39888 Balentine Drive Hotel Project

Categorical Exemption Report

prepared by

City of Newark
Community Development Department
37101 Newark Boulevard
Newark, California 94560

prepared with the assistance of

Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, California 94612

October 2022

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Environmental Scientists | Planners | Engineers
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1 Introduction

This report serves as the technical documentation of an environmental analysis performed by Rincon Consultants, Inc. for the 39888 Balentine Drive Hotel Project in the City of Newark. The intent of the analysis is to document whether the project is eligible for a Class 32 Categorical Exemption (CE) under the California Environmental Quality Act (CEQA). The report provides an introduction, project description, and evaluation of the project's consistency with the requirements for a Class 32 exemption. This includes an analysis of the project's potential impacts in the areas of biological resources, traffic, air quality, noise, water quality, and historic resources. The report concludes that the project is eligible for a Class 32 CE.

The City of Newark proposes to adopt a Class 32 CE for a proposed project at 39888 Balentine Drive. CEQA Guidelines Section 15332 states that a Class 32 CE is allowed when:

a. The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.
b. The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.
c. The project site has no value as habitat for endangered, rare, or threatened species.
d. Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
e. The site can be adequately served by all required utilities and public services.

Additionally, CEQA Guidelines Section 15300.2 states that a categorical exemption "shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource."

Rincon Consultants, Inc. evaluated the project's consistency with the above requirements, including its potential impacts in the areas of biological resources, traffic, noise, air quality, water quality, and historic resources to confirm the project's eligibility for the Class 32 exemption.

