc.

Wirths, Todd A., and Sherri Gust

2012 *Paleontological resources assessment for the Truckhaven geothermal expansion project, Imperial County, California.* Prepared for NGP Truckhaven, LLC, Reno, NV, by Cogstone Resource Mgt., Inc.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Aztec Court Apartments, 6237 Montezuma Road, San Diego, San Diego County, California.* Prepared for Warmington Residential California, Inc., Southern California Division. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Citywide Sewer Pump Station Upgrades, Group II, Pump Station 60A, Scripps Ranch neighborhood, City of San Diego, San Diego County, California (PTS No. 31233 and WBS No. S-00304).* Prepared for Ortiz Corporation General Engineering Contractors. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological Resource Impact Mitigation Program (PRIMP), Rancho Paseo de Valencia, City of Corona and unincorporated Riverside County, California (Tentative Tract Map 34760; APNs 114-040-019, 114-040-020, 275-100-003, and 275-100-004).* Prepared for Rancho Paseo de Valencia. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological monitoring report, Casa Aldea Phase II, University City Village Apartments, 6112, 6122, and 6132 Gullstrand Street, University City, San Diego, San Diego County (LDR No. 98-0408, PTS No. 303550).* Prepared for Wise River Builders, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological Resource Assessment, Ballpark Village Development, East Village, San Diego, San Diego County, California.* Prepared for Ballpark Village, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *An Updated Phase I Paleontological Resources Assessment for Tentative Tract Maps 36484 and 36485, Audie Murphy Ranch, City of Menifee, County of Riverside, California.* Prepared for Brookfield Residential. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological Resource Impact Mitigation Program (PRIMP), Ridge Park project, city of Temecula, Riverside County, California (APNs 922-210-049; 940-310-013, 940-310-015, and 940-310-016; 940-310-044 through 940-310-048; and 940-320-001 through 940-320-007).* Prepared for Ambient Communities. Report on file at Brian F. Smith and Associates, Inc., Poway, CA.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Monitoring Report, Chino Desalter Phase III Expansion Project, 11301 Harrel Street, City of Jurupa Valley, Riverside County, California.* Prepared for W.M. Lyles Co. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological resource and monitoring assessment, proposed Avanti North housing development, Lancaster, Los Angeles County, California (Tentative Tract Map No. 53229).* Prepared for Avanti North, LP. Report on file at Brian F. Smith and Associates, Inc., Poway, CA.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological monitoring report for the Montezuma Trunk Sewer project, College and Mid-Cities Community Plan Areas, San Diego, San Diego County, California (Project No. 240104).* Prepared for Ortiz Corporation General Engineering Contractors. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological resource impact assessment for the Lake Ranch project site, unincorporated Riverside County, California (APNs 270-060-010, 270-160-001, 270-170-010, 270-170-011, and 270-180-010; TR 36730).* Prepared for Christopher Development Group. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Menifee Heights Development, City of Menifee, Riverside County, California (Tract No. 32277).* Prepared for CV Communities, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Resource Assessment, Shoshone Valley Road solar array project, Twentynine Palms, San Bernardino County, California (APNs 613-233-01, -02, -03, -04, -27, -28, -29, and -30).* Prepared for Ecos Energy, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, CA.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Resource Assessment, Utah Trail solar array project, Twentynine Palms, San Bernardino County, California (APNs 621-281-22 through 621-281-25).* Prepared for Ecos Energy, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Monitoring Report, San Diego Community College District, César Chávez Campus, Barrio Logan, San Diego, California.* Prepared for San Diego Community College District. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Monitoring Report, Sewer and Water Group 761, Uptown Community Plan Area, San Diego, San Diego County, California.* Prepared for Burtech Pipeline. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Blessed Teresa of Calcutta Catholic Parish project site, French Valley, unincorporated Riverside County, California (APN 480-040-044; Project No. PP24903).* Prepared for Blessed Teresa of Calcutta Catholic Parish, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Resource Impact Mitigation Program (PRIMP), Salton City Landfill Expansion Project, unincorporated Imperial County, California (SCH No. 2010071072).* Prepared for Burrtec Waste Industries, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Yates Road housing development site, Tract Map TR 36437, northeast of Murrieta, unincorporated Riverside County, California (APNs 467-390-001 through 467-390-016).* Prepared for CV Communities, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Monitoring Report, Construction of the Park and G Project, East Village, Downtown San Diego, San Diego County, California.* Prepared for Oliver McMillan. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Monitoring Report, Construction of Pinnacle 15th & Island Project, East Village, Downtown San Diego, San Diego County, California.* Prepared for Pinnacle International Development, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., N. Scott Rugh, and Todd A. **Wirths**

2012 *Paleontological Monitoring Report, Construction of 13th & Market Project, East Village, Downtown San Diego, San Diego County, California.* Prepared for The Hanover Company. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., N. Scott Rugh, and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Ariel Suites, Little Italy, City of San Diego, San Diego County, California.* Prepared for Ariel Suites, LP. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., N. Scott Rugh, and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Village Lindo Paseo Dormitories, SDSU College Area, City of San Diego, San Diego County, California.* Prepared for Village Lindo Paseo, L.P. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., N. Scott Rugh, and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Grit Processing Improvements Project, Point Loma Wastewater Treatment Plant, San Diego, San Diego County, California (Sewer WO No. 176001; WBS No. S-00315).* Prepared for Archer Western Contractors. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., N. Scott Rugh, and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Harbor Drive Trunk Sewer, City of San Diego, San Diego County, California (Project No. 38789).* Prepared for Burtech Pipeline. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., Todd A. **Wirths,** and Brian F. Smith

2013 *Paleontological and Archaeological Monitoring and Mitigation Report, Lake Forest Sports Park, City of Lake Forest, Orange County, California.* Prepared for Road Builders, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Negative Paleontological Monitoring and Mitigation Report, San Clemente Senior Housing Project, 2350 South El Camino Real, City of San Clemente, Orange County, California (CUP No. 06-065; APN 060-032-04)*. Prepared for Primus Building Solutions. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Wirths, Todd A., and George L. Kennedy

2014 *Paleontological Monitoring Report, Sewer Main Replacement Group Job 685 (Part of Sewer and Water Group Job 685 (Part of Sewer and Water Group 3014), City Heights Neighborhood of the City of San Diego, San Diego County, California (Project No. 131446; Sewer WBS No. B-00333).* Prepared for Ortiz Corporation General Engineering Contractors. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Wirths, Todd A., and George L. Kennedy

2015 *Paleontological Monitoring Report, 951 South Beach Boulevard Project, La Habra, Orange County, California (MND No. 14-01).* Prepared for Fairfield 951 Beach, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2015 *Paleontological Monitoring Report, Casa Aldea Lots 4 & 6, Fairbanks Ranch-Santaluz Area, Northern San Diego, California.* Prepared for Wise River Builders, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2015 *Paleontological Monitoring Report, Pendry Hotel San Diego, Gaslamp Quarter, Downtown San Diego, California.* Prepared for The Robert Green Company. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Wirths, Todd A., and George L. Kennedy

2016 *Paleontological Monitoring Report, The Rey Project, 840 B Street, Downtown San Diego, San Diego County, California.* Prepared for Blue/WP San Diego, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**
2016 *Paleontological Monitoring Report, Atmosphere Affordable Housing Project, 1453 Fourth Avenue, Downtown San Diego, San Diego County, California.* Prepared for Wakeland Housing & Development Corp. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Wirths, Todd A., and George L. Kennedy
2017 *Paleontological Monitoring Report, Ballpark Village, Lower East Village, Downtown San Diego, California.* Prepared for Ballpark Village, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Wirths, Todd A., and George L. Kennedy
2017 *Paleontological Monitoring Report, 460 16th Street, East Village, Downtown San Diego, San Diego County, California.* Prepared for Lennar Multifamily Communities, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Wirths, Todd A., and George L. Kennedy
2017 *Paleontological Resource Impact Mitigation Program (PRIMP) for the La Habra North Project, La Habra, Orange County, California (Tract Map 17809).* Prepared for City Ventures. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**
2017 *Paleontological Monitoring Report, Imagine Coachella project at the Jordan Christian Academy, West of Coachella in Unincorporated Riverside County, California.* Prepared for M-13 Construction, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**
2017 *Paleontological Monitoring Report, Kettner and Ash Condominiums Project, Columbia District of Downtown San Diego, San Diego County, California.* Prepared for Bosa Development California, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., Todd A. **Wirths,** and N. Scott Rugh
2018 *Paleontological Monitoring Report, Manning Canyon Sewer and Water Replacement Project, Linda Vista, City of San Diego, San Diego County, California.* Prepared for Red Tail Monitoring & Research, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., Todd A. **Wirths,** and N. Scott Rugh
2018 *Paleontological Monitoring Report, Westfield University Towne Center Expansion Project, Phase 2A, La Jolla Village Drive, San Diego, San Diego County, California.* Prepared for Westfield UTC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Wirths, Todd A., and George L. Kennedy
2018 *Negative Paleontological Monitoring Report, Verizon Capistrano Depot Project, 32400 Paseo Adelanto, San Juan Capistrano, Orange County, California (CUP No. 16-003; APN 668-10-023).* Prepared for Trileaf Environmental and Property Consultants. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., Todd A. **Wirths,** and N. Scott Rugh
2019 *Paleontological Monitoring Report, Saint Demiana Coptic Orthodox Church, Santaluz-Torrey Highlands Neighborhood, San Diego, San Diego County, California.* Prepared for Barnhart-Reese Construction, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

IX. ATTACHMENT B

Project Maps:
General Location Map
USGS Project Location Map
Geologic Map

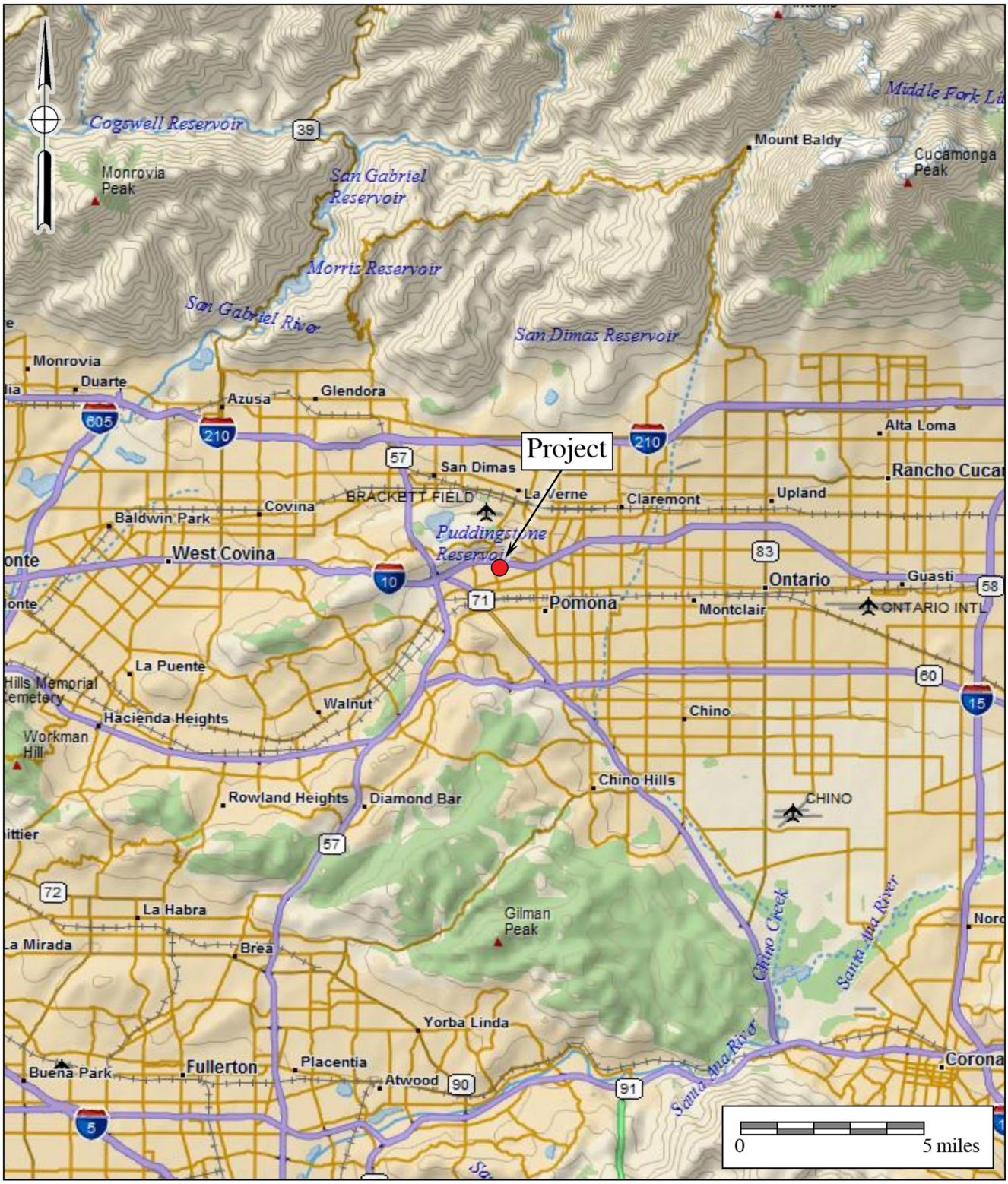

Figure 1

General Location Map

The Dudley Pomona Project

DeLorme (1:250,000)

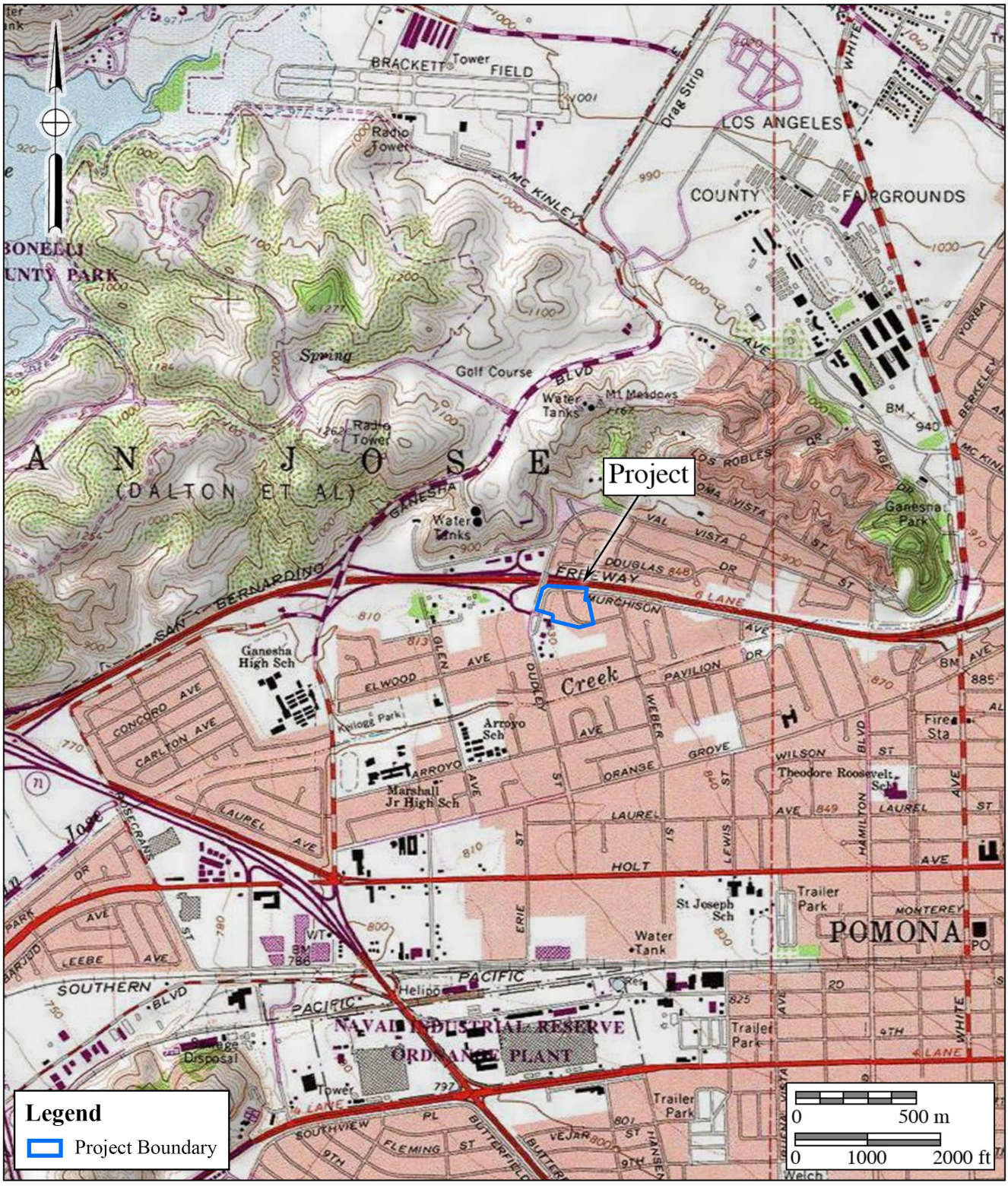

Figure 2

Project Location Map

The Dudley Pomona Project

USGS *San Dimas* Quadrangle (7.5-minute series)

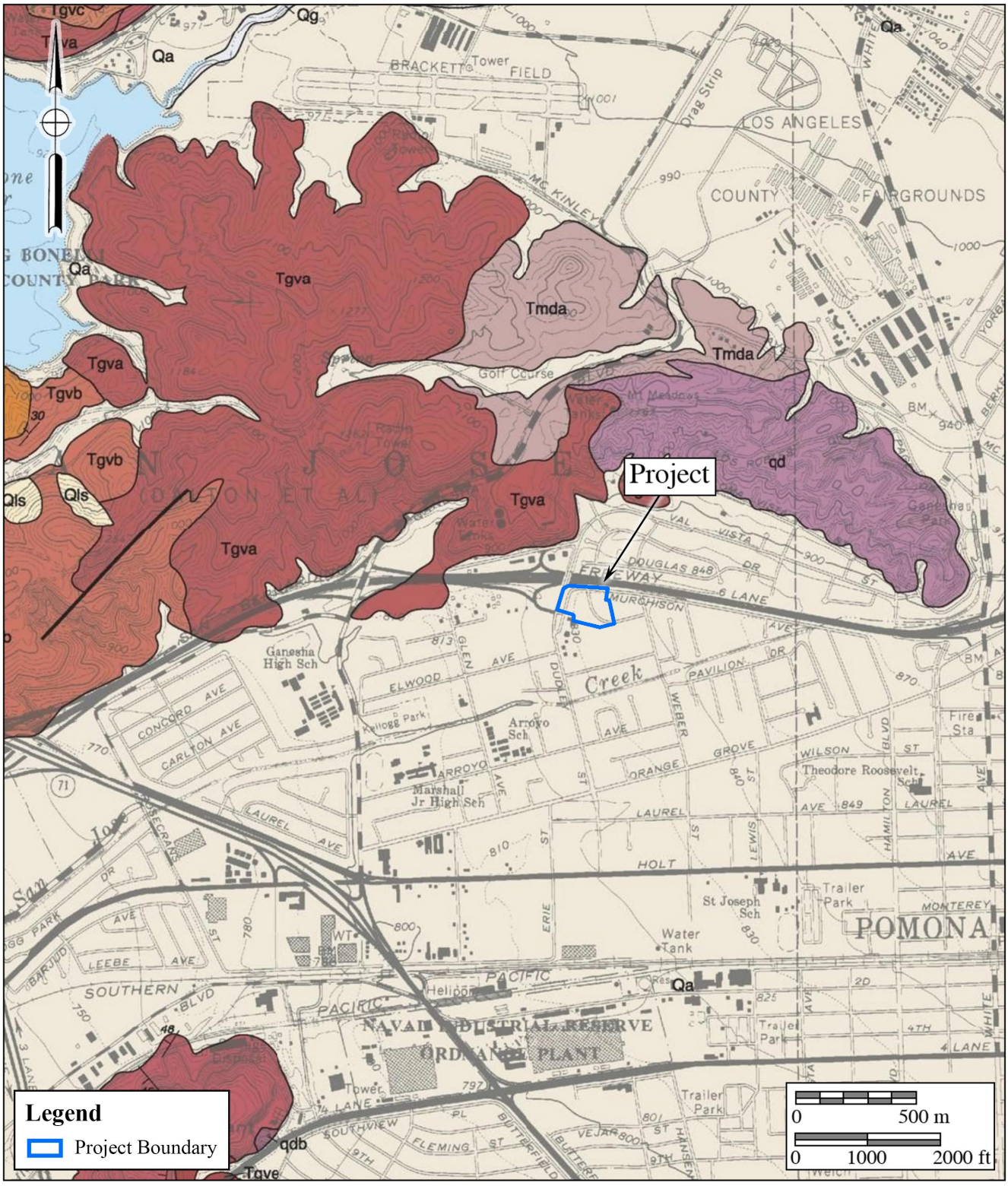

Figure 3

Geologic Map

The Dudley Pomona Project

Geology after Dibblee and Minch (2002)

X. ATTACHMENT C

Paleontological Records Search Results

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

1 November 2019

Brian F. Smith & Associates, Inc.
14010 Poway Road, Suite A
Poway, CA 92064

Attn: Todd Wirths, Senior Paleontologist

re: Paleontological Resources Records Search for the proposed Dudley Pomona Project, BFSA Project # 19-195, in the City of Pomona, Los Angeles County, project area

Dear Todd:

I have thoroughly searched our paleontology collection records for the locality and specimen data for the proposed Dudley Pomona Project, BFSA Project # 19-195, in the City of Pomona, Los Angeles County, project area as outlined on the portion of the San Dimas USGS topographic quadrangle map that you sent to me via e-mail on 18 October 2019. We have no vertebrate fossil localities that lie directly within the boundaries of the proposed project area, but we do have localities somewhat nearby from sedimentary deposits similar to those that occur at depth in the proposed project area.

Surface deposits in the entire proposed project area consist of younger Quaternary Alluvium, derived as alluvial fan deposits from San Gabriel Mountains to the north probably via the San Jose Creek drainage that currently flows immediately to the south. These younger Quaternary deposits typically do not contain significant vertebrate fossils in the uppermost layers, but they are usually underlain by older Quaternary Alluvium that may well contain significant fossil vertebrate remains. Our closest vertebrate fossil locality in older Quaternary deposits is LACM 8014, south-southeast of the proposed project area just southwest of the intersection of the Pomona Freeway (Highway 60) and the Corona Freeway (Highway 71), that produced a fossil specimen of bison, *Bison*. A little further to the south-southeast of the proposed project area our older Quaternary locality LACM 1728, situated in English Canyon southwest of the City

of Chino, produced fossil specimens of horse, *Equus*, and camel, *Camelops*, at a depth of 15 to 20 feet below the surface.