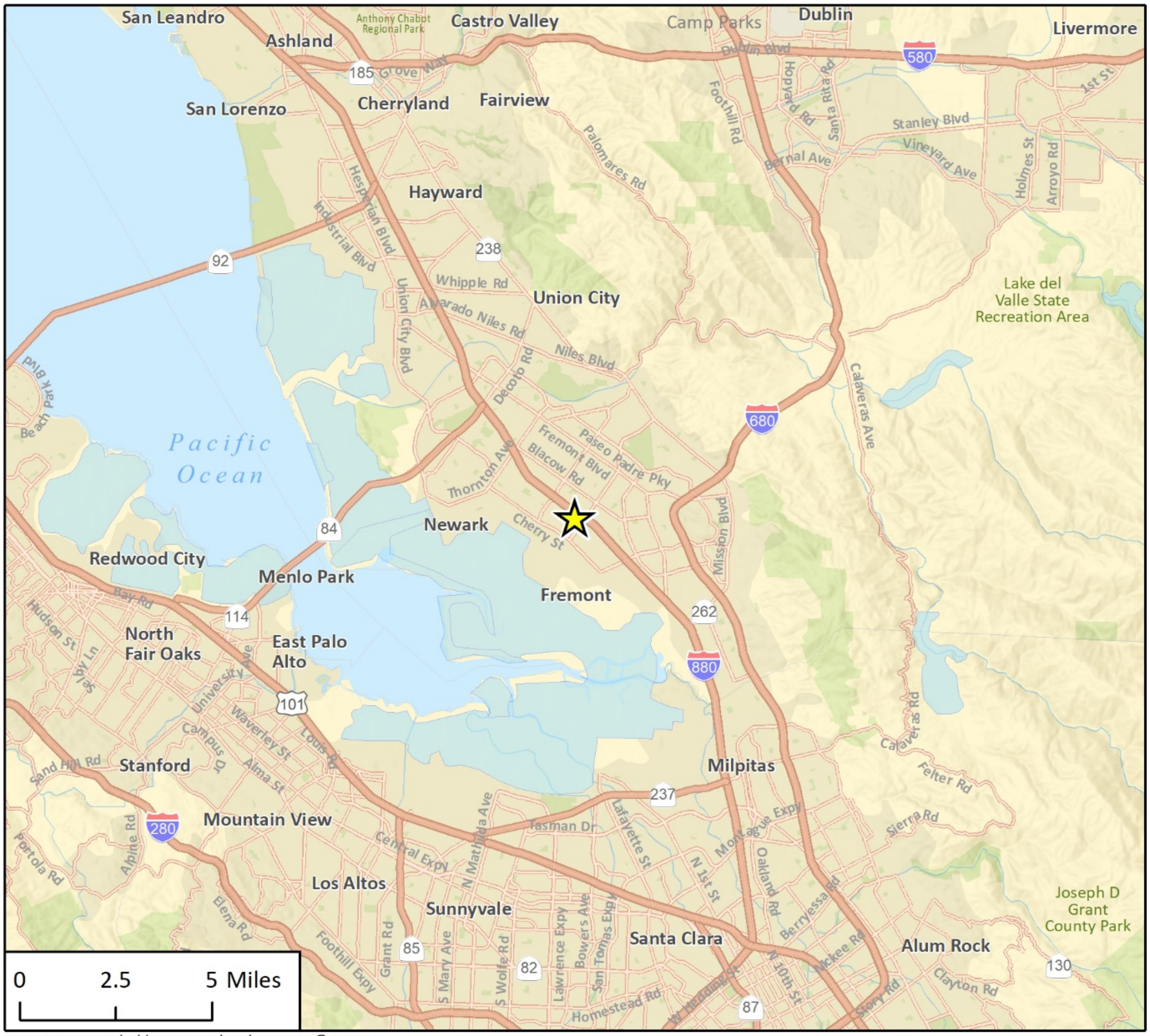
2 Project Site and Existing Conditions

The project site encompasses 1.66 acres (72,389.75 square feet) and one parcel at 39888 Balentine Drive (Alameda County Assessor's Parcel Number 901-0195-010) in the City of Newark. The site is bounded by Balentine Drive to the south, Mowry School Road to the east, and a paved access easement to the north and west. Figure 1 shows the regional location of the project site, and Figure 2 shows the project site's immediate location and nearby land uses.

The site is in a primarily commercial area in the City of Newark. The site is surrounded by restaurants and surface parking to the north, a hotel to the east, an office structure and surface parking to the south, and a car dealership to the west. Other nearby uses include additional hotels, car dealerships, restaurants, grocery stores, and other commercial retail and services. Interstate 880 (I-880) is located approximately 525 feet north of the site. The nearest residential uses include a multi-family residential development with several three-story residences approximately 600 feet to the south, and a single-family residential neighborhood approximately 800 feet to the north across I-880.

The project site is generally level in topography, almost entirely paved, and includes minimal landscaping primarily along the perimeters of the site. One existing building is located at the eastern portion of the site. The building is one story, 9,953 square feet, and currently used as a restaurant. The remaining portion of the site is covered by a surface parking lot.

Figure 1 Regional Location



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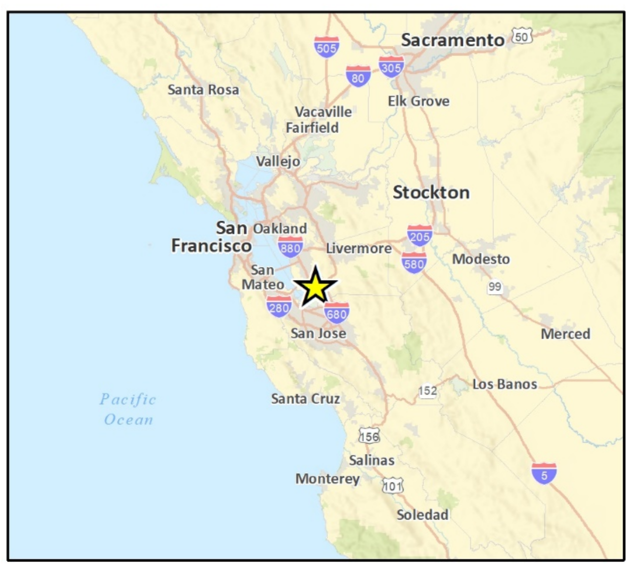

☆ Project Location

N

Figure 2 Project Site Location

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3 Project Description

The proposed project would involve demolition of the existing building at 39888 Balentine Drive and construction of a new hotel. The new building would be approximately 75,704 square feet, five stories with a height of approximately 64 feet, and would consist of 132 guest rooms and guest amenities including ballrooms, a bar and dining area, fitness room, and roof terrace. The project would also involve construction of a surface parking lot with 96 vehicle parking spaces. Table 1 shows the characteristics of the proposed new building, Figure 3 shows the proposed site plan, and Figure 4 shows a simulated view of the hotel building from Balentine Drive.