Surface grading or very shallow excavations in the younger Quaternary Alluvium exposed in the proposed project area probably will not uncover significant vertebrate fossil remains. Deeper excavations that extend down into older Quaternary deposits, however, may well encounter significant fossil vertebrate specimens. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

NOISE IMPACT ANALYSIS

DUDLEY ST. MULTI-FAMILY RESIDENTIAL PROJECT

CITY OF POMONA

Lead Agency:

City of Pomona
505 South Garey Avenue
Pomona, California 91766

Prepared by:

Vista Environmental
1021 Didrickson Way
Laguna Beach, California 92651
949 510 5355
Greg Tonkovich, INCE

Project No. 19100

October 7, 2020

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ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Pomona
cmu	Concrete masonry unit
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted decibels
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
EPA	Environmental Protection Agency
Hz	Hertz
Ldn	Day-night average noise level
Leq	Equivalent sound level
Lmax	Maximum noise level
ONAC	Federal Office of Noise Abatement and Control
OSB	Oriented Strand Board
OSHA	Occupational Safety and Health Administration
PPV	Peak particle velocity
RMS	Root mean square
SEL	Single Event Level or Sound Exposure Level
STC	Sound Transmission Class
VdB	Vibration velocity level in decibels

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Noise Impact Analysis has been prepared to determine the noise and vibration impacts associated with the proposed Dudley Street Multi-Family Residential project (proposed project). The following is provided in this report:

- A description of the study area and the proposed project;
- Information regarding the fundamentals of noise;
- Information regarding the fundamentals of vibration;
- A description of the local noise guidelines and standards;
- An evaluation of the current noise environment;
- An analysis of the potential short-term construction-related noise impacts from the proposed project; and
- An analysis of long-term operations-related noise impacts from the proposed project.

1.2 Site Location and Study Area

The project site is located in the western portion of the City of Pomona (City) at 1440 Murchison Avenue. The approximately 7.47-acre project site is currently vacant and is bounded by Interstate 10 to the north, multi-family homes to the east, Cortez Magnet School and 7-Eleven to the south, and Dudley Street to the west. The project study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are the multi-family homes located adjacent to the east side of the project site. The nearest school to the project site is Cortez Magnet School, which is located adjacent to the south side of the project site.

1.3 Proposed Project Description

The proposed project would consist of development of 152 multi-family three-story townhomes that are arraigned in five, seven and eight plexes. The townhomes range in size from 1,214 square feet to 1,822 square feet with a total building area of 235,128 square feet. Additionally, the proposed project would provide 344 total parking spaces (304 garage and 40 guest), and a common open space area that includes a pool and community building with a restroom and mail room. The proposed site plan is shown in Figure 2.

1.4 Executive Summary

Standard Noise Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the City and State of California (State).

City of Pomona Residential Noise Standards

The City of Pomona General Plan Noise Element provides the following policies that are applicable to new residential development:

Policy 7G.P2 New Residential Development

Policy 7G.P2 of the General Plan discourages the siting of new homes in areas in with project noise greater than 65 dBA CNEL. Policy 7G.P2 provides an exemption for where homes are permitted on the condition that the project incorporate mitigation to ensure that interior noise levels do not exceed 45 dB CNEL.

The following lists the City of Pomona Municipal Code regulations that are applicable to the proposed project.

Section 18-305(3) Construction Noise Standards

Section 18-305(3) of the City's Municipal Code exempts construction noise from the City noise ordinance that occurs between 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays from the City's noise standards, provided the noise level created by such activities do not exceed the noise standard of 65 dBA plus the limits specified in section 18-311(b) as measured on residential property and any vibration does not endanger the public health, welfare and safety.

Section 18-309 Vibration Standards

Section 18-309 of the Municipal Code restricts the creation of vibration that is perceptible on any nearby property. Section 18-309 of the Municipal Code defines the threshold of perception to be more than 0.05 inch per second RMS vertical Velocity.

Section 18-311(a) Exterior Noise Standards

Section 18-311(a) of the City's Municipal Code limits noise created onsite at the nearby single- -family properties to 50 dBA between 10:00 p.m. and 7:00 a.m. and 60 dBA between 7:00 a.m. and 10:00 p.m. and at the proposed multi-family properties to 50 dBA between 10:00 p.m. and 7:00 a.m. and 65 dBA between 7:00 a.m. and 10:00 p.m. .

State of California Rules

The following lists the State of California rules that are applicable to all industrial projects in the State.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

California Vehicle Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California. 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines noise checklist questions.

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?

Potentially significant impact. Implementation of Mitigation Measure 1 would reduce the impact to less than significant levels.

Generation of excessive groundborne vibration or groundborne noise levels?

Less than significant impact.

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?

Less than significant impact.

1.5 Project Design Features Incorporated into the Proposed Project

This analysis was based on implementation of the following project design features that are either already depicted on the proposed project site plan and architectural plans or are required from City and State Regulations.

Project Design Feature 1:

The project applicant shall construct the perimeter 5-foot high split face block wall as detailed in the proposed Wall Plan, with incorporation of the following height revisions that are also detailed in Figure 3:

- An 8-foot high wall shall be constructed on the northernmost 200 feet of the west perimeter wall; and
- A 6-foot high wall shall be constructed on the remainder of the west perimeter wall.

Project Design Feature 2:

The project applicant shall provide upgraded windows and exterior doors for the following residential units that are also detailed in Figure 3:

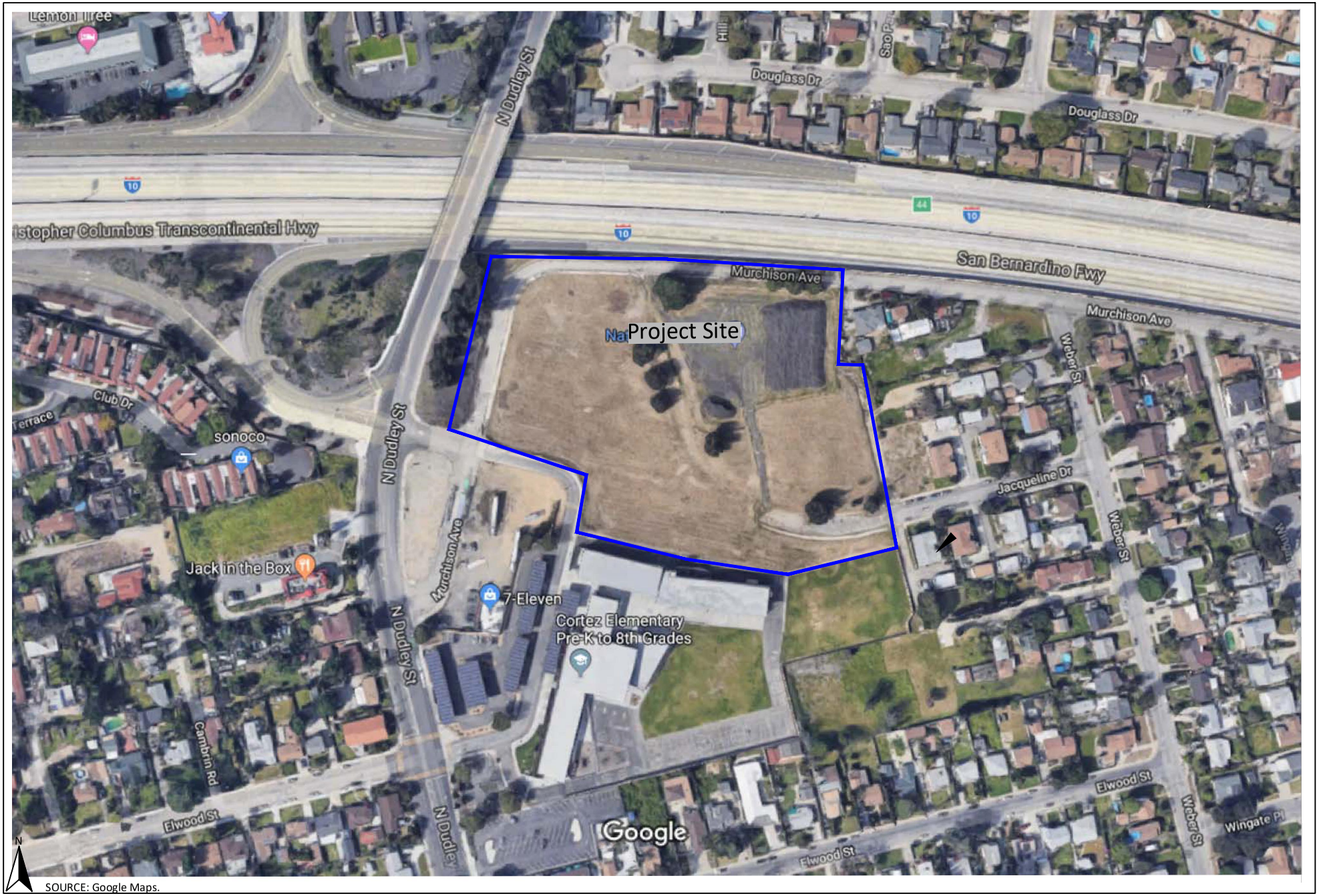
- For the northernmost units on Buildings 1 through 7, all second floor windows and exterior doors shall have a minimum Sound Transmission Class (STC) rating of 32 STC with ½-inch drywall, and all third floor windows shall have a minimum STC rating of 38 STC with 5/8-inch drywall on the exterior walls;
- For the second and third northernmost units on Buildings 1 through 7, all third floor windows shall have a minimum STC rating of 35 STC with ½-inch drywall on the exterior walls;
- For the three southernmost units on Building 1, the west facing third floor windows shall have a minimum STC rating of 35 STC with ½-inch drywall on the exterior walls; and
- For the four southernmost units on Building 7, the east facing third floor windows shall have a minimum STC rating of 35 STC with ½-inch drywall on the exterior walls.

Project Design Feature 3:
The project applicant shall provide minimum 4-foot high screening walls around the perimeter of all ground level air conditioning compressor units.

1.6 Mitigation Measures for the Proposed Project

This analysis found that through adherence to the noise and vibration regulations detailed in Section 1.4 above and through implementation of the Project Design Features detailed in Section 1.5 above, and through implementation of the following mitigation, all noise and vibration impacts would be reduced to less than significant levels and no mitigation is required.

Mitigation Measure 1:
The project applicant shall applicant to construct an 8-foot high temporary wall along the eastern property line, prior to the start of grading activities for the proposed project and shall be maintained until the completion of building construction of the easternmost buildings (Buildings 7, 14, and 15). The sound wall shall be constructed of minimum ½-inch plywood or oriented strand board (OSB) and shall be free of any cutouts or openings.



SOURCE: Google Maps.

VISTA ENVIRONMENTAL

Figure 1
Project Location Map



SOURCE: Kevin L Cook Architect, Inc.

VISTA ENVIRONMENTAL

Figure 2
Proposed Site Plan



SOURCE: Kevin L Cook Architect, Inc.

VISTA ENVIRONMENTAL

Figure 3

Locations of Proposed Sound Walls and Upgraded Windows and Doors

2.0 NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

2.1 Noise Descriptors

Noise Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The peak traffic hour Leq is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the Ldn, except that it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason the sound appears louder in the evening and nighttime hours and is weighted accordingly. The City of Pomona relies on the CNEL noise standard to assess transportation-related impacts on noise sensitive land uses.

2.2 Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown that humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a “pure tone,” there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to “stand out” against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contiguous one-third octave bands by:

- 5 dB for center frequencies of 500 hertz (Hz) and above
- 8 dB for center frequencies between 160 and 400 Hz
- 15 dB for center frequencies of 125 Hz or less

2.3 Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiate uniformly outward as it travels away from

the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

2.4 Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

3.0 GROUND-BORNE VIBRATION FUNDAMENTALS

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

3.1 Vibration Descriptors

There are several different methods that are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is "VdB", which in this text, is when L_v is based on the reference quantity of 1 micro inch per second.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration.

3.3 Vibration Propagation

The propagation of ground-borne vibration is not as simple to model as airborne noise. This is due to the fact that noise in the air travels through a relatively uniform median, while ground-borne vibrations travel through the earth which may contain significant geological differences. There are three main types of vibration propagation; surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation."

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 REGULATORY SETTING

The project site is located in the City of Pomona. Noise regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the FTA, while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the proposed project is not under the jurisdiction of the FTA, the FTA provides specific guidance for construction noise. The FTA recommends developing construction noise criteria on a project-specific basis that utilizes local noise ordinances if possible. However, local noise ordinances usually relates to nuisance and hours of allowed activity and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the noise impacts of a construction project. Project construction noise criteria should take into account the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land uses. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings for a detailed construction noise assessment are provided below in Table A.

Table A – FTA Construction Noise Criteria

Land Use	Day (dBA $Leq_{(8\text{-hour})}$)	Night (dBA $Leq_{(8\text{-hour})}$)	30-day Average (dBA Ldn)
Residential	80	70	75
Commercial	85	85	80[(1)]
Industrial	90	90	85[(1)]

Notes:
[(1)] Use a 24-hour $Leq_{(24\ hour)}$ instead of $Ldn_{(30\ day)}$.
Source: Federal Transit Administration, 2018.

The FTA also has defined what constitutes a significant noise impact from implementing a project. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings are provided below in Table B.

Table B – FTA Project Effects on Cumulative Noise Exposure

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Project Only	Combined	Noise Exposure Increase
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1
70	64	71	+1
75	65	75	0

Source: Federal Transit Administration, 2018.

As shown in Table B, the allowable cumulative noise level increase created from a project would range from 0 to 7 dBA, which is based on the existing (ambient) noise levels in the project vicinity. The justification for the sliding scale, is that people already exposed to high levels of noise should be expected to tolerate only a small increase in the amount of noise in their community. In contrast, if the existing noise levels are quite low, it is reasonable to allow a greater change in the community noise for the equivalent difference in annoyance.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Noise Standards

California Department of Health Services Office of Noise Control

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix," which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21,

Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

California Vehicle Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California. 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

Vibration Standards

Title 14 of the California Administrative Code Section 15000 requires that all state and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which requires the analysis of exposure of persons to excessive groundborne vibration. However, no statute has been adopted by the state that quantifies the level at which excessive groundborne vibration occurs.

Caltrans issued the *Transportation and Construction Vibration Guidance Manual*, April 2020. The manual provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. However, this manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous (construction-related) and transient (transportation-related) sources of vibration, which found that the human response becomes distinctly perceptible at 0.25 inch per second PPV for transient sources and 0.04 inch per second PPV for continuous sources.

4.3 Local Regulations

The City of Pomona General Plan and Municipal Code establishes the following applicable policies related to noise and vibration.

City of Pomona General Plan

The following applicable goals and policies to the proposed project are from the Noise Element of the General Plan.

The City of Pomona General Plan Noise Element provides the following policies that are applicable to new residential development:

Policy 7G.P1 As part of development review, use Figure 7-G.1 (Land Use Compatibility for Community Noise Environments) (see Figure 3, below) to determine acceptable uses and insulation requirements in noise-impacted areas.

Policy 7G.P2 Discourage location of new noise-sensitive uses, primarily residential and educational facilities, in areas with projected noise levels greater than 65 dB CNEL, as shown in Figure 7-G.2 (Future Noise Contours). Where such uses are permitted, require incorporation of mitigation measures to ensure that interior noise levels do not exceed 45 dB CNEL, including:

- Require that applicants for new noise-sensitive development, in areas subject to noise levels greater than 65 dB CNEL, first obtain the services of a professional acoustical engineer to provide a technical analysis and design of mitigation measures.

City of Pomona Municipal Code

The City of Pomona Municipal Code establishes the following applicable standards related to noise.

Section 18-305. Exemptions.

The following activities shall be exempted from this article:

(3) Noise sources associated with or vibration created by construction, repair, remodeling or grading of any real property or during authorized seismic surveys, provided such activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday, and provided the noise level created by such activities do not exceed the noise standards of 65 dB(A) plus the limits specified in Section 18-311(b) as measured on residential property and any vibration created does not endanger the public health, welfare and safety.

Section 18-309. Vibration.

Notwithstanding other sections of this article, it shall be unlawful for any person to create, maintain or cause any ground vibration which is perceptible without instruments at any point on any affected property adjoining the property on which the vibration source is located. For the purpose of this article, the perception threshold shall be presumed to be more than 0.05 inch per second RMS vertical velocity.

Section 18-311. Exterior Noise Standards.

(a) The following noise standards, unless otherwise specifically indicated, shall apply to all property within a designated noise zone:

Table C – City of Pomona Municipal Code Exterior Noise Standards

Noise Zone[1]	Time Interval	Allowable Interior Noise Level
1	10:00 p.m. to 7:00 a.m.	50 dB(A)
	7:00 a.m. to 10:00 p.m.	60 dB(A)
2	10:00 p.m. to 7:00 a.m.	50 dB(A)
	7:00 a.m. to 10:00 p.m.	65 dB(A)

Notes:
[1] Noise Zone 1 = Single-family residential properties; Noise Zone 2 = Multiple-family residential properties
Source: City of Pomona Municipal Code Article 7 Section 18-311(a)

(b) It shall be unlawful for any person at any location within the incorporated area of the city to create any noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level, when measured on any other property, to exceed the following:

(1) The noise standard for a cumulative period of more than 30 minutes in any hour;

(2) The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour;

(3) The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour;

(4) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour; or

(5) The noise standard plus 20 dB(A) for any period of time.

(c) If the ambient noise level exceeds any of the noise limit categories in subsections (b)(1) through (4) of this section, the cumulative period applicable to such category shall be increased to reflect such ambient noise level. If the ambient noise level exceeds the noise limit category in subsection (b)(5) of this section, the maximum allowable noise level under such category shall be increased to reflect the maximum ambient noise level.

(d) If the measurement location is on a boundary between two different noise zones, the lower noise level standard applicable to the noise zone shall apply.

(e) If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be determined, the measured noise level obtained while the source is in operation shall be compared directly to the allowable noise level standards as specified respective to the measurement location's designated land use and for the time of day the noise level is measured. The reasonableness of temporarily discontinuing the noise generation by an intruding noise source shall be determined by the chief of police for the purpose of establishing the existing ambient noise level at the measurement location.

Section 18-312 – Interior Noise Standards.

(a) The following noise standard, unless otherwise specifically indicated, shall apply to all residential property within all noise zones:

Table D – City of Pomona Municipal Code Interior Noise Standards

Type of Land Use	Time Interval	Allowable Interior Noise Level in dB(A)
Residential	10:00 p.m. to 7:00 a.m.	40
	7:00 a.m. to 10:00 p.m.	50

Source: City of Pomona Municipal Code Article 7 Section 18-312(a)

Each of the noise limits specified shall be reduced by five dB(A) for impulse or simple tone noises or for noises consisting of speech or music; provided, however, that if the ambient noise level exceeds the resulting standard, the ambient shall be the standard.

(b) It shall be unlawful for any person at any location within the incorporated area of the city to create any noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such a person which causes the noise level, when measured within any other residential dwelling unit in any noise zone, to exceed the following:

(1) The noise standard for a cumulative period of more than five minutes in any hour;

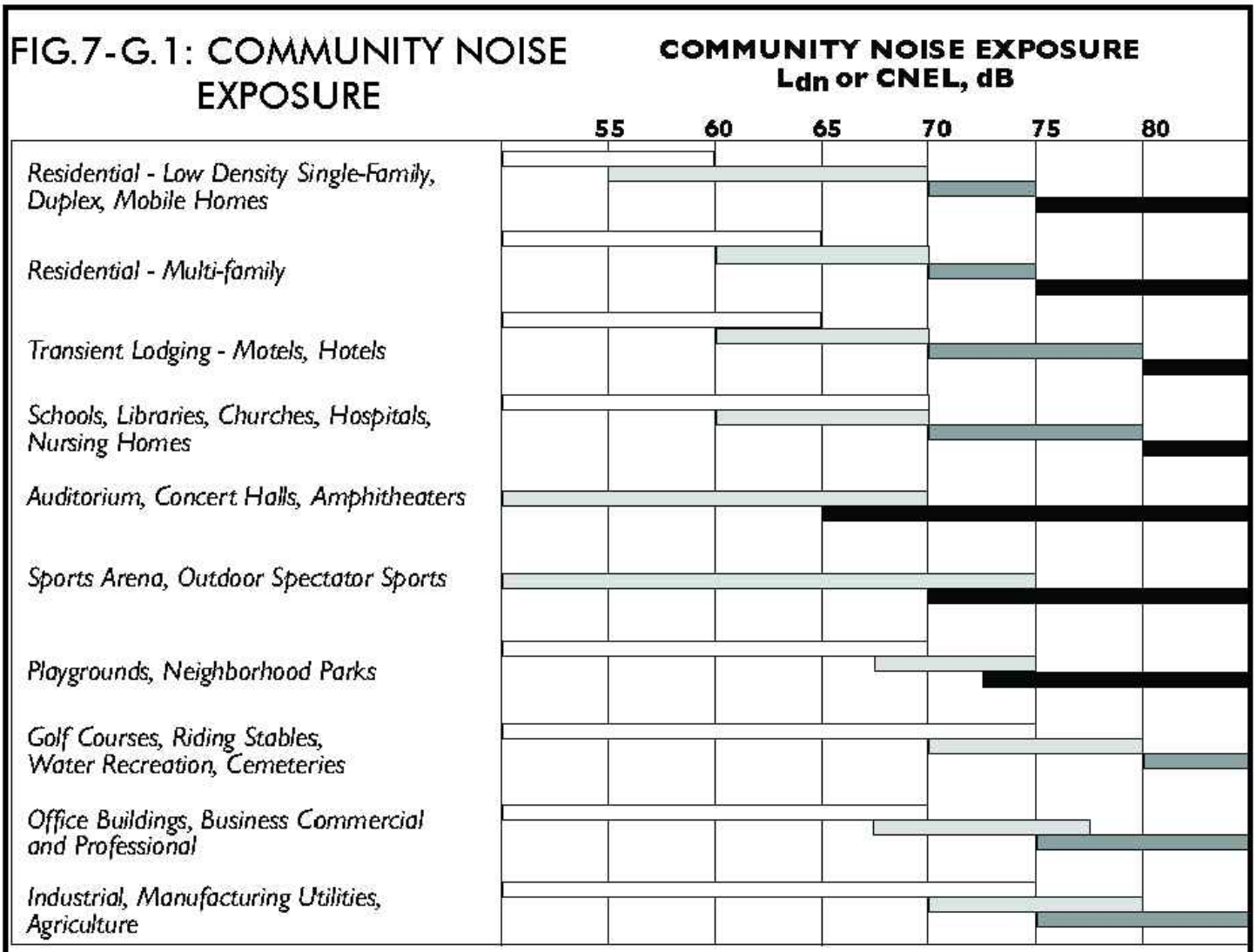
(2) The noise standard plus five dB(A) for a cumulative period of more than one minute in any hour; or

(3) The noise standard plus ten dB(A) for any period of time.

(c) If the ambient noise level exceeds any of the limit categories in subsection (b)(1) or (2) of this section, the cumulative period applicable to such category shall be increased to reflect the maximum ambient noise level. If the ambient level exceeds the noise category in subsection (b)(3) of this section, the maximum allowable noise level under such category shall be increased to reflect the maximum ambient noise level.

(d) If the measurement location is on a boundary between two different noise zones, the lower noise level standard applicable to the noise zone shall apply.

(e) If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be determined, the same procedures specified in section 18-311(e) shall be deemed proper to enforce this section.



INTERPRETATION:

NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements 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.

NORMALLY UNACCEPTABLE
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.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

SOURCE: City of Pomona, 2014.

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Figure 4
City of Pomona Community Noise Exposure Matrix

5.0 EXISTING NOISE CONDITIONS

To determine the existing noise levels, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by vehicle traffic on Interstate 10 that is adjacent to the north side of the project site as well as from Dudley Street that is adjacent to the west side of the project site. Noise is also created by the 7-Eleven that is adjacent to the south side of the project site as well as from aircraft noise associated with aircraft that follow Interstate 10 and aircraft take-offs and landings at Brackett Field Airport, that is as near as 1.2 mile north of the project site. However the aircraft and commercial noise sources are nominal compared to the vehicle noise sources in the vicinity of the project site. The following describes the measurement procedures, measurement locations, measurement results, and the modeling of the existing noise environment.

5.1 Noise Measurement Equipment

The noise measurements were taken using two Larson Davis Model LXT1 Type 1 sound level meters programmed in "slow" mode to record the sound pressure level at 1-second intervals for 24 hours in "A" weighted form. In addition, the L_{eq} averaged over the entire measuring time and L_{max} were recorded with both sound level meters. The sound level meters and microphones were mounted on a sign and fence, were placed between four and six feet above the ground and were equipped with windscreens during all measurements. The noise meters were calibrated before and after the monitoring using a Larson Davis Cal200 calibrator. All noise level measurement equipment meets American National Standards Institute specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

Noise Measurement Locations

The noise monitoring locations were selected in order to obtain noise levels at representative locations on the project site. It should be noted that the two noise measurements were taken for the due diligence analysis of the project site, which occurred prior to the Covid-19 crisis, when traffic volumes were at normal levels and the adjacent school was operational with students in attendance. During the preparation of this analysis, no additional noise measurements were taken since traffic volumes are well below historical levels and the school to the south only provides remote learning at this time. As such, any additional measurements taken in the vicinity of the nearby receptors would not represent typical noise levels and have not been performed. Descriptions of the noise monitoring sites are provided below in Table E and are shown in Figure 5. Appendix A includes a photo index of the study area and noise level measurement locations.

Noise Measurement Timing and Climate

The noise measurements were recorded between 10:59 a.m. on Monday March 18, 2019 and 11:03 a.m. on Tuesday, March 19, 2019. When the noise measurements were started the clear sky, the temperature was 76 degrees Fahrenheit, the humidity was 22 percent, barometric pressure was 29.09 inches of mercury, and no wind. Overnight, the temperature dropped to 72.5 degrees Fahrenheit. At the conclusion of the noise measurements, the sky was partly cloudy, the temperature was 70 degrees Fahrenheit, the humidity was 32 percent, barometric pressure was 29.06 inches of mercury, and the wind was blowing around three miles per hour.

5.2 Noise Measurement Results

The results of the noise level measurements are presented in Table E. The measured sound pressure levels in dBA have been used to calculate the minimum and maximum L_{eq} averaged over 1-hour intervals. Table E also shows the L_{eq}, L_{max}, and CNEL, based on the entire measurement time. The noise monitoring data printouts are included in Appendix B. Figure 6 shows a graph of the 24-hour noise measurements.

Table E – Existing (Ambient) Noise Level Measurements

Site No.	Site Description	Average (dBA L_{eq})	Maximum (dBA L_{max})	(dBA $L_{eq\ 1\text{-}hour}$/Time) Minimum	(dBA $L_{eq\ 1\text{-}hour}$/Time) Maximum	Average (dBA CNEL)
A	Located on a tree, approximately 35 feet south of north property line and 125 feet west of east property line and 125 feet south of I-10 centerline.	67.3	83.8	63.4 6:19 p.m.	69.8 6:35 a.m.	73.7
B	Located on a tree, approximately 165 feet south of north property line and 310 feet east of west property line and 255 feet south of I-10 centerline.	65.4	83.9	62.7 5:26 p.m.	67.6 6:54 a.m.	72.0

Source: : Noise measurements taken with two Larson Davis LXTI Type 1 integrating sound level meters between Monday, March 18 and Tuesday, March 19, 2019.

Table E noise classification of 70 to 75 dBA CNEL as shown in Figure 7.G-1 from the General Plan (see Figure 4, above). The "Normally Unacceptable" noise classification requires that new construction in this zone to prepare a detailed noise analysis and implement noise reduction measures that include enhanced insulation features into the proposed homes. Table E also shows that the minimum noise levels occur between 5:26 and 6:19 p.m. and the maximum noise levels occur between 6:35 and 6:54 a.m., which may seem counterintuitive, however between 5:26 and 6:19 p.m., the Freeway is at gridlock, where each vehicle is moving around 10 mph, which produces low noise levels. Between 6:35 and 6:54 a.m., this is the point in the morning, where the freeway reaches maximum volume traveling at full speed, before it starts to slow down for the morning gridlock period.

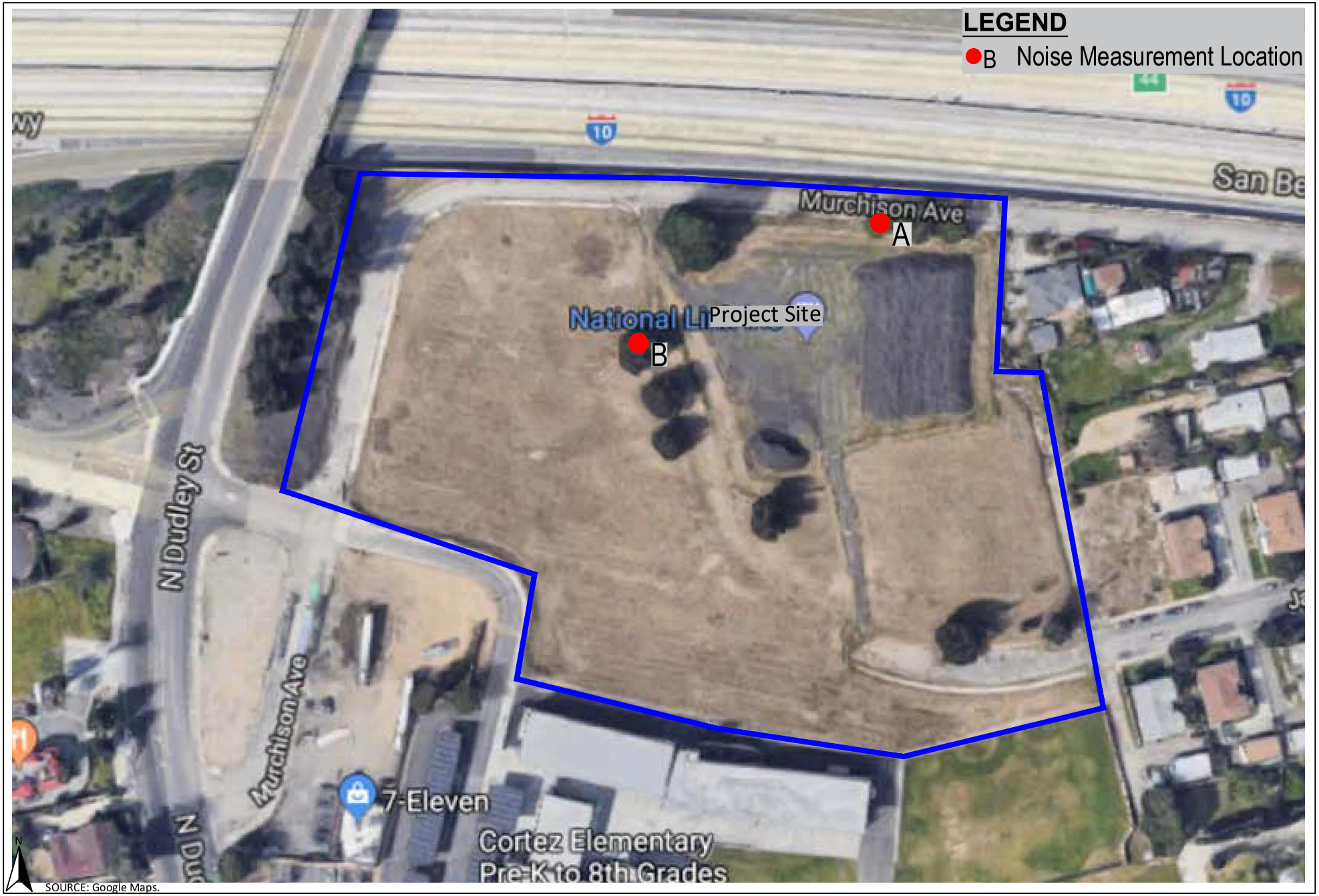
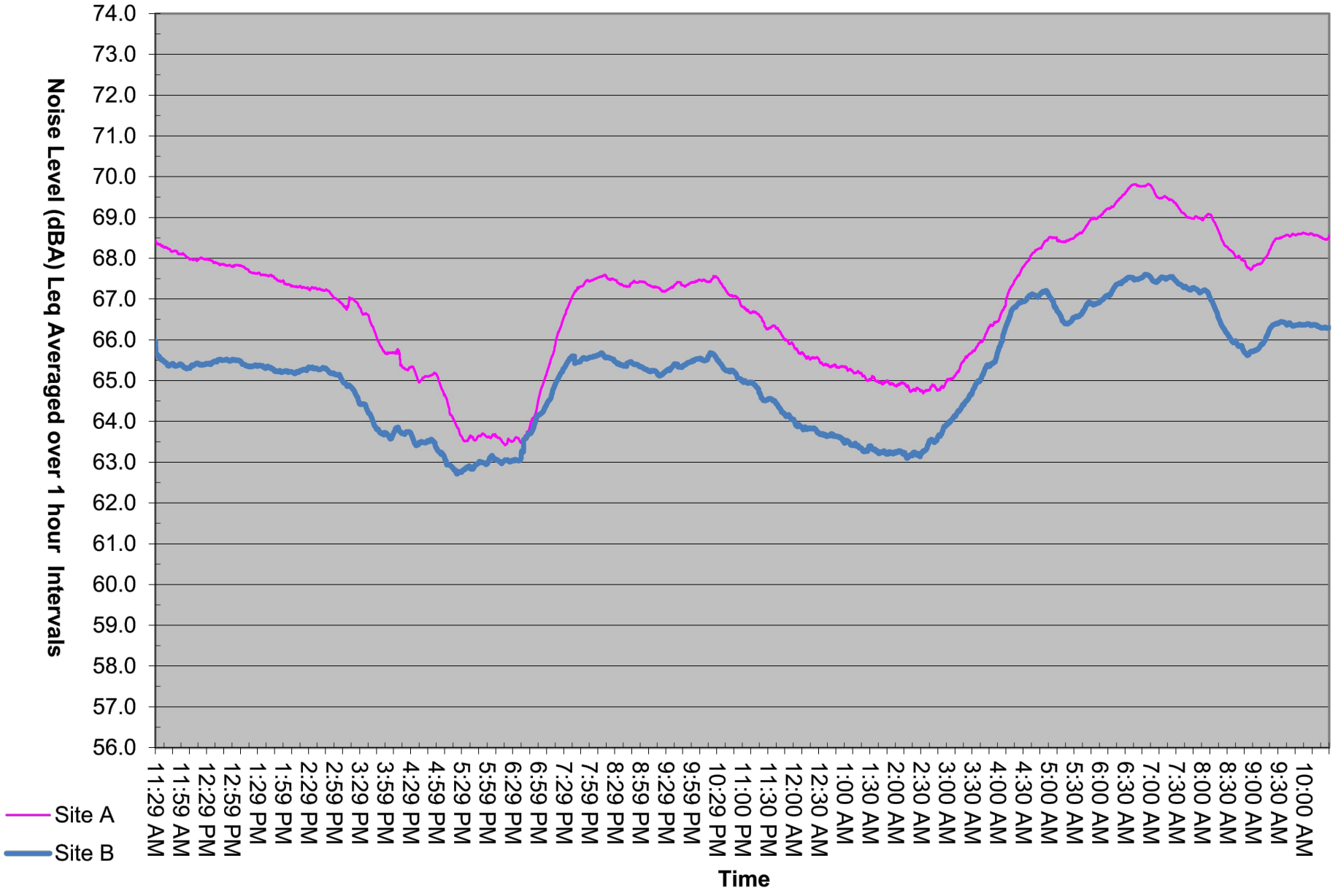


Figure 5
Field Noise Measurement Locations



SOURCE: Larson Davis LXT Type 1 Sound Level Meters.

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Figure 6
Field Noise Measurements Graph

6.0 MODELING PARAMETERS AND ASSUMPTIONS

6.1 Construction Noise

The noise impacts from construction of the proposed project have been analyzed through use of the FHWA's Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table F below provides a list of the construction equipment anticipated to be used for each phase of construction as detailed in *Air Quality, Energy, Greenhouse Gas Emissions, and Health Risk Assessment Impact Analysis Dudley St. Multi-Family Project* (Air Quality Analysis), prepared by Vista Environmental, September 22, 2020.

Table F – Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor[1] (percent)	Spec 721.560 Lmax at 50 feet[2] (dBA, slow[3])	Actual Measured Lmax at 50 feet[4] (dBA, slow[3])
Site Preparation				
Rubber Tired Dozer	3	40	85	82
Tractor, Loader or Backhoe[5]	4	40	84	N/A
Grading				
Excavator	1	40	85	81
Grader	1	40	85	83
Rubber Tired Dozer	1	40	85	82
Tractor, Loader or Backhoe[5]	2	40	84	N/A
Building Construction				
Crane	1	16	85	81
Forklift (Gradall)	3	40	85	83
Generator	1	50	82	81
Tractor, Loader or Backhoe[5]	3	40	84	N/A
Welder	1	40	73	74
Paving				
Paver	2	50	85	77
Paving Equipment	2	50	85	77
Roller	2	20	85	80
Architectural Coating				
Air Compressor	1	40	80	78

Notes:
[1] Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
[2] Spec 721.560 is the equipment noise level utilized by the RCNM program.
[3] The "slow" response averages sound levels over 1-second increments. A "fast" response averages sound levels over 0.125-second increments.
[4] Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.
[5] For the tractor/loader/backhoe, the tractor noise level was utilized, since it is the loudest of the three types of equipment.
Source: Federal Highway Administration, 2006 and CalEEMod default equipment mix.

Table F also shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearby sensitive receptors have been calculated according to the equipment noise levels and usage

factors listed in Table F and through use of the RCNM. Due to the small size of the project site, it is anticipated that construction equipment would operate of the entire work site during the course of typical workday. As such, the construction equipment was modeled based on the acoustical center of activity, or middle of the project site, which was measured to be placed 500 feet from the homes to the east and 450 feet from the school to the south..

6.2 Operations-Related Noise

The proposed project would result in increases in traffic noise to the nearby roadways as well as introduce new sensitive receptors to the project site. The noise impacts to the proposed townhomes and offsite sensitive receptors were analyzed separately and the modeling procedures are detailed below.

SoundPlan Model Assumptions

The onsite noise impacts to the proposed townhomes and common recreation areas were analyzed through use of the SoundPlan Version 8.2 noise modeling software. The SoundPlan's road noise algorithms are based on the FHWA Traffic Noise Model (FHWA TNM Model). The SoundPlan Model requires the input of roadways and the locations of the receivers. Stationary noise sources with associated frequency spectrums, sound barriers, terrain contour lines, building placement, and specific ground coverage zones may be incorporated as well. The site plan and aerial photos were used to determine the placement of nearby roads and topographical lines into the SoundPlan model. The default temperature of 20 degrees Celsius (68 degrees Fahrenheit) and default humidity of 50 percent, which can vary the propagation of noise, were used in the analysis and represent reasonable assumptions, since they are near the averages experienced in the project vicinity.

Roadway Assumptions

The SoundPlan model analyzed the noise impacts from the nearby roadways onto the project vicinity. All roads were analyzed based on a single lane equivalent noise source combining both directions of travel. The roadway parameters used for this study are presented in Table G. The roadway speeds are based on the posted speed limits. The average daily traffic (ADT) volumes for Dudley Street was obtained from *1440 Murchison Avenue Traffic Impact Analysis* (Traffic Impact Analysis), prepared by Urban Crossroads, December 9, 2019. The traffic volumes for Interstate 10 were obtained from the *2018 Annual Average Daily Truck Traffic on the California State Highway System*, prepared by Caltrans which found Interstate 10 had 216,000 ADT east of State Route 57. In order to determine the traffic volumes for existing year 2020 and horizon year 2040, the ADT was increased by one percent per year to account for ambient growth on Interstate 10. The existing volumes were utilized to calibrate the model and the horizon year 2040 plus project volumes were utilized to calculate the anticipated worst-case noise impacts to the proposed homes and common recreation areas.

Table G – SoundPlan Model Roadway Parameters

Roadway	Road Segment	Near-Far Lane Distance (feet)	Vehicle Speed (MPH)	Average Daily Traffic	
				Existing	2040 + Project
Dudley Street	North of I-10 Eastbound Ramps	Minor Arterial	40	7,200	9,100
Dudley Street	South of I-10 Eastbound Ramps	Minor Arterial	30	6,300	7,900
Interstate 10	East of State Route 57	Freeway	65/55[1]	220,400	268,900

Notes:

[1] The existing scenario was based on an average speed of 65 mph and the Horizon year 2040 was based on an average speed of 55 mph due to the anticipated future congested conditions on I-10.
Source: Caltrans, 2019; Urban Crossroads, 2019.

The vehicle mixes used in the SoundPlan Model are shown in Table H. The vehicle mix for Interstate 10 is based on Caltrans data and the other roadways are based on typical vehicle mixes observed in Southern California.

Table H – Roadway Vehicle Mixes

	Traffic Flow Distributions			
Vehicle Type	Day (7 a.m. to 7 p.m.)	Evening (7 p.m. to 10 p.m.)	Night (10 p.m. to 7 a.m.)	Overall
Collector and Local Roads				
Automobiles	67.1%	12.6%	15.5%	97.0%
Medium Trucks	1.3%	0.2%	0.5%	2.0%
Heavy Trucks	0.6%	0.1%	0.3%	1.0%
Major, Primary, and Secondary Arterial Roads				
Automobiles	69.5%	12.9%	9.6%	92.0%
Medium Trucks	1.4%	0.1%	1.5%	3.0%
Heavy Trucks	2.4%	0.1%	2.5%	5.0%
Interstate 10				
Automobiles	61.6%	8.4%	23.3%	93.3%
Medium Trucks	1.1%	0.2%	0.6%	1.8%
Heavy Trucks	2.5%	0.4%	2.0%	4.9%

Source: Caltrans, 2019; Vista Environmental.

Sound Wall Assumptions

There is currently an approximately 16-foot high concrete masonry unit (cmu) wall located on the south side of Interstate 10, adjacent to the project site. However, however there is a gap in the sound wall next to Dudley Street. Project Design Feature 1 has been incorporated into the proposed project to address this gap on the Interstate 10 sound wall, which requires the northernmost 200 feet of the west perimeter wall to be 8 feet high. The remainder of the perimeter wall is anticipated to be 6 feet high. The proposed wall heights for Project Design Feature 1 are depicted above in Figure 3. In order to account for the sound attenuation provided by these walls, the walls were modeled in the SoundPlan model based on absorption and reflection rates associated with a concrete block wall.

Modeling Calibration

Receivers were placed at the locations of the 24-hour noise measurement sites in order to assist in the calibration of the model as well as to verify the accuracy of the SoundPlan Model. Table I below provides a summary of the calculated results and a comparison to the measured results shown above in Table E. The SoundPlan Model printouts for the model calibration are provided in Appendix C and Figure 7 shows the existing noise contours of the project vicinity.

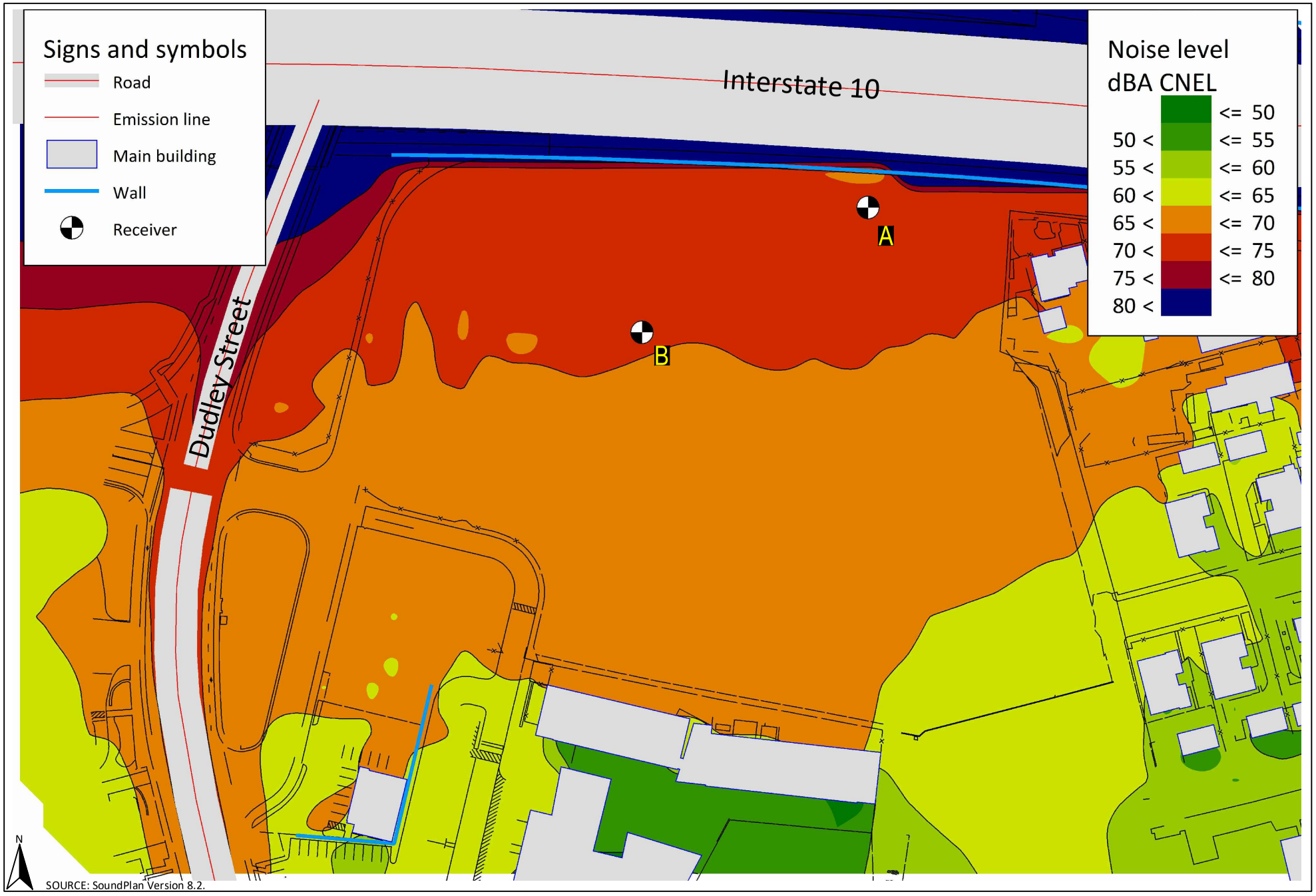

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Figure 7
Existing Noise Contours

Table I – SoundPlan Model Calibration to Existing Noise Levels

Site No.	Site Description	Measured Noise Level[1] (dBA CNEL)	Calculated Noise Level[2] (dBA CNEL)	Difference
A	Located approximately 35 feet south of north property line and 125 feet west of east property line and 125 feet south of I-10 centerline.	73.7	71.8	-1.9
B	Located approximately 165 feet south of north property line and 310 feet east of west property line and 255 feet south of I-10 centerline.	72.0	71.1	-0.9

Notes:
[1] Noise measurements taken on Monday, March 18 and Tuesday, March 19, 2019.
[2] Noise Level Calculated from SoundPlan Version 8.2.