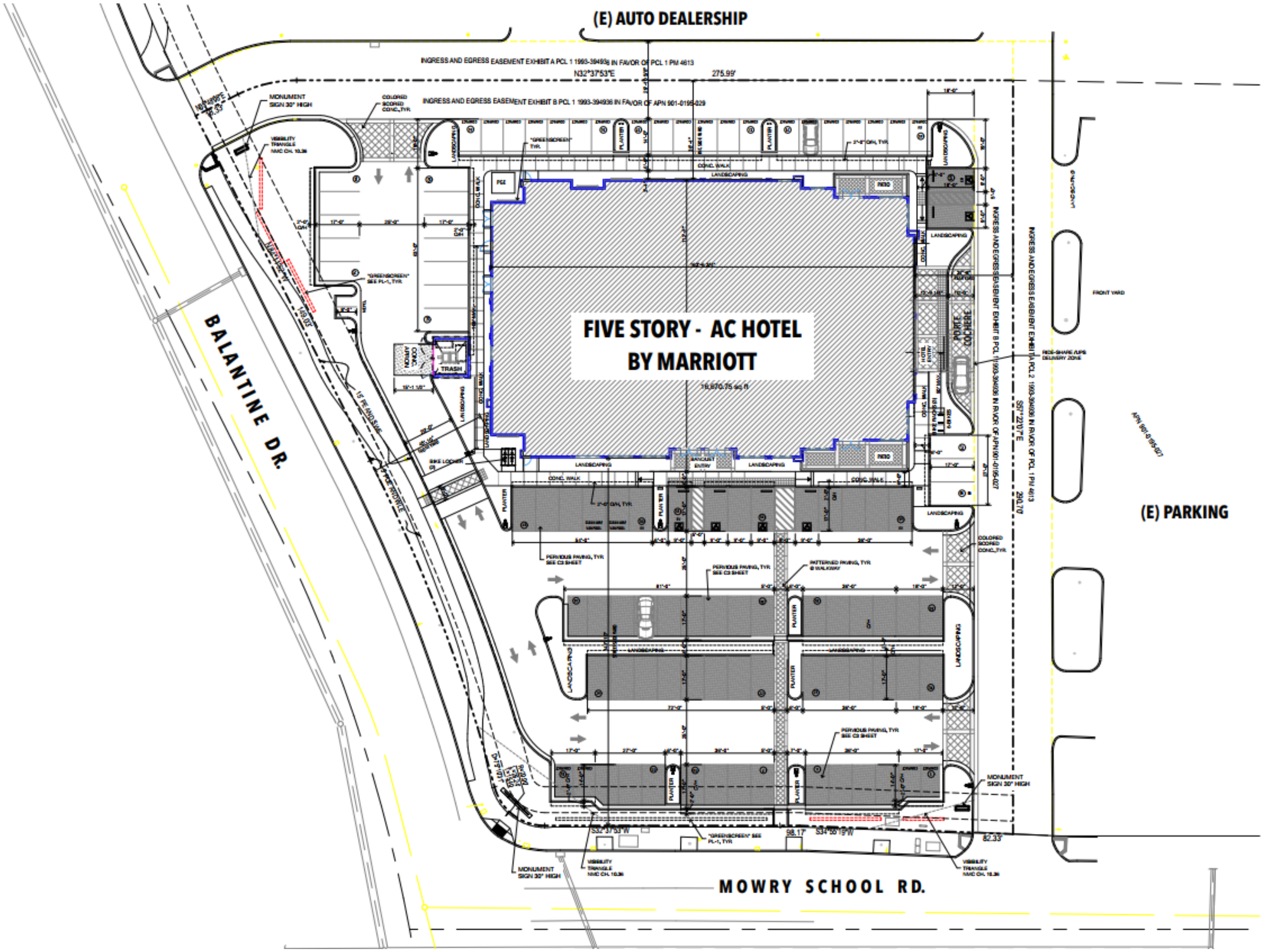
Table 1 Project Characteristics

Features	
Address	39888 Balentine Drive
Assessor's Parcel Number (APN)	901-0195-010
Lot Area	72,389 SF (1.66 acres)
Gross Floor Area	**Level 1:** 16,671 SF **Level 2:** 15,341 SF **Level 3:** 14,564 SF **Level 4:** 14,564 SF **Level 5**: 14,654 SF **Total:** 75,704 SF
Height	64 feet 5 stories above grade
Hotel Guest Rooms	**Level 1:** 0 **Level 2:** 33 **Level 3:** 33 **Level 4:** 33 **Level 5**: 33 **Total:** 132
Landscaped Area	3,020 SF
Parking	**Vehicle:** 96 **Bicycle:** 8 (6 short-term, 2 long-term)

Notes:

SF = square feet

Figure 3 Proposed Site Plan



Source: SKL Associates, Inc., 2022

Figure 4 Simulated View of the Project from Balentine Drive Proposed North and West Elevations

Source: SKL Associates, Inc., 2022

New Hotel Development

The proposed five-story hotel building would be located at the western portion of the project site. The hotel guest rooms would be located on the second through fifth floors, with 33 rooms per floor. The first floor would include space for recreation and guest services, including a main lobby, a pre-function area, two ballrooms, a bar and dining area, staff offices, mechanical rooms, and laundry rooms. The bar and seating area would also provide access to an outdoor patio with seating at the northeastern corner of the building. Two elevators would be located near the main entrance of the building on the northern side, and staircases would be located at the southwestern and southeastern corners of the building. The building would feature a grey and white concrete exterior with aluminum trim and ribbed fiber cement accent panels.

Parking and Site Access

Vehicles would access the site via two existing driveways along Balentine Drive and Mowry School Road, which lead to the existing access easement along the northern boundaries of the site. A porte cochere would be located in the northern portion of the proposed hotel building at the primary entrance, and the 96-space surface parking lot would primarily be located at the eastern portion of the site with smaller parking areas located at the southern portion of the site and wrapped around the northern and western portions of the site.

Landscaping

The project would include new landscaping around the site perimeter and new hotel building. Approximately 12 percent of the project site would be landscaped. These areas would include various shrubs, grasses, and groundcover, and new trees, including crape myrtle (*Lagerstroemia spp.)*, London plane tree (*Platanus acerifolia*), and red maple (*Acer rebrum*). The project would also involve installation of several bioretention planters, which would be located near the edges of the site and within the surface parking lot. The total area of bioretention planters and permeable areas would be approximately 15,909 square feet.

Construction

The project would require demolition of the existing building and grading of most of the site. Approximately 450 cubic yards of soil would be exported during grading and excavation. Altogether, construction (including demolition, grading and excavation, building construction, and architectural coating) would be completed in one phase and occur over approximately 18 months.