Table I above shows that the SoundPlan Model is within 1.9 dBA of the field noise measurements, which is within the range of allowed tolerances as described in Section 5.4.1, Routine Model Calibration, of the *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (TeNS), prepared by Caltrans, 2013, for the multiple range of noise sources impacting the project site. Therefore, based on the noise measurements, the SoundPlan Model provides an accurate representation of the project area noise levels.

FHWA Model Methodology

The proposed project would result in increases in traffic noise to the nearby roadways as well as introduce new sensitive receptors to the project site. The project impacts to the offsite roadways as well as the nearby roadway impacts to the proposed homes were analyzed through use of the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108 (FHWA Model). The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the reference energy mean emission level to account for: the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT) and the percentage of ADT which flows during the day, evening and night, the travel speed, the vehicle mix on the roadway, which is a percentage of the volume of automobiles, medium trucks and heavy trucks, the roadway grade, the angle of view of the observer exposed to the roadway and site conditions ("hard" or "soft" relates to the absorption of the ground, pavement or landscaping).

It should be noted that the FHWA Model only calculates the noise impacts from one roadway segment and that Interstate 10 is the predominate noise source in the entire study area. As such, the actual noise levels along the analyzed roadways, which is a combination of noise from the adjacent road and Interstate 10 would be higher than what is shown. The use of the FHWA model provides a worst-case analysis of the project impacts on the nearby roads, as the project contribution to the overall noise would be much less than what is reported by the FHWA Model.

To assess the roadway noise generation in a uniform manner, all vehicles have been analyzed in the FHWA Model at the single lane equivalent acoustic center of the roadway being analyzed. In order to determine the height above the road grade where the noise is being emitted from, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of the elevation of the exhaust pipe, tires and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

FHWA Model Traffic Noise Prediction Model Inputs

The roadway parameters used for this study are presented in Table J. The roadway classifications are based on the City's General Plan Circulation Element. The roadway speeds are based on the posted speed limits. The distance to the nearest sensitive receptor was determined by measuring the distance from the roadway centerline to the nearest sensitive receptor. Since the study area is located in a suburban environment and landscaping exists along most of the nearby roadways, soft site conditions were modeled.

Table J – FHWA Model Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (MPH)	Distance to Nearest Receptor (feet)
Dudley Street	North of Gillette Road	Collector	30	40
Dudley Street	South of Gillette Road	Minor Arterial	35	60
Dudley Street	South of I-10 Eastbound Ramps	Minor Arterial	35	60
Dudley Street	South of Murchison Avenue	Minor Arterial	35	55

Source: Vista Environmental; and City of Pomona, 2014.

The average daily traffic (ADT) volumes were obtained from the Traffic Impact Analysis (Urban Crossroads, 2019). The ADT volumes have been provided for both without project and with project conditions for the existing, opening year 2022, and horizon year 2040. The ADT volumes used in this analysis are shown in Table K.

Table K – FHWA Model Average Daily Traffic Volumes

		Average Daily Traffic Volumes					
Road	Road Segment	Existing	Existing + Project	Year 2022 No Project	Year 2022 + Project	Year 2040 No Project	Year 2040 + Project
Dudley Street	North of Gillette Road	2,200	2,200	2,300	2,400	2,700	2,700
Dudley Street	South of Gillette Road	7,200	7,500	7,600	7,900	8,800	9,100
Dudley Street	South of I-10 Eastbound Ramps	6,300	6,400	6,700	6,800	7,800	7,900
Dudley Street	South of Murchison Avenue	6,400	6,700	6,800	7,100	7,900	8,200

Source: Urban Crossroads, 2019.

The vehicle mixes used in the FHWA-RD-77-108 Model were based on both of the non-freeway vehicle mixes shown above in Table H.

6.3 Exterior to Interior Attenuation Rates for the Proposed Townhomes

In order to calculate the exterior to interior attenuation rates for the proposed townhomes, the architectural plans were utilized to calculate representative rooms within the apartment building. For each room the floor area covered by carpet was calculated along with the total square footage of the ceilings and walls, in order to determine the sound absorption rate of the room. The area of exterior walls

and windows were also calculated in order to determine the exterior transmission levels. The windows were based on standard dual pane windows that have a 26 STC Rating as well as a variety of upgraded windows and doors that have 32 STC, and 35 STC ratings and standard stucco walls with ½-inch drywall that has a 46 STC Rating. In addition, the most noise impacted rooms are based on upgraded windows that have 38 STC rating and 5/8-inch drywall. The exterior to interior noise reduction was then determined by combining the calculated room absorption rate to the exterior to interior transmission calculations. Since the second floor windows and doors and third floor windows will require different STC ratings, they are shown separately, with the second floor shown in Table L and third floor shown in Table M and Appendix D shows the calculated exterior to interior noise reduction rates for representative rooms within the townhomes.

Table L – Proposed Townhomes Second Floor Rooms Exterior to Interior Noise Reduction Rates

Plan	Room Type	Exterior to Interior Noise Reduction (dBA)	
		STC 26 Windows/Doors & ½" Drywall[1]	STC 32 Windows/Doors & ½" Drywall[2]
1	Great Room/Kitchen	28	34
2	Great Room/Kitchen	28	34
	Bedroom 3	33	38
3Y	Great Room/Kitchen	29	34
	Bedroom 3	27	33
Second Floor Minimum Exterior to Interior Noise Reduction		**27**	**33**

Notes:
[1] Based on standard dual pane windows and exterior doors with a 26 STC rating, which are required per Title 24 energy saving requirements.
[2] Based on upgraded dual pane windows and exterior doors with a 32 STC rating.
Source: Kinsler, 2000; Harris, 1994.

Table L above shows that for the second floor of the proposed townhomes the standard 26 STC rated dual paned windows and doors would provide a minimum or 27 dBA exterior to interior noise reduction and upgraded 32 STC rated windows and doors would provide a minimum of 33 dBA exterior to interior noise reduction.

Table M – Proposed Townhomes Third Floor Rooms Exterior to Interior Noise Reduction Rates

Plan	Room Type	Exterior to Interior Noise Reduction[1] (dBA)		
		STC 26 Windows & ½" Drywall[2]	STC 35 Windows & ½" Drywall[3]	STC 38 Windows & 5/8" Drywall
1	Master Bedroom	31	38	42
	Bedroom 2	30	38	42
2	Master Bedroom	32	40	43
	Bedroom 2	33	40	43
3Y	Master Bedroom	30	38	42
	Bedroom 2	30	40	44
Third Floor Minimum Exterior to Interior Noise Reduction		**30**	**38**	**42**

Notes:
[1] There are no exterior doors on the third floor.

[2] Based on standard dual pane windows and exterior doors with a 26 STC rating and wall assembly with a 46 STC rating, which are required per Title 24 energy saving requirements.
[3] Based on upgraded dual pane windows and exterior doors with a 35 STC rating and wall assembly with a 46 STC rating.
[4] Based on acoustical performance dual pane windows with a 38 STC rating and wall assembly with a 50 STC rating.
Source: Kinsler, 2000; Harris, 1994.

Table M above shows that for the third floor of the proposed townhomes the standard 26 STC rated dual paned windows and doors would provide a minimum of 30 dBA exterior to interior noise reduction, upgraded 35 STC rated windows would provide a minimum of 38 dBA exterior to interior noise reduction, and acoustical performance 38 STC rated windows with 5/8-inch drywall would provide a minimum of 42 dBA exterior to interior noise reduction.

6.4 Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table N gives approximate vibration levels for particular construction activities. The data in Table N provides a reasonable estimate for a wide range of soil conditions.

Table N – Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v)at 25 feet
Pile driver (impact)	Upper range	1.518	112
	typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drill		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration, September, 2018.

The construction-related vibration impacts have been calculated through the vibration levels shown above in Table N and through typical vibration propagation rates. The equipment assumptions were based on the equipment lists provided above in Table F.

7.0 IMPACT ANALYSIS

7.1 CEQA Thresholds of Significance

Consistent with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- 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;
- Generation of excessive groundborne vibration or groundborne noise levels; or
- 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.

7.2 Generation of Noise Levels in Excess of Standards

The proposed project would not generate 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. The following section calculates the potential noise emissions associated with the temporary construction activities and long-term operations of the proposed project and compares the noise levels to the City standards.

Construction-Related Noise

Construction activities for the proposed project are anticipated to include site preparation and grading of the 7.47 acre project site, building construction of the 152 townhomes, paving of the onsite roads and parking areas and application of architectural coatings. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest sensitive receptors to the project site are the multi-family homes located adjacent to the east side of the project site and Cortez Magnet School, located adjacent to the south side of the project site.

Section 18-305(3) of the City's Municipal Code exempts construction noise provided: (1) That construction activities occur between 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays from the City's noise standards; and (2) Noise levels created by construction activities do not exceed 65 dBA at any nearby residential property. Since the City does not provide any limits to the noise levels that may be created from construction activities at the nearby school, the FTA construction noise criteria thresholds detailed above in Section 4.1 have been utilized, which shows that a significant construction noise impact would occur if construction noise exceeds 80 dBA Leq over an eight-hour period during the daytime at the nearby school.

Construction noise impacts to the nearby sensitive receptors have been calculated through use of the RCNM and the parameters and assumptions detailed in Section 6.1 of this report including Table F – Construction Equipment Noise Emissions and Usage Factors. The results are shown below in Table O and the RCNM printouts are provided in Appendix E.

Table O – Construction Noise Levels at the Nearby Sensitive Receptors Prior to Mitigation

Construction Phase	Construction Noise Level (dBA Leq) at:	
	Homes to East	School to South
Site Preparation	68	69
Grading	66	67
Building Construction	68	69
Paving	62	63
Painting	54	55
Construction Noise Threshold[1]	**65**	**80**
Exceed Thresholds?	**Yes**	No

Notes:
[1] Construction Noise Threshold for homes to east based on Section18-305 of the Municipal Code and for school to south based on FTA construction noise threshold obtained from Table A above.
Source: RCNM, Federal Highway Administration, 2006

Table O shows that the greatest noise impacts would occur during the site preparation and building construction phases of construction of the project, with a noise level as high as 68 dBA Leq at the homes to the east and 69 dBA Leq at the school to the south. Table O shows that none of the phases of construction would exceed the FTA construction noise standard of 80 dBA at the school to the south. Table O also shows that the construction noise during the site preparation, grading and building construction phases would exceed the City's construction noise standard of 65 dBA at the homes to the east. This would be considered a significant impact.

Mitigation Measure 1 is provided that would require the applicant to construct an 8-foot high temporary wall along the eastern property line, prior to the start of grading activities for the proposed project and shall be maintained until the completion of building construction of the easternmost buildings (Buildings 7, 14, and 15).

According to Caltrans (Caltrans, 2013), a sound wall provides approximately 5 dB of attenuation at the height where it blocks the line-of-sight. Since an 8-foot high wall is more than adequate to block the line of sight between the construction equipment and the residents of the homes to the east, it is anticipated that Mitigation Measure 1 would provide at least 5 dB of noise attenuation for the homes to the east. The RCNM Model was re-run with implementation of Mitigation Measure 1 and the results are shown in Table P and the RCNM printouts are provided in Appendix E.

Table P – Mitigated Construction Noise Levels at the Nearby Sensitive Receptors

Construction Phase	Construction Noise Level (dBA Leq) at:	
	Homes to East	School to South
Site Preparation[1]	63	69
Grading[1]	61	67
Building Construction[1]	63	69
Paving	62	63
Painting	54	55
Construction Noise Threshold[2]	**65**	**80**
Exceed Thresholds?	No	No

Notes:

[1] 5 dB of attenuation was added to the homes to the east in the RCNM Model in order to account for the 8-foot high wall detailed in Mitigation Measure 1.
[2] Construction Noise Threshold for homes to east based on Section18-305 of the Municipal Code and for school to south based on FTA construction noise threshold obtained from Table A above.
Source: RCNM, Federal Highway Administration, 2006

Table P shows that with implementation of Mitigation Measure 1, the noise levels from all phase of construction at the homes to the east would be below the City's construction noise standard of 65 dBA. Therefore, with implementation of Mitigation Measure 1 and the construction time restrictions detailed in Section 18-305(3) of the Municipal Code, construction noise impacts would be less than significant.

Operational-Related Noise

The proposed project would consist of the development of 152 multi-family three-story townhomes. Potential noise impacts associated with the operations of the proposed project would be from project-generated vehicular traffic on the nearby roadways and from onsite noise sources to the adjacent school and residential properties. In addition, the project site is located in close proximity to Dudley Avenue and Interstate 10, which may create exterior and interior noise levels in excess of City standards at the proposed homes. The noise impacts created from project generated vehicular traffic on the nearby roadways and from onsite noise sources as well as the noise impacts to the proposed residential common areas and interiors of the proposed homes have been analyzed separately below.

Project Generated Roadway Vehicular Noise Impacts to Offsite Sensitive Receptors

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The proposed project does not propose any uses that would require a substantial number of truck trips and the proposed project would not alter the speed limit on any existing roadway so the proposed project's potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic that would occur with development of the proposed project.

Since neither the General Plan or Municipal Code defines what an increase in roadway noise would be considered significant, the noise increase threshold guidance provided by the Federal Transit Administration for a moderate impact that has been detailed above in Table B and shows that the project contribution to the noise environment can range between 0 and 7 dB, which is dependent on the existing noise levels.

The potential offsite traffic noise impacts created by the on-going operations of the proposed project have been analyzed through utilization of the FHWA model and parameters described above in Section 6.2 and the FHWA model traffic noise calculation spreadsheets are provided in Appendix F. The proposed project's potential offsite traffic noise impacts have been analyzed for the existing year, opening year 2022, and horizon year 2040 scenarios that are discussed separately below.

Existing Year Conditions

The proposed project's potential offsite traffic noise impacts have been calculated through a comparison of the Existing scenario to the Existing With Project scenario. The results of this comparison are shown in Table Q.

Table Q – Existing Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor[1] Existing	Existing Plus Project	Project Contribution	Increase Threshold[2]
Dudley Street	North of Gillette Road	55.7	55.7	0.0	+3 dBA
Dudley Street	South of Gillette Road	60.8	61.0	0.2	+2 dBA
Dudley Street	South of I-10 Eastbound Ramps	60.2	60.3	0.1	+2 dBA
Dudley Street	South of Murchison Avenue	61.0	61.2	0.2	+2 dBA

Notes:
[1] Distance to nearest sensitive receptors shown in Table J, does not take into account existing noise barriers.
[2] Increase Threshold obtained from the FTA's allowable noise impact exposures detailed above in Table B..
Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table Q shows that the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the traffic noise increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the existing conditions. Impacts would be less than significant.

Opening Year 2022 Conditions

The proposed project's potential offsite traffic noise impacts have been calculated through a comparison of the opening year 2022 scenario to the opening year 2022 with project scenario. The results of this comparison are shown in Table R.

Table R – Opening Year 2022 Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor[1] Year 2022	Year 2022 Plus Project	Project Contribution	Increase Threshold[2]
Dudley Street	North of Gillette Road	55.9	56.1	0.2	+3 dBA
Dudley Street	South of Gillette Road	61.1	61.2	0.1	+2 dBA
Dudley Street	South of I-10 Eastbound Ramps	60.5	60.6	0.1	+2 dBA
Dudley Street	South of Murchison Avenue	61.2	61.4	0.2	+2 dBA

Notes:
[1] Distance to nearest sensitive receptors shown in Table J, does not take into account existing noise barriers.
[2] Increase Threshold obtained from the FTA's allowable noise impact exposures detailed above in Table B.
Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table R shows that the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the traffic noise increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the opening year 2022 conditions. Impacts would be less than significant.

Horizon Year 2040 Conditions

The proposed project's potential offsite traffic noise impacts have been calculated through a comparison of the horizon year 2040 scenario to the horizon year 2040 with project scenario. The results of this comparison are shown in Table S.

Table S – Horizon Year 2040 Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor[1] Year 2040	Year 2040 Plus Project	Project Contribution	Increase Threshold[2]
Dudley Street	North of Gillette Road	56.7	56.7	0.0	+3 dBA
Dudley Street	South of Gillette Road	61.7	61.8	0.1	+2 dBA
Dudley Street	South of I-10 Eastbound Ramps	61.2	61.2	0.0	+2 dBA
Dudley Street	South of Murchison Avenue	61.9	62.0	0.1	+2 dBA

Notes:
[1] Distance to nearest sensitive receptors shown in Table J, does not take into account existing noise barriers.
[2] Increase Threshold obtained from the FTA's allowable noise impact exposures detailed above in Table B.
Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table S shows that the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the traffic noise increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the horizon year 2040 conditions. Impacts would be less than significant.

Project Generated Onsite Noise Impacts to Offsite Sensitive Receptors

The operation of the proposed project may create an increase in onsite noise levels from noise created from the proposed ground level air conditioning compressor units and pool area. Section 18-311(a) of the City's Municipal Code limits noise created on multi-family properties to 50 dBA between 10:00 p.m. and 7:00 a.m. and 65 dBA between 7:00 a.m. and 10:00 p.m. at the nearby properties.

In order to determine the noise impacts from the proposed air conditioner units and pool area reference noise measurements were taken of each noise source and are shown in Table T. Table T also shows the anticipated noise level from each source at the nearest off-site receptors. The operational reference noise measurements and sound wall noise reduction calculations are shown in Appendix G.

Table T – Project Operational Noise Levels at the Adjacent Residential and School Properties

Noise Source	At Residential Property Line to East: Distance - Source to Property Line (feet)	Noise Level[1] (dBA Leq)	At School Property Line to South: Distance - Source to Property Line (feet)	Noise Level[2] (dBA Leq)
Air Conditioning Equipment[3]	40	48	60	44
Pool Area[4]	530	31	140	42
Combined Noise Level from all Sources		**48**	--	**46**
City Noise Standard (Day/Night)		**65/50**		**65/50**
Exceed City Noise Standard (Day/Night)?		**No/No**		**No/No**

Notes:
[1] The calculated noise levels account for the noise reduction provided by the proposed 5-foot high wall on the east property line a 4-foot wall around the perimeter of the compressor units (see Appendix G).
[2] The calculated noise levels account the noise reduction provided by the proposed 5-foot high wall around the pool and a 4-foot wall around the perimeter of the compressor units (see Appendix G).
[3] The air conditioning equipment was based on a noise measurement 10 feet from an operational air conditioning compressor unit that measured 66.6 dBA Leq.
[4] The pool area was based on a noise measurement as near as 15 feet from a pool area with 50 people that measured 66.6 dBA Leq.
Source: Noise calculation methodology from Caltrans, 2013.

Table T shows that the combined noise levels from all onsite sources occurring simultaneously would be as high as 48 dBA at the shared property line with the residential uses to the east and 46 dBA at the shared property line with the school to the south. The worst-case combined noise levels would be within both the City's daytime noise standard of 65 dBA and nighttime noise standard of 50 dBA. Therefore, with implementation of Project Design Feature 3, onsite operational noise impacts would be less than significant.

Noise Impacts to the Proposed Townhomes

The proposed project would consist of the development of a 152 multi-family three-story townhomes. The project site is located in close proximity to Dudley Street and Interstate 10, which may create exterior and interior noise levels in excess of City standards at the proposed homes and common recreation areas.

Policy 7G.P2 of the General Plan discourages the siting of new homes in areas in with project noise greater than 65 dBA CNEL. Policy 7G.P2 provides an exemption for where homes are permitted on the condition that the project incorporate mitigation to ensure that interior noise levels do not exceed 45 dB CNEL. Since the proposed project is designated as Urban Neighborhood (6E) in the General Plan, the proposed townhomes are an allowed use on the project site. In addition, the noise mitigation for the proposed project has been addressed through a multifaceted approach that includes implementation of Project Design Feature 1 that requires a sound wall to be constructed on the west side of the project site and Project Design Feature 2 that requires installation of upgraded windows in the noise impacted townhomes, in order to reduce the interior noise levels. As such, the proposed project meets the allowed exemption to the 65 dBA CNEL requirement detailed in Policy 7G.P2 on the condition that the interior noise levels do not exceed 45 dB CNEL.

To assess the interior noise levels related to compliance with the 45 dBA CNEL interior noise standard from exterior noise sources including Dudley Street and Interstate 10, the SoundPlan model was utilized to calculate the exterior noise levels at representative locations on the facade of the proposed residential townhomes and then the calculated exterior to interior attenuation rates (see Section 6.3) were subtracted from the calculated exterior noise levels in order to determine the anticipated interior noise levels of the representative rooms in the townhomes. The parameters utilized in the SoundPlan model are detailed above in Section 6.2. Since Section 6.3 shows that the second floor rooms provided lower exterior to interior noise reduction rates than the third floor rooms, the first and second floor rooms have been analyzed together and the results are shown below in Table U and the third floor rooms have been analyzed together and the results are shown below in Table V. The SoundPlan model printouts are provided in Appendix H and the horizon year 2040 with project noise contours are shown in Figure 8.

Table U – Proposed Residential Townhomes First and Second Floor Interior Noise Levels

Building	Location	Floor	Exterior Noise Level at Building Façade (dBA CNEL)	Interior Noise Levels (dBA CNEL)	
				Standard Windows[1] (26 STC)	Upgraded Windows[2] (32 STC)
1	North Side	1	69.3	42.3	--
		2	74.5	**47.5**	41.5
2	West Side	1	66.8	39.8	--
		2	70.4	43.4	--
3	North Side	1	70.7	43.7	--
		2	76.8	**49.8**	43.8
4	East Side	1	63.9	36.9	--
		2	67.9	40.9	--
5	North Side	1	70.7	43.7	--
		2	77.1	**50.1**	44.1
6	East Side	1	69.0	42.0	--
		2	74.3	**47.3**	41.3
7	East Side	1	66.9	39.9	--
		2	70.2	43.2	--
8	West Side	1	66.8	39.8	--
		2	67.4	40.4	--

Notes:
[1] A minimum 27 dBA noise reduction has been calculated for standard 26 STC windows and ½-inch drywall (see Table L).
[2] A minimum 33 dBA noise reduction has been calculated for upgraded 32 STC windows and ½-inch drywall (see Table L).
Exceedance of City 45 dBA CNEL noise standard shown in **bold and underline.**
Source: SoundPlan Model Version 8.2.

Table U shows that only the northernmost units on Buildings 1 through 8 would exceed the City's 45 dBA CNEL residential interior noise standard with standard windows and exterior doors. Table U also shows that with implementation of the upgraded windows with an STC 32 rating that is detailed in Project Design Feature 2, all second floor rooms would meet the City's 45 dBA CNEL interior noise standard. Therefore, with implementation of Project Design Feature 2, interior noise impacts would be less than significant for the first and second floors of the proposed townhomes.

Table V – Proposed Residential Townhomes Third Floor Interior Noise Levels

Building	Location	Floor	Exterior Noise Level at Building Façade (dBA CNEL)	Interior Noise Levels (dBA CNEL)		
				Standard Windows[1] (26 STC)	Upgraded Windows[2] (35 STC)	Acoustic Performance Windows[3] (38 STC)
1	North Side	3	82.0	**52.0**	44.0	--
2	West Side	3	74.5	44.5	--	--
3	North Side	3	86.2	**56.2**	**48.2**	44.2
4	East Side	3	72.8	42.8	--	--
5	North Side	3	86.4	**56.4**	**48.4**	44.4
6	East Side	3	83.0	**53.0**	45.0	--
7	East Side	3	75.3	**45.3**	37.3	--
8	West Side	3	69.5	39.5	--	--

Notes:
[1] A minimum 30 dBA noise reduction has been calculated for standard 26 STC windows and ½-inch drywall (see Table M).
[2] A minimum 38 dBA noise reduction has been calculated for upgraded 35 STC windows and ½-inch drywall (see Table M).
[3] A minimum 42 dBA noise reduction has been calculated for acoustical performance dual pane 38 STC windows and 5/8-inch drywall (see Table M).
Exceedance of City 45 dBA CNEL noise standard shown in **bold and underline.**
Source: SoundPlan Model Version 8.2.

Table V shows that only the northernmost units on Buildings 1 through 8 would exceed the City's 45 dBA CNEL residential interior noise standard with standard windows doors. Table V also shows that with implementation of the acoustical performance windows with an STC 40 rating for the northernmost units and with implementation of upgraded windows with an STC 35 rating for the second and third units from the north that are detailed in Project Design Feature 2, all third floor rooms would meet the City's 45 dBA CNEL interior noise standard. Therefore, with implementation of Project Design Feature 2, interior noise impacts would be less than significant for the third floors of the proposed townhomes.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Mitigation Measure 1:

The project applicant shall applicant to construct an 8-foot high temporary wall along the eastern property line, prior to the start of grading activities for the proposed project and shall be maintained until the completion of building construction of the easternmost buildings (Buildings 7, 14, and 15). The sound wall shall be constructed of minimum ½-inch plywood or oriented strand board (OSB) and shall be free of any cutouts or openings.

Level of Significance After Mitigation

Less than significant impact.

7.3 Generation of Excessive Groundborne Vibration

The proposed project would not expose persons to or generation of excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the proposed project.

Construction-Related Vibration Impacts

Construction activities for the proposed project are anticipated to include site preparation and grading of the 7.47-acre project site, building construction of the 152 townhomes, paving of the onsite roads and parking areas and application of architectural coatings. Vibration impacts from construction activities associated with the proposed project would typically be created from the operation of heavy off-road equipment. The nearest sensitive receptors to the project site are the multi-family homes on the east side of the project site, with the nearest home setback 20 feet from the project site and Cortez Magnet School, where the nearest school structure is 22 feet south of the project site.

Section 18-309 of the Municipal Code restricts the creation of vibration that is perceptible on any nearby property. Section 18-309 of the Municipal Code defines the threshold of perception to be more than 0.05 inch per second RMS vertical Velocity.

The primary source of vibration during construction would be from the operation of a bulldozer. From Table N above a large bulldozer would create a vibration level of 0.089 inch per second PPV or 0.022 inch per second RMS at 25 feet. Based on typical propagation rates, the vibration level at the nearest offsite sensitive receptor (multi-family homes 20 feet to the east) would be 0.028 inch per second RMS. The vibration level at the nearest offsite receptor would be within the 0.05 inch per second RMS threshold detailed in Section 18-309 of the Municipal Code. Therefore, a less than significant vibration impact is anticipated from construction of the proposed project.

Operations-Related Vibration Impacts

The proposed project would consist of the development of 152 multi-family three-story townhomes. The on-going operation of the proposed project would not include the operation of any known vibration sources other than typical onsite vehicle operations for a residential development. However, there is a potential vibration impact from trucks operating on Interstate 10 to the proposed townhomes, that would be located as near as 27 feet from the nearest travel lane on Interstate 10.

Caltrans has done extensive research on vibration level created along freeways and State Routes and their vibration measurements of roads have never exceeded 0.08 inches per second PPV or 0.02 inch per second RMS at 15 feet from the center of the nearest lane, with the worst combinations of heavy trucks. Based on typical propagation rates, the vibration level at the nearest proposed townhome (27 feet away) would be 0.01 inch per second RMS, which is well below the 0.05 inch per second RMS threshold detailed in Section 18-309 of the Municipal Code. Therefore, a less than significant vibration impact is anticipated from operation of the proposed project.

Level of Significance

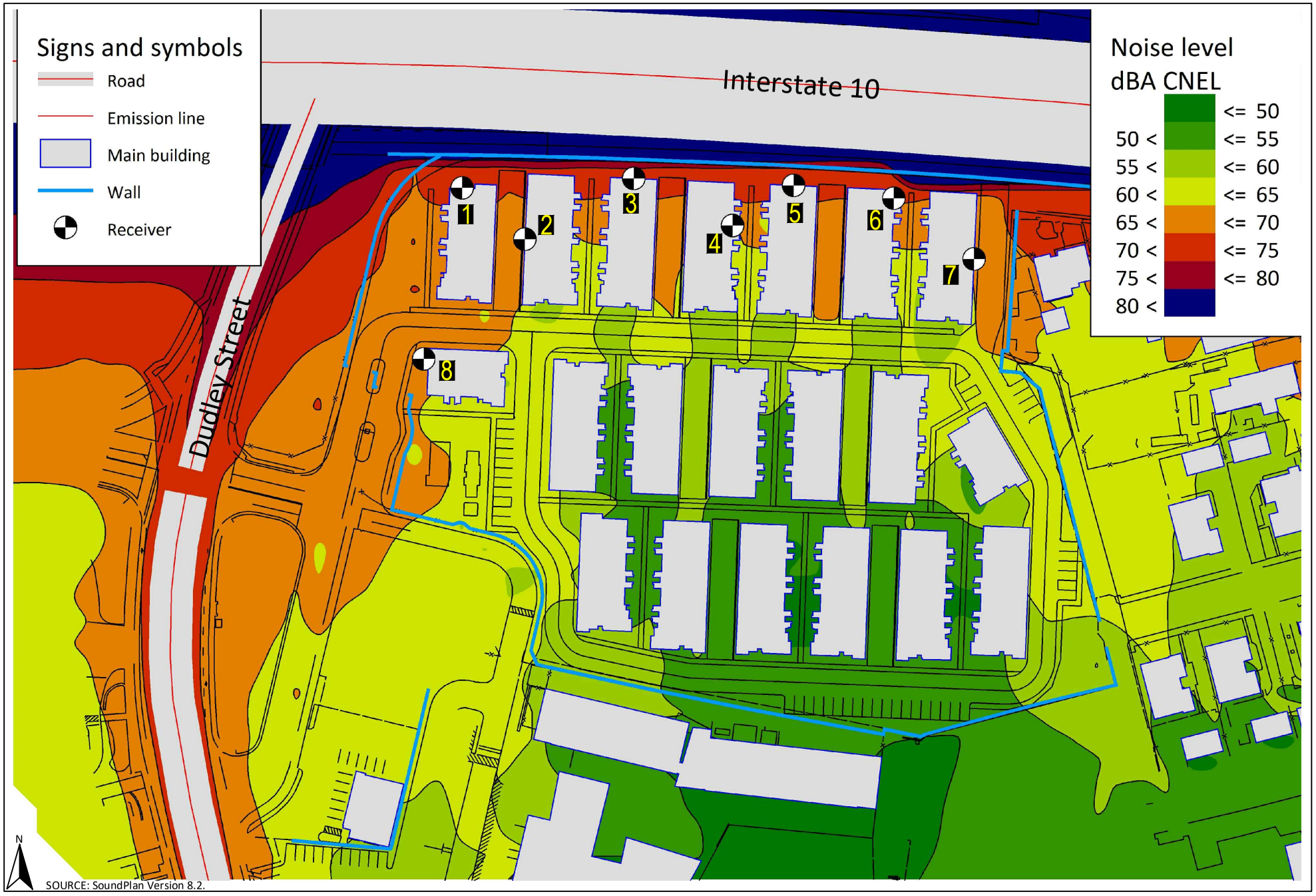
Less than significant impact.

7.4 Aircraft Noise

The proposed project may expose people residing or working in the project area to excessive noise levels from aircraft. The nearest airport is Brackett Field Airport, that is as near as 1.2 mile north of the project site. According to Figure 4.9-3 from the *City of Pomona General Plan Update, Corridors Specific Plan, Active Transportation Plan and Green Plan Draft Environmental Impact Report,* prepared July 2013, the project site is located outside of the 60 dBA CNEL noise contours of this airport. Therefore, the proposed townhomes would not be exposed to excessive aircraft noise. Impacts would be less than significant.

Level of Significance

Less than significant impact.



VISTA ENVIRONMENTAL

Figure 8
Horizon Year 2040 With Project Noise Contours

8.0 REFERENCES

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Vista Environmental, *Air Quality, Energy, Greenhouse Gas Emissions Impact Analysis Dudley St. Multi-Family Residential Project,* September 22, 2020.

APPENDIX A

Field Noise Measurements Photo Index



Noise Measurement Site A - looking north



Noise Measurement Site A - looking northeast



Noise Measurement Site A - looking east



Noise Measurement Site A - looking southeast



Noise Measurement Site A - looking south



Noise Measurement Site A - looking southwest



Noise Measurement Site A - looking west



Noise Measurement Site A - looking northwest



Noise Measurement Site B - looking north



Noise Measurement Site B - looking northeast



Noise Measurement Site B - looking east



Noise Measurement Site B - looking southeast



Noise Measurement Site B - looking south



Noise Measurement Site B - looking southwest



Noise Measurement Site B - looking west



Noise Measurement Site B - looking northwest

APPENDIX B

Field Noise Measurements Printouts

Site 1 - Near NE Corner of Project Site & 125' from I-10 CL

Thursday, September 13, 2018 10:59:37 AM Start Time

Sampling Tim 1 Freq Weighting=A

Record Num = 86402 Slow CNEL(24hr)= 73.7

Leq = 67.3 Ldn(24hr)= 73.5

Max = 83.8 Min Leq1hr = 63.4 6:19 PM

Min = 56.1 Max Leqhr = 69.8 6:35 AM

Site 1 - Near NE Corner of Project Site & 125' from I-10 CL

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
66.2	10:59:37		66.2	66.2
73.2	10:59:38		73.2	73.2
73.8	10:59:39		73.8	73.8
74.1	10:59:40		74.1	74.1
72.9	10:59:41		72.9	72.9
70.3	10:59:42		70.3	70.3
68.2	10:59:43		68.2	68.2
69.5	10:59:44		69.5	69.5
69.6	10:59:45		69.6	69.6
67.9	10:59:46		67.9	67.9
67.1	10:59:47		67.1	67.1
67.1	10:59:48		67.1	67.1
67.0	10:59:49		67.0	67.0
66.7	10:59:50		66.7	66.7
66.2	10:59:51		66.2	66.2
66.3	10:59:52		66.3	66.3
66.8	10:59:53		66.8	66.8
68.1	10:59:54		68.1	68.1
68.0	10:59:55		68.0	68.0
68.0	10:59:56		68.0	68.0
66.9	10:59:57		66.9	66.9
66.7	10:59:58		66.7	66.7
67.3	10:59:59		67.3	67.3
68.6	11:00:00		68.6	68.6
70.0	11:00:01		70.0	70.0
70.1	11:00:02		70.1	70.1
69.5	11:00:03		69.5	69.5
69.4	11:00:04		69.4	69.4
68.9	11:00:05		68.9	68.9
68.5	11:00:06		68.5	68.5
68.3	11:00:07		68.3	68.3
68.0	11:00:08		68.0	68.0
67.8	11:00:09		67.8	67.8
67.7	11:00:10		67.7	67.7
70.5	11:00:11		70.5	70.5
70.4	11:00:12		70.4	70.4
70.5	11:00:13		70.5	70.5
71.5	11:00:14		71.5	71.5
74.8	11:00:15		74.8	74.8
74.6	11:00:16		74.6	74.6
72.2	11:00:17		72.2	72.2
70.0	11:00:18		70.0	70.0
68.3	11:00:19		68.3	68.3
68.6	11:00:20		68.6	68.6
68.2	11:00:21		68.2	68.2
69.3	11:00:22		69.3	69.3
68.8	11:00:23		68.8	68.8
68.3	11:00:24		68.3	68.3
67.8	11:00:25		67.8	67.8
67.7	11:00:26		67.7	67.7
68.6	11:00:27		68.6	68.6
69.6	11:00:28		69.6	69.6
70.9	11:00:29		70.9	70.9
70.4	11:00:30		70.4	70.4
69.8	11:00:31		69.8	69.8
69.1	11:00:32		69.1	69.1
68.5	11:00:33		68.5	68.5
68.1	11:00:34		68.1	68.1
68.1	11:00:35		68.1	68.1
68.3	11:00:36		68.3	68.3
68.9	11:00:37		68.9	68.9
70.6	11:00:38		70.6	70.6
70.5	11:00:39		70.5	70.5
72.3	11:00:40		72.3	72.3
72.0	11:00:41		72.0	72.0
68.2	11:00:42		68.2	68.2
74.7	11:00:43		74.7	74.7
72.1	11:00:44		72.1	72.1
70.6	11:00:45		70.6	70.6
70.2	11:00:46		70.2	70.2
70.3	11:00:47		70.3	70.3
72.2	11:00:48		72.2	72.2
70.3	11:00:49		70.3	70.3
70.3	11:00:50		70.3	70.3
70.2	11:00:51		70.2	70.2
69.7	11:00:52		69.7	69.7
69.8	11:00:53		69.8	69.8
68.9	11:00:54		68.9	68.9
68.4	11:00:55		68.4	68.4
68.7	11:00:56		68.7	68.7
69.7	11:00:57		69.7	69.7
70.1	11:00:58		70.1	70.1
69.5	11:00:59		69.5	69.5
68.8	11:01:00		68.8	68.8
68.4	11:01:01		68.4	68.4
68.4	11:01:02		68.4	68.4
68.9	11:01:03		68.9	68.9
69.1	11:01:04		69.1	69.1
69.1	11:01:05		69.1	69.1
70.2	11:01:06		70.2	70.2
71.1	11:01:07		71.1	71.1
71.5	11:01:08		71.5	71.5
73.0	11:01:09		73.0	73.0
71.5	11:01:10		71.5	71.5
69.5	11:01:11		69.5	69.5
69.1	11:01:12		69.1	69.1
69.6	11:01:13		69.6	69.6
69.4	11:01:14		69.4	69.4
69.6	11:01:15		69.6	69.6
70.6	11:01:16		70.6	70.6
70.6	11:01:17		70.6	70.6
70.3	11:01:18		70.3	70.3
70.3	11:01:19		70.3	70.3
70.4	11:01:20		70.4	70.4
70.0	11:01:21		70.0	70.0
69.2	11:01:22		69.2	69.2
68.6	11:01:23		68.6	68.6
68.4	11:01:24		68.4	68.4
68.7	11:01:25		68.7	68.7
68.9	11:01:26		68.9	68.9
68.6	11:01:27		68.6	68.6
67.9	11:01:28		67.9	67.9
67.6	11:01:29		67.6	67.6
67.5	11:01:30		67.5	67.5
68.3	11:01:31		68.3	68.3
68.5	11:01:32		68.5	68.5
68.9	11:01:33		68.9	68.9
68.5	11:01:34		68.5	68.5
67.8	11:01:35		67.8	67.8
67.7	11:01:36		67.7	67.7
67.8	11:01:37		67.8	67.8
68.8	11:01:38		68.8	68.8
69.7	11:01:39		69.7	69.7
71.0	11:01:40		71.0	71.0
71.9	11:01:41		71.9	71.9
71.9	11:01:42		71.9	71.9
71.0	11:01:43		71.0	71.0
69.8	11:01:44		69.8	69.8
68.8	11:01:45		68.8	68.8
68.5	11:01:46		68.5	68.5
69.0	11:01:47		69.0	69.0
68.9	11:01:48		68.9	68.9
68.3	11:01:49		68.3	68.3
68.2	11:01:50		68.2	68.2
68.4	11:01:51		68.4	68.4
68.8	11:01:52		68.8	68.8
68.9	11:01:53		68.9	68.9
69.0	11:01:54		69.0	69.0
69.3	11:01:55		69.3	69.3
69.8	11:01:56		69.8	69.8
70.4	11:01:57		70.4	70.4
70.1	11:01:58		70.1	70.1
70.0	11:01:59		70.0	70.0
69.7	11:02:00		69.7	69.7
69.1	11:02:01		69.1	69.1
68.8	11:02:02		68.8	68.8
68.6	11:02:03		68.6	68.6
68.1	11:02:04		68.1	68.1
68.1	11:02:05		68.1	68.1
67.8	11:02:06		67.8	67.8
68.1	11:02:07		68.1	68.1
68.6	11:02:08		68.6	68.6
68.7	11:02:09		68.7	68.7
68.4	11:02:10		68.4	68.4
68.1	11:02:11		68.1	68.1
67.5	11:02:12		67.5	67.5
67.4	11:02:13		67.4	67.4
67.3	11:02:14		67.3	67.3
67.2	11:02:15		67.2	67.2
67.5	11:02:16		67.5	67.5
67.7	11:02:17		67.7	67.7

Site 2 - North Central Area of Project Site & 255' from I-10 CL

Thursday, September 13, 2018 11:03:16 AM Start Time

Sampling Tir 1 Freq Weighting=A

Record Num = 86402 Slow CNEL(24hr)= 72.0

Leq = 65.4 Ldn(24hr)= 71.8

Max = 83.9 Min Leq1hr = 62.7 5:26 PM

Min = 55.2 Max Leqhr = 67.6 6:54 AM

Site 2 - North Central Area of Project Site & 255' from I-10 CL

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
69.6	11:03:16		69.6	69.6
69.0	11:03:17		69.0	69.0
68.4	11:03:18		68.4	68.4
71.2	11:03:19		71.2	71.2
70.7	11:03:20		70.7	70.7
70.7	11:03:21		70.7	70.7
71.0	11:03:22		71.0	71.0
69.2	11:03:23		69.2	69.2
73.4	11:03:24		73.4	73.4
74.4	11:03:25		74.4	74.4
70.8	11:03:26		70.8	70.8
83.9	11:03:27		83.9	83.9
81.2	11:03:28		81.2	81.2
77.6	11:03:29		77.6	77.6
73.7	11:03:30		73.7	73.7
70.4	11:03:31		70.4	70.4
68.6	11:03:32		68.6	68.6
67.3	11:03:33		67.3	67.3
66.8	11:03:34		66.8	66.8
66.7	11:03:35		66.7	66.7
66.4	11:03:36		66.4	66.4
66.4	11:03:37		66.4	66.4
66.3	11:03:38		66.3	66.3
66.6	11:03:39		66.6	66.6
66.3	11:03:40		66.3	66.3
67.7	11:03:41		67.7	67.7
70.2	11:03:42		70.2	70.2
69.2	11:03:43		69.2	69.2
82.3	11:03:44		82.3	82.3
80.9	11:03:45		80.9	80.9
77.0	11:03:46		77.0	77.0
73.5	11:03:47		73.5	73.5
70.9	11:03:48		70.9	70.9
69.5	11:03:49		69.5	69.5
68.3	11:03:50		68.3	68.3
69.4	11:03:51		69.4	69.4
68.1	11:03:52		68.1	68.1
66.8	11:03:53		66.8	66.8
66.2	11:03:54		66.2	66.2
65.7	11:03:55		65.7	65.7
64.4	11:03:56		64.4	64.4
63.8	11:03:57		63.8	63.8
64.6	11:03:58		64.6	64.6
67.1	11:03:59		67.1	67.1
65.8	11:04:00		65.8	65.8
65.2	11:04:01		65.2	65.2
64.7	11:04:02		64.7	64.7
66.1	11:04:03		66.1	66.1
66.4	11:04:04		66.4	66.4
66.8	11:04:05		66.8	66.8
66.6	11:04:06		66.6	66.6
66.4	11:04:07		66.4	66.4
67.4	11:04:08		67.4	67.4
67.7	11:04:09		67.7	67.7
67.2	11:04:10		67.2	67.2
67.2	11:04:11		67.2	67.2
68.0	11:04:12		68.0	68.0
67.7	11:04:13		67.7	67.7
67.2	11:04:14		67.2	67.2
67.0	11:04:15		67.0	67.0
67.4	11:04:16		67.4	67.4
68.2	11:04:17		68.2	68.2
67.7	11:04:18		67.7	67.7
66.9	11:04:19		66.9	66.9
66.5	11:04:20		66.5	66.5
67.1	11:04:21		67.1	67.1
71.9	11:04:22		71.9	71.9
72.7	11:04:23		72.7	72.7
70.0	11:04:24		70.0	70.0
67.7	11:04:25		67.7	67.7
72.2	11:04:26		72.2	72.2
69.8	11:04:27		69.8	69.8
67.9	11:04:28		67.9	67.9
66.8	11:04:29		66.8	66.8
66.1	11:04:30		66.1	66.1
65.5	11:04:31		65.5	65.5
65.1	11:04:32		65.1	65.1
65.0	11:04:33		65.0	65.0
64.9	11:04:34		64.9	64.9
64.4	11:04:35		64.4	64.4
64.8	11:04:36		64.8	64.8
65.3	11:04:37		65.3	65.3
64.4	11:04:38		64.4	64.4
63.7	11:04:39		63.7	63.7
63.5	11:04:40		63.5	63.5
63.2	11:04:41		63.2	63.2
63.3	11:04:42		63.3	63.3
64.2	11:04:43		64.2	64.2
64.2	11:04:44		64.2	64.2
64.4	11:04:45		64.4	64.4
64.3	11:04:46		64.3	64.3
64.2	11:04:47		64.2	64.2
63.7	11:04:48		63.7	63.7
63.5	11:04:49		63.5	63.5
63.2	11:04:50		63.2	63.2
63.2	11:04:51		63.2	63.2
63.3	11:04:52		63.3	63.3
63.0	11:04:53		63.0	63.0
62.8	11:04:54		62.8	62.8
63.2	11:04:55		63.2	63.2
63.4	11:04:56		63.4	63.4
63.3	11:04:57		63.3	63.3
63.7	11:04:58		63.7	63.7
64.8	11:04:59		64.8	64.8
65.4	11:05:00		65.4	65.4
65.7	11:05:01		65.7	65.7
66.4	11:05:02		66.4	66.4
66.7	11:05:03		66.7	66.7
67.1	11:05:04		67.1	67.1
67.6	11:05:05		67.6	67.6
68.0	11:05:06		68.0	68.0
68.4	11:05:07		68.4	68.4
68.1	11:05:08		68.1	68.1
67.6	11:05:09		67.6	67.6
67.0	11:05:10		67.0	67.0
66.9	11:05:11		66.9	66.9
67.4	11:05:12		67.4	67.4
67.6	11:05:13		67.6	67.6
67.6	11:05:14		67.6	67.6
67.4	11:05:15		67.4	67.4
67.2	11:05:16		67.2	67.2
67.1	11:05:17		67.1	67.1
66.8	11:05:18		66.8	66.8
66.3	11:05:19		66.3	66.3
66.3	11:05:20		66.3	66.3
66.4	11:05:21		66.4	66.4
66.3	11:05:22		66.3	66.3
66.5	11:05:23		66.5	66.5
66.4	11:05:24		66.4	66.4
66.5	11:05:25		66.5	66.5
66.6	11:05:26		66.6	66.6
66.5	11:05:27		66.5	66.5
66.7	11:05:28		66.7	66.7
67.3	11:05:29		67.3	67.3
68.2	11:05:30		68.2	68.2
69.9	11:05:31		69.9	69.9
70.2	11:05:32		70.2	70.2
69.9	11:05:33		69.9	69.9
69.7	11:05:34		69.7	69.7
69.3	11:05:35		69.3	69.3
68.3	11:05:36		68.3	68.3
67.5	11:05:37		67.5	67.5
67.0	11:05:38		67.0	67.0
66.7	11:05:39		66.7	66.7
66.6	11:05:40		66.6	66.6
66.6	11:05:41		66.6	66.6
66.5	11:05:42		66.5	66.5
66.4	11:05:43		66.4	66.4
66.5	11:05:44		66.5	66.5
66.6	11:05:45		66.6	66.6
66.6	11:05:46		66.6	66.6
66.5	11:05:47		66.5	66.5
66.5	11:05:48		66.5	66.5
66.3	11:05:49		66.3	66.3
66.8	11:05:50		66.8	66.8
66.5	11:05:51		66.5	66.5
66.0	11:05:52		66.0	66.0
65.9	11:05:53		65.9	65.9
66.5	11:05:54		66.5	66.5
66.5	11:05:55		66.5	66.5
66.1	11:05:56		66.1	66.1