4 Consistency Analysis

4.1 Criterion (a)

The project would be consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations, as described in further detail below.

Consistency with General Plan

The project site is designated as Regional Commercial in the City of Newark General Plan (City of Newark 2013a). The General Plan characterizes the Regional Commercial designation as supporting "the largest and most complete shopping facilities in the city. The emphasis is on a broad array of goods and services, including department stores, retail shops, restaurants, entertainment facilities, and similar uses which draw patrons from throughout Newark and the surrounding region." In addition, allowed uses in the designation include hotels (City of Newark 2013b). The proposed project would involve construction of a new hotel building and would therefore be consistent with the uses intended for the Regional Commercial designation.

The City's General Plan identifies goals and policies to guide land use patterns to strategically accommodate future growth while preserving and enhancing the city as a whole. The proposed project's consistency with applicable City of Newark goals and policies is described in Table 2.

Table 2 General Plan Consistency

General Plan Goal or Policy	Proposed Project Consistency
Policy LU-2.1 Neighborhood Conservation. Protect single-family neighborhoods from substantial increases in density and new land uses which would adversely affect the character of the neighborhood.	**Consistent.** The proposed project would involve development of a hotel within the Regional Commercial General Plan land use designation, which allows for hotels. Surrounding development is primarily commercial and includes other existing hotels.
Policy LU-2.7 Design Guidelines. Maintain design guidelines and a design review process that applies to building and site design throughout the city.	**Consistent.** The proposed project would be subject to Design Review by the City of Newark Planning Commission.
GOAL LU-5 Identify, preserve, and maintain historic structures and sites to enhance Newark's sense of place and create living reminders of the city's heritage.	**Consistent.** As described in Section 4.6, *Historic Resources*, the existing building proposed to be demolished is not a historic resource.
Policy T-2.1 Promoting Bicycling and Walking. Promote bicycling and walking as viable modes of transportation for everyday trips as well as for recreation to increase the number of people of all ages, abilities, and means who bicycle and walk.	**Consistent.** As described in Section 3, *Project Description*, the project would involve operation of a new hotel in a commercial area and is within walking distance of several existing restaurants and stores. In addition, the project would include bicycle parking for hotel guests.
Action T-5.A Traffic Study Requirements. Require traffic studies for major new developments to determine projected impacts on the transportation system, and the measures required to maintain adopted levels of service (LOS).	**Consistent.** As described below in Section 4.4.1, *Traffic*, traffic generated by the proposed project would not cause an increase in vehicle miles traveled that would exceed applicable thresholds.

General Plan Goal or Policy	Proposed Project Consistency
Action EH-2.A Geotechnical Studies. At the discretion of the Director of Public Works, require detailed investigations of ground shaking, liquefaction, soil stability, and other geologic hazards as specific development projects are proposed. Such investigations shall be prepared by a qualified geologist or soils engineer, with appropriate mitigation measures identified and implemented.	**Consistent.** The project applicant has provided a geotechnical report that studies the project site and proposed construction. Given compliance with several design recommendations, the report concludes that the project would be feasible from a geotechnical standpoint. Prior to approval of building permits, the Department of Public Works would review the proposed plans to confirm the recommendations in the geotechnical report are followed.
GOAL EH-6 Maintain the peace and quiet of Newark neighborhoods and promote an environment where noise does not adversely affect sensitive land uses.	**Consistent.** As described in Section 4.4.2, *Noise*, the project would result in less than significant impacts related to noise during construction and operation.
Policy LU-7.3 Biological Resource Protection. Maintain, protect, and enhance the natural biological resources of the Southwest Newark Residential and Recreational Project Areas, particularly sensitive habitats and associated rare plants and animals, while integrating development and human activity. Disturbance of wetland and aquatic habitat should be avoided to the maximum extent feasible.	**Consistent.** As described in Section 4.3, *criterion (c),* the project would result in less than significant impacts to biological resources.
Action HW-1.E Restaurant Exhaust Systems. Require new restaurants located in mixed-use developments or adjacent to residential developments to install kitchen exhaust vents with filtration systems, re-route vents away from residential development, and use other accepted methods of odor control, in accordance with local building and fire codes.	**Consistent.** The proposed project would be required to comply with the current California Building Code and Fire Code.

Source: City of Newark 2013

Consistency with Zoning Ordinance

The project site is located within the Regional Commercial zoning district (RC), which allows a variety of commercial uses intended to support large-scale shopping facilities, including department stores, retail shops, restaurants, entertainment facilities, hotels, and corporate office buildings (City of Newark 2018). As a hotel development, the proposed project would be consistent with the permitted uses in the RC zoning district.

Consistency with selected applicable City of Newark Zoning Ordinance requirements for the RC zoning district is analyzed below and shown in Table 3.

Table 3 Zoning Ordinance Development Standards Consistency

	Zoning Ordinance Requirements	Proposed Project
Height	250 feet maximum	64 feet
Setbacks	Front: 0 feet minimum Rear: 0 feet minimum Side: 0 feet minimum	Front: 46 feet Rear: 38 feet Side: 142 feet
Landscaped Area	10 percent of lot size minimum	11.8 percent
Parking	112 (1 per guest room) minimum	96[1]

[1] Pursuant to Municipal Code Section 17.23.050, applicants may request a reduction of required parking subject to approval of a Minor Use Permit.

As shown above in Table 3, the proposed project would comply with applicable development standards in the municipal code except minimum parking spaces. The applicant has requested approval of a Minor Use Permit to allow a reduction in the number of required parking spaces.

The banquet rooms proposed within the hotel also require the approval of a Conditional Use Permit within the RC zoning district. Both use permits would be reviewed concurrently with the Design Review by the Planning Commission. Given approval of these permits, the project would be consistent with applicable zoning regulations.

4.2 Criterion (b)

The project site is within City of Newark limits, is not more than five acres, and is substantially surrounded by urban uses.

The project site is located on a 1.66-acre parcel within a developed urban neighborhood. As described under Section 2, *Project Site and Existing Conditions,* it is immediately surrounded by existing urban uses on all sides.

4.3 Criterion (c)

The project site has no value as habitat for endangered, rare, or threatened species.

As described in the biological resources analysis prepared by Rincon Consultants for the project site, the site is located within a highly developed urban area that lacks habitat that would be suitable for sensitive wildlife or plant species (see Appendix A). As discussed in Section 2, *Project Site and Existing Conditions*, the project site contains one building and is mostly paved with some ornamental landscaping. The ornamental landscaping does not provide suitable habitat for sensitive species due to its fragmented and small size, lack of native vegetation, and highly urban context with no connectivity to open space.

4.4 Criterion (d)

Approval of the project would not result in any significant effects relating to transportation, noise, air quality, or water quality.

The following discussion provides an analysis of the project's potential effects with respect to transportation, noise, air quality, and water quality.

4.4.1 Transportation

This section is based on the Traffic Impact Study Report prepared by TJKM in April 2022. The report is included in this report as Appendix B.

Vehicle Miles Traveled

Pursuant to Senate Bill 743, the *CEQA Guidelines* replaced congestion-based metrics, such as auto delay and level of service (LOS), with vehicle miles traveled (VMT) as the basis for determining significant impacts. As of July 1, 2020, agencies analyzing transportation impacts of projects under CEQA must utilize VMT instead of LOS. A VMT impact would be considered significant if implementation of the proposed project would cause the total VMT in the project area to increase beyond 15 percent below baseline conditions.

In terms of hotel employee vehicle trips, the Alameda County Transportation Commission VMT model (provided in Appendix B) determined the average VMT per employee in the South Planning Area, which includes the City of Newark and the project site, was 17.2 in 2020. Therefore, VMT impacts would be potentially significant if the project caused the average VMT per employee in the South Planning Area to exceed 14.6, which is 15 percent below the 17.2 VMT baseline (Appendix B).

TJKM reviewed the Alameda County Transportation Commission Mapping Tool to determine the average VMT per employee for the project area. The project site is located in Transportation Analysis Zone 935, which currently experiences a VMT per employee of 14.1. It can be assumed that the project would result in similar VMT per employee as surrounding land uses in its Transportation Analysis Zone; therefore, the project would result in 14.1 VMT per employee, which is below the threshold of 14.6 VMT per employee. Impacts related to hotel employee VMT would be less than significant.

In terms of hotel guest vehicle trips, TJKM determined that because the project is not a destination or resort-type hotel, the project would not substantially increase hotel guest VMT in the project region. Without the project, hotel guests would stay at other hotels in the region, possibly including one of 17 hotels that are within 4 miles of the project site. Based on information on file with the City of Newark, the average hotel occupancy rate in the City of Newark in Fiscal Year 2018-2019 (pre-pandemic) was 78 percent. Given the large supply of unoccupied hotel rooms within regional hotel markets (including the Project area), the VMT generated by hotel guests attributable to the proposed project would be unlikely to result in an increase in the number of visitors to the region, and therefore unlikely to result in a net increase in total VMT. Instead, it would result in a redistribution of existing VMT (Appendix B). Therefore, the project would not result in a substantial increase to existing hotel guest VMT, and impacts would be less than significant.

Trip Generation and Level of Service

In December 2019, California's Third District Court of Appeal ruled that under Senate Bill 743, automobile delay may no longer be treated as a significant impact in CEQA analysis (*Citizens for Positive Growth & Preservation v. City of Sacramento*). Nevertheless, this analysis and the Traffic Impact Study Report prepared for the project by TJKM provides a discussion of the project's effects on LOS for informational purposes, because they are relevant to consistency with local standards for the performance of the circulation system. This analysis is briefly summarized below and included fully in Appendix B.

As shown in Table 4 below, operation of the proposed project is expected to generate a net increase of 714 daily vehicle trips, including 62 AM peak hour trips and 37 PM peak hour trips.