APPENDIX C

SoundPlan Model Existing Noise Calculations

Dudley St Multi-Family Residential
Assessed receiver levels - Existing

Name	Floor	X m	Dir	Y m	Z m	Ldn dB(A)	Leq,d dB(A)	Leq,e dB(A)	Leq,n dB(A)
A	G	233.2		255.7	256.3	71.8	66.8	64.5	65.0
B	G	165.5		218.2	256.2	71.1	66.1	63.8	64.2

Dudley St Multi-Family Residential
Emission calculation road - Existing

Road	KM	ADT	MSVges Day	MSVges Evening	MSVges Night	Pavement type	Gradient	
	km	Veh/24h	Veh/h	Veh/h	Veh/h		%	
I-10 Freeway	0.000	269200	14614.64	8101.30	7724.50	PCC (Portland cement concrete)	0.5	
Dudley St north of I-10 EB Ramps	0.000	7200	439.57	313.67	109.35	Average (of DGAC and PCC)	5.5	
Dudley St south of I-10 eastbound ramps	0.000	6300	384.62	274.46	95.68	Average (of DGAC and PCC)	-4.1	

APPENDIX D

Proposed Townhomes Exterior to Interior Attenuation Calculations

Interior Noise Calculations With 26 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 1 Floor: 2 Room: Great Room/Kitchen

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	179	0.1	0.4	0.62	0.7	0.63	0.88	17.94	71.76	111.23	125.58	113.02	157.87
Floor - Linoleum/Tile	263	0.02	0.03	0.03	0.03	0.03	0.02	5.25	7.875	7.875	7.875	7.875	5.25
Ceiling - Gypsum Board	442	0.29	0.1	0.05	0.04	0.07	0.09	128.15	44.19	22.095	17.676	30.933	39.771
Wall - Gypsum board	571	0.29	0.1	0.05	0.04	0.07	0.09	165.56	57.09	28.545	22.836	39.963	51.381
Total	1455							316.9	180.92	169.74	173.97	191.79	254.27
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.44	3.87	4.15	4.04	3.62	2.39
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.66	-10.73	-5.05	-1.96	-1.18	-2.61
		dBA Noise Absorption Level						**3.7**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	323	46	0.0081
Window	78	26	0.1959
Door	40	26	0.0995
Total	441		0.0007
	Transmission Loss		**31.6**

26 STC = Standard dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

28 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With 26 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 2 Floor: 2 Room: Bedroom 3

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	118	0.1	0.4	0.62	0.7	0.63	0.88	11.845	47.38	73.439	82.915	74.624	104.24
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	118	0.29	0.1	0.05	0.04	0.07	0.09	34.351	11.845	5.9225	4.738	8.2915	10.661
Wall - Gypsum board	374	0.29	0.1	0.05	0.04	0.07	0.09	108.58	37.44	18.72	14.976	26.208	33.696
Total	611							154.77	96.665	98.082	102.63	109.12	148.59
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.80	3.84	3.78	3.58	3.31	1.97
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.30	-10.76	-5.42	-2.42	-1.49	-3.03
		dBA Noise Absorption Level						**3.3**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	216	46	0.0054
Window	18	26	0.0452
Door	0	26	0
Total	234		0.0002
	Transmission Loss		**36.6**

26 STC = Standard dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

33 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With 26 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 3Y Floor: 2 Room: Great Room/Kitchen

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	192	0.1	0.4	0.62	0.7	0.63	0.88	19.2	76.8	119.04	134.4	120.96	168.96
Floor - Linoleum/Tile	188	0.02	0.03	0.03	0.03	0.03	0.02	3.75	5.625	5.625	5.625	5.625	3.75
Ceiling - Gypsum Board	365	0.29	0.1	0.05	0.04	0.07	0.09	105.71	36.45	18.225	14.58	25.515	32.805
Wall - Gypsum board	596	0.29	0.1	0.05	0.04	0.07	0.09	172.96	59.64	29.82	23.856	41.748	53.676
Total	1340							301.61	178.52	172.71	178.46	193.85	259.19
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.13	3.41	3.55	3.41	3.05	1.79
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.97	-11.19	-5.65	-2.59	-1.75	-3.21
		dBA Noise Absorption Level						**3.1**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	295	46	0.0074
Window	57	26	0.1432
Door	40	26	0.0995
Total	392		0.0006
	Transmission Loss		**31.9**

26 STC = Standard dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

29 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With 26 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 3Y Floor: 2 Room: Bedroom 3

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	100	0.1	0.4	0.62	0.7	0.63	0.88	10	40	62	70	63	88
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	100	0.29	0.1	0.05	0.04	0.07	0.09	29	10	5	4	7	9
Wall - Gypsum board	125	0.29	0.1	0.05	0.04	0.07	0.09	36.105	12.45	6.225	4.98	8.715	11.205
Total	325							75.105	62.45	73.225	78.98	78.715	108.21
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						4.01	4.81	4.12	3.79	3.80	2.42
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-18.09	-9.79	-5.08	-2.21	-1.00	-2.58
		dBA Noise Absorption Level						**3.8**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	129	46	0.0032
Window	60	26	0.1507
Door	0	26	0
Total	189		0.0008
	Transmission Loss		**30.9**

26 STC = Standard dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

27 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With 26 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 1 Floor: 3 Room: Master Bedroom

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	144	0.1	0.4	0.62	0.7	0.63	0.88	14.4	57.6	89.28	100.8	90.72	126.72
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	144	0.29	0.1	0.05	0.04	0.07	0.09	41.76	14.4	7.2	5.76	10.08	12.96
Wall - Gypsum board	363	0.29	0.1	0.05	0.04	0.07	0.09	105.27	36.3	18.15	14.52	25.41	32.67
Total	651							161.43	108.3	114.63	121.08	126.21	172.35
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.44	3.18	2.93	2.69	2.51	1.16
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.66	-11.42	-6.27	-3.31	-2.29	-3.84
		dBA Noise Absorption Level						**2.5**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	183	46	0.0046
Window	42	26	0.1055
Door	0	26	0
Total	225		0.0005
	Transmission Loss		**33.1**

26 STC = Standard dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

31 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With 26 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 1 Floor: 3 Room: Bedroom 2

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	106	0.1	0.4	0.62	0.7	0.63	0.88	10.605	42.42	65.751	74.235	66.812	93.324
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	106	0.29	0.1	0.05	0.04	0.07	0.09	30.755	10.605	5.3025	4.242	7.4235	9.5445
Wall - Gypsum board	308	0.29	0.1	0.05	0.04	0.07	0.09	89.262	30.78	15.39	12.312	21.546	27.702
Total	520							130.62	83.805	86.444	90.789	95.781	130.57
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						0.00	1.92	1.79	1.58	1.34	0.00
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-22.10	-12.68	-7.41	-4.42	-3.46	-5.00
		dBA Noise Absorption Level						**1.4**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	95	46	0.0024
Window	36	26	0.0904
Door	0	26	0
Total	131		0.0007
	Transmission Loss		**31.5**

26 STC = Standard dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

30 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With 26 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 2 Floor: 3 Room: Master Bedroom

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	178	0.1	0.4	0.62	0.7	0.63	0.88	17.785	71.14	110.27	124.5	112.05	156.51
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	178	0.29	0.1	0.05	0.04	0.07	0.09	51.577	17.785	8.8925	7.114	12.45	16.007
Wall - Gypsum board	439	0.29	0.1	0.05	0.04	0.07	0.09	127.37	43.92	21.96	17.568	30.744	39.528
Total	795							196.73	132.85	141.12	149.18	155.24	212.04
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						0.75	2.46	2.20	1.96	1.78	0.43
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-21.35	-12.14	-7.00	-4.04	-3.02	-4.57
		dBA Noise Absorption Level						**1.8**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	198	46	0.005
Window	36	26	0.0904
Door	0	26	0
Total	234		0.0004
	Transmission Loss		**33.9**

26 STC = Standard dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

32 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With 26 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 2 Floor: 3 Room: Bedroom 2

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	118	0.1	0.4	0.62	0.7	0.63	0.88	11.845	47.38	73.439	82.915	74.624	104.24
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	118	0.29	0.1	0.05	0.04	0.07	0.09	34.351	11.845	5.9225	4.738	8.2915	10.661
Wall - Gypsum board	374	0.29	0.1	0.05	0.04	0.07	0.09	108.58	37.44	18.72	14.976	26.208	33.696
Total	611							154.77	96.665	98.082	102.63	109.12	148.59
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.80	3.84	3.78	3.58	3.31	1.97
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.30	-10.76	-5.42	-2.42	-1.49	-3.03
		dBA Noise Absorption Level						**3.3**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	216	46	0.0054
Window	18	26	0.0452
Door	0	26	0
Total	234		0.0002
	Transmission Loss		**36.6**

26 STC = Standard dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

33 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With 26 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 3Y Floor: 3 Room: Master Bedroom

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	191	0.1	0.4	0.62	0.7	0.63	0.88	19.08	76.32	118.3	133.56	120.2	167.9
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	191	0.29	0.1	0.05	0.04	0.07	0.09	55.332	19.08	9.54	7.632	13.356	17.172
Wall - Gypsum board	415	0.29	0.1	0.05	0.04	0.07	0.09	120.41	41.52	20.76	16.608	29.064	37.368
Total	797							194.82	136.92	148.6	157.8	162.62	222.44
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.19	2.73	2.37	2.11	1.98	0.62
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.91	-11.87	-6.83	-3.89	-2.82	-4.38
		dBA Noise Absorption Level						**2.0**					

Exterior-Interior Transmission Calculations

Type of Surface	Area	STC	Fractional Area
	(Sq ft)	Rating	(Area/10^(STC/10))
Stucco Wall	197	46	0.0049
Window	60	26	0.1507
Door	0	26	0
Total	257		0.0006
	Transmission Loss		**32.2**

26 STC = Standard dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

30 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With 26 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 3Y Floor: 3 Room: Bedroom 2

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	131	0.1	0.4	0.62	0.7	0.63	0.88	13.08	52.32	81.096	91.56	82.404	115.1
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	131	0.29	0.1	0.05	0.04	0.07	0.09	37.932	13.08	6.54	5.232	9.156	11.772
Wall - Gypsum board	370	0.29	0.1	0.05	0.04	0.07	0.09	107.36	37.02	18.51	14.808	25.914	33.318
Total	632							158.37	102.42	106.15	111.6	117.47	160.19
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.26	3.15	2.99	2.78	2.55	1.21
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.84	-11.45	-6.21	-3.22	-2.25	-3.79
		dBA Noise Absorption Level						**2.6**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	170	46	0.0043
Window	42	26	0.1055
Door	0	26	0
Total	212		0.0005
	Transmission Loss		**32.8**

26 STC = Standard dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

30 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Upgraded 32 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 1 Floor: 2 Room: Great Room/Kitchen

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	179	0.1	0.4	0.62	0.7	0.63	0.88	17.94	71.76	111.23	125.58	113.02	157.87
Floor - Linoleum/Tile	263	0.02	0.03	0.03	0.03	0.03	0.02	5.25	7.875	7.875	7.875	7.875	5.25
Ceiling - Gypsum Board	442	0.29	0.1	0.05	0.04	0.07	0.09	128.15	44.19	22.095	17.676	30.933	39.771
Wall - Gypsum board	571	0.29	0.1	0.05	0.04	0.07	0.09	165.56	57.09	28.545	22.836	39.963	51.381
Total	1455							316.9	180.92	169.74	173.97	191.79	254.27
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.44	3.87	4.15	4.04	3.62	2.39
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.66	-10.73	-5.05	-1.96	-1.18	-2.61
		dBA Noise Absorption Level						**3.7**					

Exterior-Interior Transmission Calculations

Type of Surface	Area	STC	Fractional Area
	(Sq ft)	Rating	(Area/10^(STC/10))
Stucco Wall	323	46	0.0081
Window	78	32	0.0492
Door	40	32	0.025
Total	441		0.0002
	Transmission Loss		**37.3**

32 STC = Upgraded dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

34 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Upgraded 32 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 2 Floor: 2 Room: Great Room/Kitchen

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	160	0.1	0.4	0.62	0.7	0.63	0.88	16	64	99.2	112	100.8	140.8
Floor - Linoleum/Tile	213	0.02	0.03	0.03	0.03	0.03	0.02	4.25	6.375	6.375	6.375	6.375	4.25
Ceiling - Gypsum Board	419	0.29	0.1	0.05	0.04	0.07	0.09	121.37	41.85	20.925	16.74	29.295	37.665
Wall - Gypsum board	581	0.29	0.1	0.05	0.04	0.07	0.09	168.61	58.14	29.07	23.256	40.698	52.326
Total	1372							310.22	170.37	155.57	158.37	177.17	235.04
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						-3.33	-0.73	-0.34	-0.41	-0.90	-2.13
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-25.43	-15.33	-9.54	-6.41	-5.70	-7.13
		dBA Noise Absorption Level						**-0.8**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	32	46	0.0008
Window	72	32	0.0454
Door	40	32	0.025
Total	144		0.0005
	Transmission Loss		**33.1**

32 STC = Upgraded dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

34 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Upgraded 32 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 2 Floor: 2 Room: Bedroom 3

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	118	0.1	0.4	0.62	0.7	0.63	0.88	11.845	47.38	73.439	82.915	74.624	104.24
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	118	0.29	0.1	0.05	0.04	0.07	0.09	34.351	11.845	5.9225	4.738	8.2915	10.661
Wall - Gypsum board	374	0.29	0.1	0.05	0.04	0.07	0.09	108.58	37.44	18.72	14.976	26.208	33.696
Total	611							154.77	96.665	98.082	102.63	109.12	148.59
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.80	3.84	3.78	3.58	3.31	1.97
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.30	-10.76	-5.42	-2.42	-1.49	-3.03
		dBA Noise Absorption Level						**3.3**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	216	46	0.0054
Window	18	32	0.0114
Door	0	32	0
Total	234		7E-05
	Transmission Loss		**41.4**

32 STC = Upgraded dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

38 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Upgraded 32 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 3Y Floor: 2 Room: Great Room/Kitchen

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	192	0.1	0.4	0.62	0.7	0.63	0.88	19.2	76.8	119.04	134.4	120.96	168.96
Floor - Linoleum/Tile	188	0.02	0.03	0.03	0.03	0.03	0.02	3.75	5.625	5.625	5.625	5.625	3.75
Ceiling - Gypsum Board	365	0.29	0.1	0.05	0.04	0.07	0.09	105.71	36.45	18.225	14.58	25.515	32.805
Wall - Gypsum board	596	0.29	0.1	0.05	0.04	0.07	0.09	172.96	59.64	29.82	23.856	41.748	53.676
Total	1340							301.61	178.52	172.71	178.46	193.85	259.19
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.13	3.41	3.55	3.41	3.05	1.79
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.97	-11.19	-5.65	-2.59	-1.75	-3.21
		dBA Noise Absorption Level						**3.1**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	295	46	0.0074
Window	57	32	0.036
Door	40	32	0.025
Total	392		0.0002
	Transmission Loss		**37.6**

32 STC = Upgraded dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

34 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Upgraded 32 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 3Y Floor: 2 Room: Bedroom 3

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	100	0.1	0.4	0.62	0.7	0.63	0.88	10	40	62	70	63	88
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	100	0.29	0.1	0.05	0.04	0.07	0.09	29	10	5	4	7	9
Wall - Gypsum board	125	0.29	0.1	0.05	0.04	0.07	0.09	36.105	12.45	6.225	4.98	8.715	11.205
Total	325							75.105	62.45	73.225	78.98	78.715	108.21
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						4.01	4.81	4.12	3.79	3.80	2.42
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-18.09	-9.79	-5.08	-2.21	-1.00	-2.58
		dBA Noise Absorption Level						**3.8**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	129	46	0.0032
Window	60	32	0.0379
Door	0	32	0
Total	189		0.0002
	Transmission Loss		**36.6**

32 STC = Upgraded dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

33 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 35 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 1 Floor: 3 Room: Master Bedroom

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	144	0.1	0.4	0.62	0.7	0.63	0.88	14.4	57.6	89.28	100.8	90.72	126.72
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	144	0.29	0.1	0.05	0.04	0.07	0.09	41.76	14.4	7.2	5.76	10.08	12.96
Wall - Gypsum board	363	0.29	0.1	0.05	0.04	0.07	0.09	105.27	36.3	18.15	14.52	25.41	32.67
Total	651							161.43	108.3	114.63	121.08	126.21	172.35
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.44	3.18	2.93	2.69	2.51	1.16
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.66	-11.42	-6.27	-3.31	-2.29	-3.84
		dBA Noise Absorption Level						**2.5**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	183	46	0.0046
Window	42	35	0.0133
Door	0	35	0
Total	225		8E-05
	Transmission Loss		**41.0**

35 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

38 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 35 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 1 Floor: 3 Room: Bedroom 2

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	106	0.1	0.4	0.62	0.7	0.63	0.88	10.605	42.42	65.751	74.235	66.812	93.324
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	106	0.29	0.1	0.05	0.04	0.07	0.09	30.755	10.605	5.3025	4.242	7.4235	9.5445
Wall - Gypsum board	308	0.29	0.1	0.05	0.04	0.07	0.09	89.262	30.78	15.39	12.312	21.546	27.702
Total	520							130.62	83.805	86.444	90.789	95.781	130.57
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						0.00	1.92	1.79	1.58	1.34	0.00
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-22.10	-12.68	-7.41	-4.42	-3.46	-5.00
		dBA Noise Absorption Level						**1.4**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	95	46	0.0024
Window	36	35	0.0114
Door	0	35	0
Total	131		0.0001
	Transmission Loss		**39.8**

35 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

38 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 35 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 2 Floor: 3 Room: Master Bedroom

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	178	0.1	0.4	0.62	0.7	0.63	0.88	17.785	71.14	110.27	124.5	112.05	156.51
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	178	0.29	0.1	0.05	0.04	0.07	0.09	51.577	17.785	8.8925	7.114	12.45	16.007
Wall - Gypsum board	439	0.29	0.1	0.05	0.04	0.07	0.09	127.37	43.92	21.96	17.568	30.744	39.528
Total	795							196.73	132.85	141.12	149.18	155.24	212.04
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						0.75	2.46	2.20	1.96	1.78	0.43
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-21.35	-12.14	-7.00	-4.04	-3.02	-4.57
		dBA Noise Absorption Level						**1.8**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	198	46	0.005
Window	36	35	0.0114
Door	0	35	0
Total	234		7E-05
	Transmission Loss		**41.6**

35 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

40 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 35 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 2 Floor: 3 Room: Bedroom 2

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	118	0.1	0.4	0.62	0.7	0.63	0.88	11.845	47.38	73.439	82.915	74.624	104.24
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	118	0.29	0.1	0.05	0.04	0.07	0.09	34.351	11.845	5.9225	4.738	8.2915	10.661
Wall - Gypsum board	374	0.29	0.1	0.05	0.04	0.07	0.09	108.58	37.44	18.72	14.976	26.208	33.696
Total	611							154.77	96.665	98.082	102.63	109.12	148.59
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.80	3.84	3.78	3.58	3.31	1.97
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.30	-10.76	-5.42	-2.42	-1.49	-3.03
		dBA Noise Absorption Level						**3.3**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	216	46	0.0054
Window	18	35	0.0057
Door	0	35	0
Total	234		5E-05
	Transmission Loss		**43.2**

35 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

40 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 35 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 3Y Floor: 3 Room: Master Bedroom

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	191	0.1	0.4	0.62	0.7	0.63	0.88	19.08	76.32	118.3	133.56	120.2	167.9
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	191	0.29	0.1	0.05	0.04	0.07	0.09	55.332	19.08	9.54	7.632	13.356	17.172
Wall - Gypsum board	415	0.29	0.1	0.05	0.04	0.07	0.09	120.41	41.52	20.76	16.608	29.064	37.368
Total	797							194.82	136.92	148.6	157.8	162.62	222.44
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.19	2.73	2.37	2.11	1.98	0.62
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.91	-11.87	-6.83	-3.89	-2.82	-4.38
		dBA Noise Absorption Level						**2.0**					

Exterior-Interior Transmission Calculations

Type of Surface	Area	STC	Fractional Area
	(Sq ft)	Rating	(Area/10^(STC/10))
Stucco Wall	197	46	0.0049
Window	60	35	0.019
Door	0	35	0
Total	257		9E-05
	Transmission Loss		**40.3**

35 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

38 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 35 STC Windows and Doors

Project Name: Dudley St Townhomes Plan: 3Y Floor: 3 Room: Bedroom 2

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	131	0.1	0.4	0.62	0.7	0.63	0.88	13.08	52.32	81.096	91.56	82.404	115.1
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	131	0.29	0.1	0.05	0.04	0.07	0.09	37.932	13.08	6.54	5.232	9.156	11.772
Wall - Gypsum board	394	0.29	0.1	0.05	0.04	0.07	0.09	114.32	39.42	19.71	15.768	27.594	35.478
Total	656							165.33	104.82	107.35	112.56	119.15	162.35
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.07	3.05	2.95	2.74	2.49	1.15
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-21.03	-11.55	-6.25	-3.26	-2.31	-3.85
		dBA Noise Absorption Level						**2.5**					

Exterior-Interior Transmission Calculations

Type of Surface	Area	STC	Fractional Area
	(Sq ft)	Rating	(Area/10^(STC/10))
Stucco Wall	194	46	0.0049
Window	18	35	0.0057
Door	0	35	0
Total	212		5E-05
	Transmission Loss		**43.0**

35 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

40 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 38 STC Windows & 5/8" Drywall

Project Name: Dudley St Townhomes Plan: 1 Floor: 3 Room: Master Bedroom

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	144	0.1	0.4	0.62	0.7	0.63	0.88	14.4	57.6	89.28	100.8	90.72	126.72
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	144	0.29	0.1	0.05	0.04	0.07	0.09	41.76	14.4	7.2	5.76	10.08	12.96
Wall - Gypsum board	363	0.29	0.1	0.05	0.04	0.07	0.09	105.27	36.3	18.15	14.52	25.41	32.67
Total	651							161.43	108.3	114.63	121.08	126.21	172.35
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.44	3.18	2.93	2.69	2.51	1.16
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.66	-11.42	-6.27	-3.31	-2.29	-3.84
		dBA Noise Absorption Level						**2.5**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	183	50	0.0018
Window	42	38	0.0067
Door	0	38	0
Total	225		4E-05
	Transmission Loss		**44.2**