Table 4 Proposed Project Trip Generation

Land Use	Weekday Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
		In	Out	Total	In	Out	Total
Proposed Hotel	1,104	37	25	62	40	39	79
Existing Restaurant	(390)	N/A	N/A	N/A	(28)	(14)	(42)
Net Change in Trips	**714**	**37**	**25**	**62**	**12**	**25**	**37**

Notes: () = subtraction of existing trips from trips generated by the proposed project
N/A = not applicable
Source: Appendix B

To analyze the project's traffic impacts, traffic conditions were studied at five intersections in the vicinity of the project site. Traffic operations at the studied intersections were described using LOS, which is a qualitative description of traffic operations from the vehicle driver perspective and consists of the delay experienced by the driver at the intersection. It ranges from LOS A, with no congestion and little delay, to LOS F, with excessive congestion and delays.

The City of Newark has developed guidelines and criteria for impacts to LOS. Based on City of Newark thresholds, a project would result in a significant adverse impact on traffic conditions at a signalized intersection if for either peak hour:

a) The level of service at the intersection degrades from an acceptable LOS C or better under background conditions to an unacceptable LOS D, E, or F under project conditions; or
b) The level of service at the intersection is an unacceptable LOS under background conditions and the addition of project trips causes the average delay at the intersection to increase by four (4) or more seconds.

Therefore, the proposed project would create a significant impact at a signalized intersection if it would cause the LOS levels to drop below LOS D.

As shown below in Table 5, all of the study intersections would continue to have acceptable conditions (LOS D or better) under operation of the project during the weekday AM and PM peak hours. Therefore, the addition of project traffic to the study intersections would not result in a significant impact according to the standards established by the City of Newark. Impacts related to roadway facilities and traffic would be less than significant.

Table 5 Intersection Level of Service under Existing Plus Project Conditions

Intersection	Control	Peak Hour[1]	Existing Conditions		Existing Plus Project Conditions		Acceptable Delay Exceeded?
			Delay[2]	LOS[3]	Delay	LOS[6]	
Mowry School Road/Balentine Drive	Signal	AM	11.8	B	11.8	B	No
		PM	9.3	A	9.3	A	No
Balentine Drive/Stevenson Boulevard	Signal	AM	20.6	C	20.6	C	No
		PM	36.8	D	36.8	D	No
Mowry School Road/Cedar Boulevard	Signal	AM	9.6	A	9.6	A	No
		PM	16.9	B	16.9	B	No
Cedar Boulevard/Balentine Drive	Signal	AM	28.2	C	28.2	C	No
		PM	12.5	B	12.5	B	No

Intersection	Control	Peak Hour[1]	Existing Conditions		Existing Plus Project Conditions		Acceptable Delay Exceeded?
			Delay[2]	LOS[3]	Delay	LOS[6]	
Cedar Boulevard/Stevenson Boulevard	Signal	AM	19.5	B	19.6	B	No
		PM	20.8	C	20.8	C	No

[1]AM – morning peak hour, PM – evening peak hour

[2]Delay – Whole intersection weighted average control delay expressed in seconds per vehicle

[3]LOS – Level of Service

Source: Appendix B

Site Access and Circulation

The project would involve a hotel use on a site designated for commercial uses, including hotels; the project would not introduce incompatible uses, including vehicles or equipment, to the site or the surrounding area. Project implementation would occur on an existing private property and would not alter the layout or design of existing streets and intersections. The project would utilize the two existing driveways at the project site along Balentine Drive and Mowry School Road, which lead to the existing access easement along the northern boundaries of the site. The project would provide adequate emergency access via these driveways, and the site plans for the proposed project demonstrate that these driveways and internal drive aisles would be of adequate width for emergency vehicles. In addition, the proposed project would be required to comply with all building, fire, and safety codes, and development plans would be subject to review and approval by the City's Public Works Department and Alameda County Fire Department. Required review by these departments would ensure the circulation system for the project site would provide adequate emergency access. In addition, the proposed project would not require permanent closures to roadways or changes to existing roadway configurations.

Conclusion

Based on the assessment of VMT, traffic impacts, and site access above, there would be no significant impacts related to transportation.

4.4.2 Noise

Noise Characteristics and Measurement

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz). One of the most frequently used noise metrics that considers duration as well as sound power level is the equivalent noise level (L_{eq}). The L_{eq} is defined as the steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual varying levels over a period of time (essentially, L_{eq} is the average sound level). The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used in the City of Newark General Plan is the community noise equivalent level (CNEL). The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies a 5 dBA penalty to noise occurring during evening hours (i.e., 7:00 p.m. to 10:00 p.m.) and a 10 dBA penalty is added to noise occurring during nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.). These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and nighttime periods.

Vibration Characteristics and Measurement

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of Hz. The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body starts from a low frequency of less than 1 Hz and goes to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (Federal Transit Administration [FTA] 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations diminish much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2013). When a building is impacted by vibration, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-foundation coupling may amplify the vibration level due to structural resonances of the floors and walls.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2020).

Caltrans has published applicable guidelines for vibration annoyance caused by transient and intermittent sources, as shown in in Table 6.

Table 6 Caltrans Criteria for Vibration Annoyance

Human Response	Maximum PPV (in/sec) Transient Sources[1]	Maximum PPV (in/sec) Continuous/Frequent Intermittent Sources[1]
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

[1] Caltrans defines transient sources as those that create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources can include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2020

Regulatory Setting

City of Newark General Plan

The City of Newark's General Plan (City of Newark 2013b) incorporates comprehensive goals, policies, and actions related to noise and acceptable noise levels. These policies address unnecessary, excessive, and annoying noise levels and sources, such as vehicles, railroad, aircrafts, construction, special sources (e.g., radios, musical instrument, animals) and stationary sources (e.g., heating and cooling systems, mechanical rooms). The following goals and policies are applicable to the proposed project and impacts related to noise:

GOAL EH-7 Ensure that new structures/uses are designed and constructed to preclude excessive, inappropriate, and undesirable noise effects.

Policy EH-7.3 Reducing Exposure to Operational Noise. In new residential and mixed-use developments, require that stationary equipment (such as air conditioning units and condensers) be placed in separate spaces, rooftops, or other areas such that noise impacts to interior living areas will be reduced. Similarly, potentially noisy common spaces, such as trash collection areas and loading zones, should be located away from residential units or other noise-sensitive spaces.

Policy EH-7.6 New Noise Sources. Require new developments that have the potential to create long-term noise increases to mitigate potential impact to off-site receptor properties.

Action EH-7.B Conditional Use Permits. Use the development review process, including conditional use permits, to limit activities which would generate high levels of noise during nighttime hours (i.e., from 7 PM to 7 AM).

Action EH-7.C Allowing Noise-Sensitive Uses Near Noise Sources. Use the development review process when evaluating zoning changes to consider potential noise impacts due to noise-sensitive uses being located near commercial uses, industrial uses, or other activities that typically generate excessive noise.

Action EH-7.D Vibration-Intensive Construction. Implement a standard operating procedure that requires the evaluation of vibration impacts for individual projects which use vibration-intensive construction activities, such as pile drivers, jack hammers, and vibratory rollers, near sensitive receptors. If construction-related vibration is determined to be perceptible (i.e., in excess of Federal Transit Administrations vibration annoyance criterion) at vibration-sensitive uses, then additional requirements, such as the use of less-vibration-intensive equipment or construction techniques, shall be implemented during construction.

City of Newark Zoning Ordinance

Section 17.24.100, Noise, of the Newark Municipal Code sets the City's standards for on-site operational noise and construction noise. As described in Section 17.24.100.A.2, Noise Restriction by Decibel, the operational noise limit for a commercial property such as the project site may not exceed 70 dBA outside of the property plane.

Section 17.24.100.3 of the Municipal Code sets standards for construction noise. This section prohibits construction activity between the hours of 7:00 PM and 7:00 AM on weekdays and Saturdays and between 6:00 PM to 10:00 AM on Sundays and holidays. In addition, the code section requires that no piece of equipment produce a noise level exceeding 83 dBA at a distance of 25 feet from the source and that the noise level at any point outside of the property plane not exceed 86 dBA.

Section 17.24.120, Vibration, of the Municipal Code, sets standards for vibration. The section prohibits vibration above the perception threshold of an individual at or beyond the property boundary of the source but does not provide a numeric threshold. Moreover, the section exempts vibrations from temporary construction, demolition, and vehicles that enter and leave the subject parcel (e.g., construction equipment, trains, trucks, etc.)

Existing Ambient Noise Levels and Sensitive Receivers

The primary source of noise in the vicinity of the project site is motor vehicle traffic, primarily generated from traffic on I-880, including automobiles, trucks, buses, and motorcycles. Additional sources of noise in the vicinity include noise and conversations from pedestrians and customers at the surrounding retail, commercial, and auto sales uses.

The City of Newark General Plan Environmental Hazards Element, adopted in December 2013, provides Noise Contour Maps that identify existing and future (2035) noise contours within the City. For both graphics, the project site is located within the 60 dBA CNEL noise contour, which runs parallel to I-880. The maps show that the noise level increases closer to major roadways, including I-880.

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Noise-sensitive receivers generally include single- and multi-family residences, hotels, motels, schools, libraries, places of worship, hospitals, and nursing homes. The predominant noise-sensitive land uses in the project vicinity are the existing residences located approximately 600 feet southwest from the site and the Doubletree Hilton hotel located approximately 150 feet northeast of the site, across Mowry School Road.

Construction Noise

Construction noise was estimated using the Roadway Construction Noise Model (RCNM) provided by the Federal Highway Administration (FHWA). RCNM predicts equivalent construction noise levels over time from the operation of certain equipment and usage rates for the equipment, based on empirical data and the application of acoustical propagation formulas. The construction equipment list provided by the project applicant was used in RCNM. Noise was modeled based on the project's anticipated construction equipment for each phase and distance to nearby receivers.

This analysis assumes that on average the center of construction activity would occur approximately 100 feet from the site's property lines because RCNM estimates equivalent noise levels over time, and construction equipment would not constantly operate at the edge of the property. In addition, equipment is typically dispersed in various areas of the site, with only a limited amount of equipment operating near a given location at a particular time. Therefore, this analysis of construction noise impacts is conservative.