50 STC = Wall Assembly with Standard Stucco and 5/8" Drywall

38 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

42 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 38 STC Windows & 5/8" Drywall

Project Name: Dudley St Townhomes Plan: 1 Floor: 3 Room: Bedroom 2

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	106	0.1	0.4	0.62	0.7	0.63	0.88	10.605	42.42	65.751	74.235	66.812	93.324
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	106	0.29	0.1	0.05	0.04	0.07	0.09	30.755	10.605	5.3025	4.242	7.4235	9.5445
Wall - Gypsum board	308	0.29	0.1	0.05	0.04	0.07	0.09	89.262	30.78	15.39	12.312	21.546	27.702
Total	520							130.62	83.805	86.444	90.789	95.781	130.57
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						0.00	1.92	1.79	1.58	1.34	0.00
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-22.10	-12.68	-7.41	-4.42	-3.46	-5.00
		dBA Noise Absorption Level						**1.4**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	95	50	0.0009
Window	36	38	0.0057
Door	0	38	0
Total	131		5E-05
	Transmission Loss		**42.9**

50 STC = Wall Assembly with Standard Stucco and 5/8" Drywall

38 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

42 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 38 STC Windows & 5/8" Drywall

Project Name: Dudley St Townhomes Plan: 2 Floor: 3 Room: Master Bedroom

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	178	0.1	0.4	0.62	0.7	0.63	0.88	17.785	71.14	110.27	124.5	112.05	156.51
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	178	0.29	0.1	0.05	0.04	0.07	0.09	51.577	17.785	8.8925	7.114	12.45	16.007
Wall - Gypsum board	439	0.29	0.1	0.05	0.04	0.07	0.09	127.37	43.92	21.96	17.568	30.744	39.528
Total	795							196.73	132.85	141.12	149.18	155.24	212.04
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						0.75	2.46	2.20	1.96	1.78	0.43
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-21.35	-12.14	-7.00	-4.04	-3.02	-4.57
		dBA Noise Absorption Level						**1.8**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	198	50	0.002
Window	36	38	0.0057
Door	0	38	0
Total	234		3E-05
	Transmission Loss		**44.8**

50 STC = Wall Assembly with Standard Stucco and 5/8" Drywall

38 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

43 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 38 STC Windows & 5/8" Drywall

Project Name: Dudley St Townhomes Plan: 2 Floor: 3 Room: Bedroom 2

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	118	0.1	0.4	0.62	0.7	0.63	0.88	11.845	47.38	73.439	82.915	74.624	104.24
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	118	0.29	0.1	0.05	0.04	0.07	0.09	34.351	11.845	5.9225	4.738	8.2915	10.661
Wall - Gypsum board	374	0.29	0.1	0.05	0.04	0.07	0.09	108.58	37.44	18.72	14.976	26.208	33.696
Total	611							154.77	96.665	98.082	102.63	109.12	148.59
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.80	3.84	3.78	3.58	3.31	1.97
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.30	-10.76	-5.42	-2.42	-1.49	-3.03
		dBA Noise Absorption Level						**3.3**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	216	50	0.0022
Window	18	38	0.0029
Door	0	38	0
Total	234		2E-05
	Transmission Loss		**46.7**

50 STC = Wall Assembly with Standard Stucco and 5/8" Drywall

38 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

43 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 38 STC Windows & 5/8" Drywall

Project Name: Dudley St Townhomes Plan: 3Y Floor: 3 Room: Master Bedroom

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	191	0.1	0.4	0.62	0.7	0.63	0.88	19.08	76.32	118.3	133.56	120.2	167.9
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	191	0.29	0.1	0.05	0.04	0.07	0.09	55.332	19.08	9.54	7.632	13.356	17.172
Wall - Gypsum board	415	0.29	0.1	0.05	0.04	0.07	0.09	120.41	41.52	20.76	16.608	29.064	37.368
Total	797							194.82	136.92	148.6	157.8	162.62	222.44
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.19	2.73	2.37	2.11	1.98	0.62
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-20.91	-11.87	-6.83	-3.89	-2.82	-4.38
		dBA Noise Absorption Level						**2.0**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	197	50	0.002
Window	60	38	0.0095
Door	0	38	0
Total	257		4E-05
	Transmission Loss		**43.5**

50 STC = Wall Assembly with Standard Stucco and 5/8" Drywall

38 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

42 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With Acoustical Performance 38 STC Windows & 5/8" Drywall

Project Name: Dudley St Townhomes Plan: 3Y Floor: 3 Room: Bedroom 2

Room Absorption

Type of Surface	Area	Sound Absorption Coefficient, Hz						Sound Absorption (Sabins)					
	(Sq ft)	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	131	0.1	0.4	0.62	0.7	0.63	0.88	13.08	52.32	81.096	91.56	82.404	115.1
Floor - Linoleum/Tile	0	0.02	0.03	0.03	0.03	0.03	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	131	0.29	0.1	0.05	0.04	0.07	0.09	37.932	13.08	6.54	5.232	9.156	11.772
Wall - Gypsum board	394	0.29	0.1	0.05	0.04	0.07	0.09	114.32	39.42	19.71	15.768	27.594	35.478
Total	656							165.33	104.82	107.35	112.56	119.15	162.35
		10*log(S/A) S=Exterior wall area, A= Sound Absorption						1.07	3.05	2.95	2.74	2.49	1.15
		Sound Source Adjustment Factor						-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
		Correction Factor for A-Weighted Sound Levels						-16.10	-8.60	-3.20	0.00	1.20	1.00
		A-Weighted Sound Absorption Level						-21.03	-11.55	-6.25	-3.26	-2.31	-3.85
		dBA Noise Absorption Level						**2.5**					

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10^(STC/10))
Stucco Wall	194	50	0.0019
Window	18	38	0.0029
Door	0	38	0
Total	212		2E-05
	Transmission Loss		**46.5**

50 STC = Wall Assembly with Standard Stucco and 5/8" Drywall

38 STC = Acoustic Performance dual panel window/door

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

44 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Accoustics 4th Edition , Lawrence E. Kinsler, 2000.

Noise Control in Buildings , Cyril M. Harris, 1994.

APPENDIX E

RCNM Model Construction Noise Calculation Printouts

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/26/2020
Case Description: Dudley St Townhomes - Site Preparation

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Homes to East	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	500	0
Dozer	No	40		81.7	500	0
Dozer	No	40		81.7	500	0
Tractor	No	40	84		500	0
Tractor	No	40	84		500	0
Tractor	No	40	84		500	0
Tractor	No	40	84		500	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		61.7	57.7	N/A	N/A	N/A	N/A
Dozer		61.7	57.7	N/A	N/A	N/A	N/A
Dozer		61.7	57.7	N/A	N/A	N/A	N/A
Tractor		64.0	60.0	N/A	N/A	N/A	N/A
Tractor		64.0	60.0	N/A	N/A	N/A	N/A
Tractor		64.0	60.0	N/A	N/A	N/A	N/A
Tractor		64.0	60.0	N/A	N/A	N/A	N/A
	Total	**64**	**68**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/26/2020
Case Description: Dudley St Townhomes - Site Preparation

				---- Receptor #2 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
School to South	Residential	65.4	65.4	65.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	450	0
Dozer	No	40		81.7	450	0
Dozer	No	40		81.7	450	0
Tractor	No	40.0	84		450	0
Tractor	No	40.0	84		450	0
Tractor	No	40.0	84		450	0
Tractor	No	40.0	84		450	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		62.6	58.6	N/A	N/A	N/A	N/A
Dozer		62.6	58.6	N/A	N/A	N/A	N/A
Dozer		62.6	58.6	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
	Total	**65**	**69**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/27/2020
Case Description: Dudley St Townhomes - Site Preparation Mitigated

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Homes to East	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	500	5
Dozer	No	40		81.7	500	5
Dozer	No	40		81.7	500	5
Tractor	No	40	84		500	5
Tractor	No	40	84		500	5
Tractor	No	40	84		500	5
Tractor	No	40	84		500	5

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		56.7	52.7	N/A	N/A	N/A	N/A
Dozer		56.7	52.7	N/A	N/A	N/A	N/A
Dozer		56.7	52.7	N/A	N/A	N/A	N/A
Tractor		59.0	55.0	N/A	N/A	N/A	N/A
Tractor		59.0	55.0	N/A	N/A	N/A	N/A
Tractor		59.0	55.0	N/A	N/A	N/A	N/A
Tractor		59.0	55.0	N/A	N/A	N/A	N/A
	Total	**59**	**63**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/27/2020
Case Description: Dudley St Townhomes - Site Preparation Mitigated

				---- Receptor #2 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
School to South	Residential	65.4	65.4	65.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	450	0
Dozer	No	40		81.7	450	0
Dozer	No	40		81.7	450	0
Tractor	No	40	84		450	0
Tractor	No	40	84		450	0
Tractor	No	40	84		450	0
Tractor	No	40	84		450	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		62.6	58.6	N/A	N/A	N/A	N/A
Dozer		62.6	58.6	N/A	N/A	N/A	N/A
Dozer		62.6	58.6	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
	Total	**65**	**69**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/26/2020
Case Description: Dudley St Townhomes - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Homes to East	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	500	0
Grader	No	40	85		500	0
Dozer	No	40		81.7	500	0
Tractor	No	40	84		500	0
Tractor	No	40	84		500	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Excavator	60.7	56.7	N/A	N/A	N/A	N/A
Grader	65.0	61.0	N/A	N/A	N/A	N/A
Dozer	61.7	57.7	N/A	N/A	N/A	N/A
Tractor	64.0	60.0	N/A	N/A	N/A	N/A
Tractor	64.0	60.0	N/A	N/A	N/A	N/A
Total	**65**	**66**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/26/2020
Case Description: Dudley St Townhomes - Grading

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
School to South	Residential	65.4	65.4	65.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	450	0
Grader	No	40	85		450	0
Dozer	No	40		81.7	450	0
Tractor	No	40	84		450	0
Tractor	No	40	84		450	0

		Calculated (dBA)		Results Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator		61.6	58	N/A	N/A	N/A	N/A
Grader		65.9	62	N/A	N/A	N/A	N/A
Dozer		63	59	N/A	N/A	N/A	N/A
Tractor		65	61	N/A	N/A	N/A	N/A
Tractor		64.9	61	N/A	N/A	N/A	N/A
	Total	**66**	**67**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/27/2020
Case Description: Dudley St Townhomes - Grading Mitigated

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Homes to East	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	500	5
Grader	No	40	85		500	5
Dozer	No	40		81.7	500	5
Tractor	No	40	84		500	5
Tractor	No	40	84		500	5

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator		56	52	N/A	N/A	N/A	N/A
Grader		60.0	56.0	N/A	N/A	N/A	N/A
Dozer		56.7	52.7	N/A	N/A	N/A	N/A
Tractor		59.0	55.0	N/A	N/A	N/A	N/A
Tractor		59.0	55.0	N/A	N/A	N/A	N/A
	Total	**60**	**61**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/27/2020
Case Description: Dudley St Townhomes - Grading Mitigated

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
School to South	Residential	65.4	65.4	65.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	450	0
Grader	No	40	85		450	0
Dozer	No	40		81.7	450	0
Tractor	No	40	84		450	0
Tractor	No	40	84		450	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Excavator	61.6	58	N/A	N/A	N/A	N/A
Grader	65.9	62	N/A	N/A	N/A	N/A
Dozer	63	59	N/A	N/A	N/A	N/A
Tractor	65	61	N/A	N/A	N/A	N/A
Tractor	64.9	61	N/A	N/A	N/A	N/A
Total	**66**	**67**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/26/2020
Case Description: Dudley St Townhomes - Building Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Homes to East	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	500	0
Gradall	No	40		83.4	500	0
Gradall	No	40		83.4	500	0
Gradall	No	40		83.4	500	0
Tractor	No	40	84		500	0
Tractor	No	40	84		500	0
Tractor	No	40	84		500	0
Generator	No	50		80.6	500	0
Welder / Torch	No	40		74	500	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Leq	Evening Lmax	Leq
Crane		60.6	52.6	N/A	N/A	N/A	N/A
Gradall		63.4	59.4	N/A	N/A	N/A	N/A
Gradall		63.4	59.4	N/A	N/A	N/A	N/A
Gradall		63.4	59.4	N/A	N/A	N/A	N/A
Tractor		64.0	60.0	N/A	N/A	N/A	N/A
Tractor		64.0	60.0	N/A	N/A	N/A	N/A
Tractor		64.0	60.0	N/A	N/A	N/A	N/A
Generator		60.6	57.6	N/A	N/A	N/A	N/A
Welder / Torch		54.0	50.0	N/A	N/A	N/A	N/A
	Total	**64**	**68**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/26/2020
Case Description: Dudley St Townhomes - Building Construction

				---- Receptor #2 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
School to South	Residential	65.4	65.4	65.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	450	0
Gradall	No	40		83.4	450	0
Gradall	No	40		83.4	450	0
Gradall	No	40		83.4	450	0
Tractor	No	40	84		450	0
Tractor	No	40	84		450	0
Tractor	No	40	84		450	0
Generator	No	50		80.6	450	0
Welder / Torch	No	40		74	450	0

		Calculated (dBA)		Results			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		61.5	53.5	N/A	N/A	N/A	N/A
Gradall		64.3	60.3	N/A	N/A	N/A	N/A
Gradall		64.3	60.3	N/A	N/A	N/A	N/A
Gradall		64.3	60.3	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Generator		61.5	58.5	N/A	N/A	N/A	N/A
Welder / Torch		54.9	50.9	N/A	N/A	N/A	N/A
	Total	**65**	**69**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/27/2020
Case Description: Dudley St Townhomes - Building Construction Mitigated

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Homes to East	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	500	5
Gradall	No	40		83.4	500	5
Gradall	No	40		83.4	500	5
Gradall	No	40		83.4	500	5
Tractor	No	40	84		500	5
Tractor	No	40	84		500	5
Tractor	No	40	84		500	5
Generator	No	50		80.6	500	5
Welder / Torch	No	40		74	500	5

		Calculated (dBA)		Results		Noise Limits (dBA)	
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		55.6	47.6	N/A	N/A	N/A	N/A
Gradall		58.4	54.4	N/A	N/A	N/A	N/A
Gradall		58.4	54.4	N/A	N/A	N/A	N/A
Gradall		58.4	54.4	N/A	N/A	N/A	N/A
Tractor		59.0	55.0	N/A	N/A	N/A	N/A
Tractor		59.0	55.0	N/A	N/A	N/A	N/A
Tractor		59.0	55.0	N/A	N/A	N/A	N/A
Generator		55.6	52.6	N/A	N/A	N/A	N/A
Welder / Torch		49.0	45.0	N/A	N/A	N/A	N/A
	Total	**59**	**63**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/27/2020
Case Description: Dudley St Townhomes - Building Construction Mitigated

				---- Receptor #2 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
School to South	Residential	65.4	65.4	65.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	450	0
Gradall	No	40		83.4	450	0
Gradall	No	40		83.4	450	0
Gradall	No	40		83.4	450	0
Tractor	No	40	84		450	0
Tractor	No	40	84		450	0
Tractor	No	40	84		450	0
Generator	No	50		80.6	450	0
Welder / Torch	No	40		74	450	0

		Calculated (dBA)		Results			
				Day	Noise Limits (dBA)	Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		61.5	53.5	N/A	N/A	N/A	N/A
Gradall		64.3	60.3	N/A	N/A	N/A	N/A
Gradall		64.3	60.3	N/A	N/A	N/A	N/A
Gradall		64.3	60.3	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
Generator		61.5	58.5	N/A	N/A	N/A	N/A
Welder / Torch		54.9	50.9	N/A	N/A	N/A	N/A
	Total	**65**	**69**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/26/2020
Case Description: Dudley St Townhomes - Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Homes to East	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	500	0
Paver	No	50		77.2	500	0
Paver	No	50		77.2	500	0
Paver	No	50		77.2	500	0
Roller	No	20		80	500	0
Roller	No	20		80	500	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Leq	Evening Lmax	Leq
Paver		57.2	54.2	N/A	N/A	N/A	N/A
Paver		57.2	54.2	N/A	N/A	N/A	N/A
Paver		57.2	54.2	N/A	N/A	N/A	N/A
Paver		57.2	54.2	N/A	N/A	N/A	N/A
Roller		60.0	53.0	N/A	N/A	N/A	N/A
Roller		60.0	53.0	N/A	N/A	N/A	N/A
	Total	**60**	**62**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/26/2020
Case Description: Dudley St Townhomes - Paving

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
School to South	Residential	65.4	65.4	65.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	450	0
Paver	No	50		77.2	450	0
Paver	No	50		77.2	450	0
Paver	No	50		77.2	450	0
Roller	No	20		80	450	0
Roller	No	20		80	450	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Leq	Evening Lmax	Leq
Paver		58.1	55.1	N/A	N/A	N/A	N/A
Paver		58.1	55.1	N/A	N/A	N/A	N/A
Paver		58.1	55.1	N/A	N/A	N/A	N/A
Paver		58.1	55.1	N/A	N/A	N/A	N/A
Roller		60.9	53.9	N/A	N/A	N/A	N/A
Roller		60.9	53.9	N/A	N/A	N/A	N/A
	Total	**61**	**63**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/26/2020
Case Description: Dudley St Townhomes - Painting

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Homes to East	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	500	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		57.7	53.7	N/A	N/A	N/A	N/A
	Total	**58**	**54**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
School to South	Residential	65.4	65.4	65.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	450	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		58.6	54.6	N/A	N/A	N/A	N/A
	Total	**59**	**55**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX F

FHWA Model Roadway Noise Calculation Printouts

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: Dudley St Townhomes
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterials)				Vehicle Mix 3 (I-10)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	60.83%	8.29%	23.04%	92.16%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	1.71%	0.29%	0.86%	2.85%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	2.54%	0.45%	1.99%	4.99%

Road Name: Dudley Street **Segment: North of Gillette Road**

Average Daily Traffic: 2200 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Collector

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-6.77	1.52	-1.20	56.07	53.94	52.63	46.62	55.04	55.66	70 dBA:	**4**	**4**
Medium Trucks	73.11	-24.00	1.52	-1.20	49.43	28.18	34.20	15.91	29.05	31.80	65 dBA:	**9**	**10**
Heavy Trucks	80.26	-27.96	1.52	-1.20	52.62	27.27	23.87	28.52	34.72	34.81	60 dBA:	**19**	**21**
				Total:	**58.29**	**53.96**	**52.70**	**46.69**	**55.09**	**55.72**	55 dBA:	**41**	**45**

Road Name: Dudley Street **Segment: South of Gillette Road**

Average Daily Traffic: 7200 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.53	-0.87	-1.20	60.51	58.14	56.84	50.79	59.22	59.85	70 dBA:	**14**	**15**
Medium Trucks	74.83	-17.40	-0.87	-1.20	55.36	36.15	28.37	37.58	43.73	43.77	65 dBA:	**29**	**32**
Heavy Trucks	80.05	-15.18	-0.87	-1.20	62.80	45.81	38.03	47.23	53.39	53.42	60 dBA:	**63**	**68**
				Total:	**65.28**	**58.41**	**56.91**	**52.52**	**60.32**	**60.83**	55 dBA:	**136**	**147**

Road Name: Dudley Street **Segment: South of I-10 Eastbound Ramps**

Average Daily Traffic: 6300 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-3.11	-0.87	-1.20	59.93	57.56	56.26	50.21	58.64	59.27	70 dBA:	**12**	**13**
Medium Trucks	74.83	-17.98	-0.87	-1.20	54.78	35.57	27.79	37.00	43.15	43.19	65 dBA:	**27**	**29**
Heavy Trucks	80.05	-15.76	-0.87	-1.20	62.22	45.23	37.45	46.65	52.81	52.84	60 dBA:	**58**	**62**
				Total:	**64.70**	**57.83**	**56.33**	**51.94**	**59.75**	**60.25**	55 dBA:	**124**	**134**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: Dudley St Townhomes
Site Conditions: Soft

Road Name: Dudley Street **Segment: South of Murchison Avenue**

Average Daily Traffic: 6400 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 2 | Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 50.83 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-3.05	-0.21	-1.20	60.65	58.28	56.99	50.93	59.36	60.00	70 dBA:	**13**	**14**
Medium Trucks	74.83	-17.91	-0.21	-1.20	55.50	36.30	28.51	37.72	43.88	43.91	65 dBA:	**27**	**30**
Heavy Trucks	80.05	-15.69	-0.21	-1.20	62.94	45.95	38.17	47.38	53.53	53.57	60 dBA:	**59**	**64**
				Total:	**65.42**	**58.55**	**57.05**	**52.66**	**60.47**	**60.97**	55 dBA:	**127**	**138**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: Dudley St Townhomes
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterials)				Vehicle Mix 3 (I-10)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	60.83%	8.29%	23.04%	92.16%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	1.71%	0.29%	0.86%	2.85%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	2.54%	0.45%	1.99%	4.99%

Road Name: Dudley Street **Segment: North of Gillette Road**

Average Daily Traffic: 2200 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Collector

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-6.77	1.52	-1.20	56.07	53.94	52.63	46.62	55.04	55.66	70 dBA:	**4**	**4**
Medium Trucks	73.11	-24.00	1.52	-1.20	49.43	28.18	34.20	15.91	29.05	31.80	65 dBA:	**9**	**10**
Heavy Trucks	80.26	-27.96	1.52	-1.20	52.62	27.27	23.87	28.52	34.72	34.81	60 dBA:	**19**	**21**
				Total:	**58.29**	**53.96**	**52.70**	**46.69**	**55.09**	**55.72**	55 dBA:	**41**	**45**

Road Name: Dudley Street **Segment: South of Gillette Road**

Average Daily Traffic: 7500 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.36	-0.87	-1.20	60.69	58.31	57.02	50.97	59.40	60.03	70 dBA:	**14**	**15**
Medium Trucks	74.83	-17.22	-0.87	-1.20	55.54	36.33	28.55	37.76	43.91	43.95	65 dBA:	**30**	**33**
Heavy Trucks	80.05	-15.01	-0.87	-1.20	62.97	45.99	38.20	47.41	53.57	53.60	60 dBA:	**65**	**70**
				Total:	**65.46**	**58.59**	**57.08**	**52.70**	**60.50**	**61.01**	55 dBA:	**140**	**151**

Road Name: Dudley Street **Segment: South of I-10 Eastbound Ramps**

Average Daily Traffic: 6400 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-3.05	-0.87	-1.20	60.00	57.63	56.33	50.28	58.71	59.34	70 dBA:	**13**	**14**
Medium Trucks	74.83	-17.91	-0.87	-1.20	54.85	35.64	27.86	37.07	43.22	43.26	65 dBA:	**27**	**29**
Heavy Trucks	80.05	-15.69	-0.87	-1.20	62.29	45.30	37.51	46.72	52.88	52.91	60 dBA:	**58**	**63**
				Total:	**64.77**	**57.90**	**56.40**	**52.01**	**59.81**	**60.32**	55 dBA:	**126**	**136**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: Dudley St Townhomes
Site Conditions: Soft

Road Name: Dudley Street **Segment: South of Murchison Avenue**

Average Daily Traffic: 6700 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 50.83 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.85	-0.21	-1.20	60.85	58.48	57.19	51.13	59.56	60.19	70 dBA:	**13**	**14**
Medium Trucks	74.83	-17.71	-0.21	-1.20	55.70	36.49	28.71	37.92	44.08	44.11	65 dBA:	**28**	**31**
Heavy Trucks	80.05	-15.50	-0.21	-1.20	63.14	46.15	38.37	47.58	53.73	53.76	60 dBA:	**61**	**66**
				Total:	**65.62**	**58.75**	**57.25**	**52.86**	**60.67**	**61.17**	55 dBA:	**131**	**142**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: OPENING YEAR 2022 WITHOUT PROJECT CONDITIONS

Project: Dudley St Townhomes
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterials)				Vehicle Mix 3 (I-10)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	60.83%	8.29%	23.04%	92.16%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	1.71%	0.29%	0.86%	2.85%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	2.54%	0.45%	1.99%	4.99%

Road Name: Dudley Street **Segment: North of Gillette Road**

Average Daily Traffic: 2300 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Collector

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-6.57	1.52	-1.20	56.26	54.14	52.82	46.81	55.23	55.86	70 dBA:	**4**	**5**
Medium Trucks	73.11	-23.81	1.52	-1.20	49.62	28.37	34.39	16.10	29.24	32.00	65 dBA:	**9**	**10**
Heavy Trucks	80.26	-27.77	1.52	-1.20	52.81	27.46	24.06	28.71	34.91	35.01	60 dBA:	**19**	**21**
				Total:	**58.48**	**54.16**	**52.89**	**46.88**	**55.28**	**55.91**	55 dBA:	**42**	**46**

Road Name: Dudley Street **Segment: South of Gillette Road**

Average Daily Traffic: 7600 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.30	-0.87	-1.20	60.74	58.37	57.08	51.02	59.46	60.09	70 dBA:	**14**	**15**
Medium Trucks	74.83	-17.17	-0.87	-1.20	55.60	36.39	28.61	37.81	43.97	44.00	65 dBA:	**30**	**33**
Heavy Trucks	80.05	-14.95	-0.87	-1.20	63.03	46.04	38.26	47.47	53.62	53.66	60 dBA:	**65**	**71**
				Total:	**65.51**	**58.65**	**57.14**	**52.75**	**60.56**	**61.06**	55 dBA:	**141**	**152**

Road Name: Dudley Street **Segment: South of I-10 Eastbound Ramps**

Average Daily Traffic: 6700 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.85	-0.87	-1.20	60.20	57.82	56.53	50.48	58.91	59.54	70 dBA:	**13**	**14**
Medium Trucks	74.83	-17.71	-0.87	-1.20	55.05	35.84	28.06	37.27	43.42	43.46	65 dBA:	**28**	**30**
Heavy Trucks	80.05	-15.50	-0.87	-1.20	62.49	45.50	37.71	46.92	53.08	53.11	60 dBA:	**60**	**65**
				Total:	**64.97**	**58.10**	**56.59**	**52.21**	**60.01**	**60.52**	55 dBA:	**130**	**140**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: OPENING YEAR 2022 WITHOUT PROJECT CONDITIONS **Project: Dudley St Townhomes**

Site Conditions: Soft

Road Name: Dudley Street **Segment: South of Murchison Avenue**

Average Daily Traffic: 6800 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 50.83 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.78	-0.21	-1.20	60.92	58.54	57.25	51.20	59.63	60.26	70 dBA:	**13**	**14**
Medium Trucks	74.83	-17.65	-0.21	-1.20	55.77	36.56	28.78	37.99	44.14	44.17	65 dBA:	**29**	**31**
Heavy Trucks	80.05	-15.43	-0.21	-1.20	63.20	46.21	38.43	47.64	53.80	53.83	60 dBA:	**62**	**66**
				Total:	**65.69**	**58.82**	**57.31**	**52.92**	**60.73**	**61.24**	55 dBA:	**133**	**143**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: OPENING YEAR 2022 WITH PROJECT CONDITIONS

Project: Dudley St Townhomes
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterials)				Vehicle Mix 3 (I-10)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	60.83%	8.29%	23.04%	92.16%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	1.71%	0.29%	0.86%	2.85%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	2.54%	0.45%	1.99%	4.99%

Road Name: Dudley Street **Segment: North of Gillette Road**

Average Daily Traffic: 2400 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Collector

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-6.39	1.52	-1.20	56.44	54.32	53.01	47.00	55.42	56.04	70 dBA:	**4**	**5**
Medium Trucks	73.11	-23.63	1.52	-1.20	49.81	28.56	34.58	16.29	29.43	32.18	65 dBA:	**9**	**10**
Heavy Trucks	80.26	-27.58	1.52	-1.20	53.00	27.65	24.25	28.90	35.10	35.19	60 dBA:	**20**	**22**
				Total:	**58.67**	**54.34**	**53.08**	**47.07**	**55.47**	**56.10**	55 dBA:	**43**	**47**

Road Name: Dudley Street **Segment: South of Gillette Road**

Average Daily Traffic: 7900 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.13	-0.87	-1.20	60.91	58.54	57.25	51.19	59.62	60.26	70 dBA:	**14**	**16**
Medium Trucks	74.83	-17.00	-0.87	-1.20	55.76	36.56	28.77	37.98	44.14	44.17	65 dBA:	**31**	**34**
Heavy Trucks	80.05	-14.78	-0.87	-1.20	63.20	46.21	38.43	47.64	53.79	53.83	60 dBA:	**67**	**72**
				Total:	**65.68**	**58.81**	**57.31**	**52.92**	**60.73**	**61.23**	55 dBA:	**145**	**156**

Road Name: Dudley Street **Segment: South of I-10 Eastbound Ramps**

Average Daily Traffic: 6800 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.78	-0.87	-1.20	60.26	57.89	56.60	50.54	58.97	59.60	70 dBA:	**13**	**14**
Medium Trucks	74.83	-17.65	-0.87	-1.20	55.11	35.90	28.12	37.33	43.49	43.52	65 dBA:	**28**	**30**
Heavy Trucks	80.05	-15.43	-0.87	-1.20	62.55	45.56	37.78	46.99	53.14	53.17	60 dBA:	**61**	**66**
				Total:	**65.03**	**58.16**	**56.66**	**52.27**	**60.08**	**60.58**	55 dBA:	**131**	**141**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: OPENING YEAR 2022 WITH PROJECT CONDITIONS **Project: Dudley St Townhomes**

Site Conditions: Soft

Road Name: Dudley Street **Segment: South of Murchison Avenue**

Average Daily Traffic: 7100 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 50.83 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.60	-0.21	-1.20	61.10	58.73	57.44	51.38	59.82	60.45	70 dBA:	**14**	**15**
Medium Trucks	74.83	-17.46	-0.21	-1.20	55.95	36.75	28.97	38.17	44.33	44.36	65 dBA:	**29**	**32**
Heavy Trucks	80.05	-15.24	-0.21	-1.20	63.39	46.40	38.62	47.83	53.98	54.02	60 dBA:	**63**	**68**
				Total:	**65.87**	**59.00**	**57.50**	**53.11**	**60.92**	**61.42**	55 dBA:	**136**	**147**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: HORIZON YEAR 2040 WITHOUT PROJECT CONDITIONS

Project: Dudley St Townhomes
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterials)				Vehicle Mix 3 (I-10)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	60.83%	8.29%	23.04%	92.16%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	1.71%	0.29%	0.86%	2.85%
Heavy Trucks	9.00%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	2.54%	0.45%	1.99%	4.99%

Road Name: Dudley Street **Segment: North of Gillette Road**

Average Daily Traffic: 2700 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Collector

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-5.88	1.52	-1.20	56.96	54.83	53.52	47.51	55.93	56.55	70 dBA:	**5**	**5**
Medium Trucks	73.11	-23.11	1.52	-1.20	50.32	29.07	35.09	16.80	29.94	32.69	65 dBA:	**10**	**11**
Heavy Trucks	80.26	-27.07	1.52	-1.20	53.51	42.26	24.76	29.41	40.69	40.72	60 dBA:	**22**	**24**
				Total:	**59.18**	**55.08**	**53.59**	**47.58**	**56.07**	**56.68**	55 dBA:	**47**	**52**

Road Name: Dudley Street **Segment: South of Gillette Road**

Average Daily Traffic: 8800 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.66	-0.87	-1.20	61.38	59.01	57.72	51.66	60.09	60.72	70 dBA:	**16**	**17**
Medium Trucks	74.83	-16.53	-0.87	-1.20	56.23	37.02	29.24	38.45	44.61	44.64	65 dBA:	**33**	**36**
Heavy Trucks	80.05	-14.31	-0.87	-1.20	63.67	46.68	38.90	48.11	54.26	54.29	60 dBA:	**72**	**78**
				Total:	**66.15**	**59.28**	**57.78**	**53.39**	**61.20**	**61.70**	55 dBA:	**155**	**168**

Road Name: Dudley Street **Segment: South of I-10 Eastbound Ramps**

Average Daily Traffic: 7800 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.19	-0.87	-1.20	60.86	58.49	57.19	51.14	59.57	60.20	70 dBA:	**14**	**15**
Medium Trucks	74.83	-17.05	-0.87	-1.20	55.71	36.50	28.72	37.93	44.08	44.12	65 dBA:	**31**	**33**
Heavy Trucks	80.05	-14.84	-0.87	-1.20	63.15	46.16	38.37	47.58	53.74	53.77	60 dBA:	**67**	**72**
				Total:	**65.63**	**58.76**	**57.25**	**52.87**	**60.67**	**61.18**	55 dBA:	**143**	**155**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: HORIZON YEAR 2040 WITHOUT PROJECT CONDITIONS **Project: Dudley St Townhomes**

Site Conditions: Soft

Road Name: Dudley Street **Segment: South of Murchison Avenue**

Average Daily Traffic: 7900 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 50.83 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.13	-0.21	-1.20	61.57	59.19	57.90	51.85	60.28	60.91	70 dBA:	**15**	**16**
Medium Trucks	74.83	-17.00	-0.21	-1.20	56.42	37.21	29.43	38.64	44.79	44.83	65 dBA:	**32**	**34**
Heavy Trucks	80.05	-14.78	-0.21	-1.20	63.85	46.87	39.08	48.29	54.45	54.48	60 dBA:	**68**	**73**
				Total:	**66.34**	**59.47**	**57.96**	**53.58**	**61.38**	**61.89**	55 dBA:	**147**	**158**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: HORIZON YEAR 2040 WITH PROJECT CONDITIONS

Project: Dudley St Townhomes
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterials)				Vehicle Mix 3 (I-10)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	60.83%	8.29%	23.04%	92.16%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	1.71%	0.29%	0.86%	2.85%
Heavy Trucks	9.00%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	2.54%	0.45%	1.99%	4.99%

Road Name: Dudley Street **Segment: North of Gillette Road**

Average Daily Traffic: 2700 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Collector

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-5.88	1.52	-1.20	56.96	54.83	53.52	47.51	55.93	56.55	70 dBA:	**5**	**5**
Medium Trucks	73.11	-23.11	1.52	-1.20	50.32	29.07	35.09	16.80	29.94	32.69	65 dBA:	**10**	**11**
Heavy Trucks	80.26	-27.07	1.52	-1.20	53.51	42.26	24.76	29.41	40.69	40.72	60 dBA:	**22**	**24**
				Total:	**59.18**	**55.08**	**53.59**	**47.58**	**56.07**	**56.68**	55 dBA:	**47**	**52**

Road Name: Dudley Street **Segment: South of Gillette Road**

Average Daily Traffic: 9100 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.52	-0.87	-1.20	61.53	59.15	57.86	51.81	60.24	60.87	70 dBA:	**16**	**17**
Medium Trucks	74.83	-16.38	-0.87	-1.20	56.38	37.17	29.39	38.60	44.75	44.78	65 dBA:	**34**	**37**
Heavy Trucks	80.05	-14.17	-0.87	-1.20	63.81	46.82	39.04	48.25	54.41	54.44	60 dBA:	**74**	**80**
				Total:	**66.30**	**59.43**	**57.92**	**53.54**	**61.34**	**61.85**	55 dBA:	**159**	**172**

Road Name: Dudley Street **Segment: South of I-10 Eastbound Ramps**

Average Daily Traffic: 7900 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.13	-0.87	-1.20	60.91	58.54	57.25	51.19	59.62	60.26	70 dBA:	**14**	**16**
Medium Trucks	74.83	-17.00	-0.87	-1.20	55.76	36.56	28.77	37.98	44.14	44.17	65 dBA:	**31**	**34**
Heavy Trucks	80.05	-14.78	-0.87	-1.20	63.20	46.21	38.43	47.64	53.79	53.83	60 dBA:	**67**	**72**
				Total:	**65.68**	**58.81**	**57.31**	**52.92**	**60.73**	**61.23**	55 dBA:	**145**	**156**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: HORIZON YEAR 2040 WITH PROJECT CONDITIONS **Project: Dudley St Townhomes**

Site Conditions: Soft

Road Name: Dudley Street **Segment: South of Murchison Avenue**

Average Daily Traffic: 8200 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Arterial

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 50.83 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.97	-0.21	-1.20	61.73	59.36	58.06	52.01	60.44	61.07	70 dBA:	**15**	**16**
Medium Trucks	74.83	-16.84	-0.21	-1.20	56.58	37.37	29.59	38.80	44.95	44.99	65 dBA:	**32**	**35**
Heavy Trucks	80.05	-14.62	-0.21	-1.20	64.02	47.03	39.25	48.45	54.61	54.64	60 dBA:	**70**	**75**
				Total:	**66.50**	**59.63**	**58.13**	**53.74**	**61.54**	**62.05**	55 dBA:	**150**	**162**

APPENDIX G

Operational Reference Noise Measurements and Sound Wall Calculations

File Translated: Z:\Vista Env\2007\070801 - Orange-SullyMiller\Noise\Noise Measurements\Pool\Pool.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name: Vista Environmental
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: Laguna Beach High School Pool
Note1: 15' southeast of pool approximately 50 people in pool area
Note2: outside of wrought iron fence

Overall Any Data
Start Time: 29-Jul-2009 14:27:25
Elapsed Time: 00:10:00.6

	A Weight	C Weight	Flat
Leq:	66.6 dBA	68.9 dBC	69.4 dBF
SEL:	94.4 dBA	96.7 dBC	97.2 dBF
Peak:	102.2 dBA	103.5 dBC	103.5 dBF
	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27
Lmax (slow):	77.3 dBA	77.1 dBC	77.1 dBF
	29-Jul-2009 14:35:38	29-Jul-2009 14:27:26	29-Jul-2009 14:27:26
Lmin (slow):	60.5 dBA	65.1 dBC	65.5 dBF
	29-Jul-2009 14:30:48	29-Jul-2009 14:31:59	29-Jul-2009 14:31:59
Lmax (fast):	82.5 dBA	81.1 dBC	81.5 dBF
	29-Jul-2009 14:35:38	29-Jul-2009 14:35:38	29-Jul-2009 14:35:38
Lmin (fast):	57.9 dBA	63.7 dBC	64.3 dBF
	29-Jul-2009 14:31:15	29-Jul-2009 14:27:39	29-Jul-2009 14:27:39
Lmax (impulse):	84.0 dBA	85.1 dBC	85.1 dBF
	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27
Lmin (impulse):	60.8 dBA	65.1 dBC	65.5 dBF
	29-Jul-2009 14:30:48	29-Jul-2009 14:31:59	29-Jul-2009 14:31:59

Spectra

Date	Time	Run Time
29-Jul-2009	14:27:25	00:10:00.6

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	53.4		55.1		30.1		630	56.9		58.5		46.3	
16.0	53.2	58.3	55.5	62.1	34.1	38.6	800	58.6		63.6		48.1	
20.0	53.9		59.7		35.7		1000	59.4	63.7	61.4	70.3	46.9	51.8
25.0	52.0		54.5		36.2		1250	58.7		68.5		45.8	
31.5	54.0	58.6	66.8	68.4	37.7	43.4	1600	57.2		62.8		47.0	
40.0	55.0		62.6		40.7		2000	55.2	60.3	64.7	76.3	45.2	50.1
50.0	55.4		65.5		43.7		2500	53.3		75.8		42.8	
63.0	56.3	59.9	60.0	67.1	44.1	47.9	3150	50.2		72.3		41.7	
80.0	53.0		57.8		41.2		4000	47.2	52.6	52.6	72.4	39.2	44.4
100	54.3		54.1		39.3		5000	43.8		56.0		36.4	
125	60.9	62.0	60.7	62.2	55.1	55.3	6300	39.7		50.4		32.7	
160	49.5		53.6		38.4		8000	36.4	42.0	41.5	51.1	29.8	35.1
200	49.1		56.0		40.8		10000	33.3		37.3		26.3	
250	49.9	54.7	57.2	62.0	41.8	46.5	12500	30.2		34.6		23.3	
315	50.6		58.1		42.5		16000	26.8	32.4	32.3	37.0	20.8	26.5
400	53.5		61.8		46.5		20000	23.4		26.8		20.7	
500	56.1	60.5	62.6	66.1	47.0	51.4							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 1 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: Z:\Vista Env\2007\070801 - Orange-SullyMiller\Noise\Noise Measurements\Pool\Pool.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 29-Jul-2009 14:27:25
Elapsed Time: 00:10:00.6

	A Weight	C Weight	Flat
Leq:	66.6 dBA	68.9 dBC	69.4 dBF
SEL:	94.4 dBA	96.7 dBC	97.2 dBF
Peak:	102.2 dBA	103.5 dBC	103.5 dBF
	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27
Lmax (slow):	77.3 dBA	77.1 dBC	77.1 dBF
	29-Jul-2009 14:35:38	29-Jul-2009 14:27:26	29-Jul-2009 14:27:26
Lmin (slow):	60.5 dBA	65.1 dBC	65.5 dBF
	29-Jul-2009 14:30:48	29-Jul-2009 14:31:59	29-Jul-2009 14:31:59
Lmax (fast):	82.5 dBA	81.1 dBC	81.5 dBF
	29-Jul-2009 14:35:38	29-Jul-2009 14:35:38	29-Jul-2009 14:35:38
Lmin (fast):	57.9 dBA	63.7 dBC	64.3 dBF
	29-Jul-2009 14:31:15	29-Jul-2009 14:27:39	29-Jul-2009 14:27:39
Lmax (impulse):	84.0 dBA	85.1 dBC	85.1 dBF
	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27
Lmin (impulse):	60.8 dBA	65.1 dBC	65.5 dBF
	29-Jul-2009 14:30:48	29-Jul-2009 14:31:59	29-Jul-2009 14:31:59

Calibrated: 29-Jul-2009 14:25:33 Offset: -48.0 dB
Checked: 29-Jul-2009 14:25:33 Level: 94.0 dB
Calibrator not set Level: 94.0 dB
Cal Records Count: 1

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

Stationary Noise Calculations - Homes East of Project Site

Stationary Noise Sources	Reference Distance	Reference Leq	Homes Adjacent to Project Site Distance	Leq	1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
Air Conditioning Equipment	10	66.6	40	55	(eq. N-2141.2 of TeNS)
Pool and Spa	15	66.6	530	36	

Stationary Noise Sources	Distance from Receptor to Wall	Distance from source to Wall	Height of Wall (feet)	Without Wall Noise Level at Property	With Wall Noise Level at Property	Source Height (feet)	Exterior Observer Height (feet)	Source Frequency (hz)	barrier to receiver - b (all)	source to barrier - a	source to receiver - c	path difference y =a+b-c (auto)	line of sight (slope)	fresnel	Barrier Atten
Air Conditioning Eq	5	40	4	55	**48**	2.5	5	800	5.0990	40.0281	45.06939	0.0577	1	0.16425	-6.48
Pool and Spa	5	530	5	36	**31**	5	5	800	5.0000	530	535	0.0000	1	0	-4.9

Combined Noise Levels **48**

Stationary Noise Calculations - School South of Project Site

Stationary Noise Sources	Reference Distance	Reference Leq	School Adjacent to Project Site Distance	Leq	1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
Air Conditioning Equipment	10	66.6	60	51	(eq. N-2141.2 of TeNS)
Pool	15	66.6	140	47	

Stationary Noise Sources	Distance from Receptor to Wall	Distance from source to Wall	Height of Wall (feet)	Without Wall Noise Level at Property	With Wall Noise Level at Property	Source Height (feet)	Exterior Observer Height (feet)	Source Frequency (hz)	barrier to receiver - b (all)	source to barrier - a	source to receiver - c	path difference y =a+b-c (auto)	line of sight (slope)	fresnel	Barrier Atten
Air Conditioning Eq	5	60	4	51	**44**	2.5	5	800	5.0990	60.0187	65.04806	0.0697	1	0.19828	-6.72
Pool	5	140	5	47	**42**	5	5	800	5.0000	140	145	0.0000	1	0	-4.9

Combined Noise Levels **46**

APPENDIX H

SoundPlan Model Horizon Year 2040 With Project Noise Calculations

Dudley St Multi-Family Residential
Assessed receiver levels - Horizon Year 2040 With Project

Name	Floor	X m	Dir	Y m	Z m	Ldn dB(A)	Leq,d dB(A)	Leq,e dB(A)	Leq,n dB(A)
Building 1	G	112.4	N	261.3	255.4	69.3	64.2	61.9	62.4
	F2				258.2	74.5	69.3	67.1	67.6
	F3				261.0	82.0	77.0	74.7	75.1
Building 2	G	131.0	W	246.1	255.9	66.8	61.7	59.5	59.9
	F2				258.7	70.4	65.3	63.1	63.5
	F3				261.5	74.5	69.4	67.2	67.6
Building 3	G	163.3	N	264.2	256.0	70.7	65.6	63.4	63.8
	F2				258.8	76.8	71.8	69.5	69.9
	F3				261.6	86.2	81.4	79.1	79.3
Building 4	G	192.7	E	250.2	256.3	63.9	58.9	56.6	57.1
	F2				259.1	67.9	62.7	60.5	61.0
	F3				261.9	72.8	67.8	65.5	66.0
Building 5	G	210.8	N	262.1	256.5	70.7	65.7	63.4	63.8
	F2				259.3	77.1	72.0	69.8	70.2
	F3				262.1	86.4	81.6	79.3	79.5
Building 6	G	240.7	E	258.2	256.7	69.0	64.0	61.7	62.1
	F2				259.5	74.3	69.2	67.0	67.4
	F3				262.3	83.0	78.1	75.8	76.1
Building 7	G	264.4	E	240.3	256.7	66.9	61.9	59.6	60.1
	F2				259.5	70.2	65.1	62.9	63.4
	F3				262.3	75.3	70.3	68.0	68.4
Building 8	G	100.9	W	210.6	255.5	66.8	61.6	59.2	60.0
	F2				258.3	67.4	62.2	59.9	60.6
	F3				261.1	69.5	64.2	62.0	62.6

Dudley St Multi-Family Residential
Emission calculation road - Horizon Year 2040 With Project With West Sound Wall

Road	KM	ADT	MSVges Day	MSVges Evening	MSVges Night	Pavement type	Gradient	
	km	Veh/24h	Veh/h	Veh/h	Veh/h		%	
I-10 Freeway	0.000	268900	14598.35	8092.27	7715.89	PCC (Portland cement concrete)	0.5	
Dudley St north of I-10 EB Ramps	0.000	9100	555.57	396.44	138.21	Average (of DGAC and PCC)	5.5	
Dudley St south of I-10 eastbound ramps	0.000	7900	482.30	344.16	119.98	Average (of DGAC and PCC)	-4.1	