Table 7 identifies the average expected noise levels at the property lines and at the closest sensitive receivers based on the conservatively assumed combined use of all construction equipment during each phase of construction.

Table 7 Estimated Noise Levels by Construction Phase

Construction Phase	Equipment	Estimated Noise (dBA L_{eq}) at 100 feet	Estimated Noise (dBA L_{eq}) at 150 feet
Demolition	Backhoe, compactor, excavator, truck, loader, tractor, trencher	79	75
Site Preparation	Backhoe, compactor, excavator, loader, scraper, roller, tractor, trencher	80	77
Grading	Backhoe, compactor, excavator, grader, truck, paving equipment, roller, scraper, loader, trencher	80	78
Building Construction	Backhoe, compactor, excavator, forklift, loader, trencher	77	74
Paving	Backhoe, compactor, paver, paving equipment, roller,	74	71
Architectural Coating	Air compressors	68	64

Source: Roadway Construction Noise Model. See Appendix C for equipment noise impact data sheets.

As shown in Table 7, construction noise could be as high as approximately 80 dBA L_{eq} at the edge of the project site, approximately 100 feet from the center of construction activity. Moreover, construction noise could be as high as 78 dBA L_{eq} at the nearest sensitive receivers, the hotel approximately 150 feet from the project site.

As described above the Newark Municipal Code limits the hours of construction to the less sensitive hours of the day (7:00 AM – 7:00 PM weekdays and Saturdays, 10:00 AM – 6:00 PM Sundays and holidays). Therefore, construction would not occur during normal sleeping hours for residents, which are the most sensitive time for exposure to noise. This section also states that construction noise shall not exceed 86 dBA at any point outside of the property plane. As shown in Table 7, it is anticipated that noise from construction of the proposed project would not exceed these limits. Therefore, impacts related to construction noise would be less than significant.

Operational Noise

On-site operational noise would be generated by heating, ventilation, and air conditioning (HVAC) equipment, delivery and trash trucks, increased traffic, parking activities, and use of the proposed outdoor areas (e.g., courtyard patio, roof deck). Each of these noise sources is discussed below.

Existing uses near the project site may periodically be subject to noises associated with operation of the proposed project, including noise that is typical of hotel development such as HVAC equipment and periodic delivery and trash hauling services. The primary mechanical equipment noise generator from the project would be HVAC units. The unit used in this analysis is a 16.7-ton Carrier 38AUD25 split system condenser, which is a typical unit used for hotel buildings. The manufacturer's noise data lists the unit as having a sound power level of 85 dBA (Carrier 2019). As the HVAC units would be located at a setback from the rooftop edge, the rooftop edge would provide a shielding affect by blocking the line-of-sight between the unit and the exterior use areas at ground level. This is conservatively assumed to result in a 5 dBA reduction at exterior use areas. In addition, with typical mechanical equipment rooftop shielding, blocking the line of sight from a noise source to a receiver will provide at least an additional 5-dBA reduction in source noise levels at the receiver (FHWA 2011). With the assumption of a distance of 50 feet from the HVAC unit to the property edge, this would result in HVAC noise levels of approximately 44 dBA, which would not exceed 70 dBA outside of the property plane, and impacts would be less than significant.

Other activities such as delivery and trash hauling would not substantially contribute to average ambient noise levels and would be comparable to similar activity of the existing use and surrounding uses. The project would involve the redevelopment of an infill site that currently contains a restaurant, which requires delivery and trash hauling services. Therefore, because delivery and trash hauling services already occur at the project site, these activities would not result in a substantial permanent increase in ambient noise levels, and impacts would be less than significant.

Noise sources associated with a surface parking lot would be typical of parking lots, including tire squealing, door slamming, car alarms, horns, and engine start-ups. The proposed project would include 96 parking stalls at the eastern portion of the project site. Vehicles entering and exiting the project site would generate noise that would be similar to existing surrounding land uses, including the hotel located directly east of the project site. Therefore, parking activities associated with the project would not result in a substantial permanent increase in ambient noise levels, and impacts would be less than significant.

According to the Traffic Study, the proposed project would generate approximately 714 net new vehicle trips as compared to existing uses (Appendix B). This increase in vehicle trips would incrementally increase traffic on area roadways including Balentine Drive and Mowry School Road, which would increase roadway noise at nearby commercial uses. Generally, a doubling of traffic (i.e., a 100 percent increase in traffic volume) would increase noise levels by approximately 3 dBA, which is the human level of perception for an increase in noise (FTA 2018). By contrast, modeling of traffic noise indicates that a 10 percent increase in traffic volume would raise traffic noise by approximately 0.4 dBA, a 20 percent increase would raise traffic noise by about 0.8 dBA, and a 30 percent increase would result in an approximately 1.1 dBA increase in traffic noise. As described in the Traffic Impact Study, to determine existing traffic volumes along area roadways, a traffic count was taken along Balentine Drive and Mowry School Road over a two-hour interval during AM peak hours (Appendix B). During a one-hour interval, 296 vehicles were counted. Because hourly traffic is equivalent to approximately 10 percent of daily traffic, the daily traffic volume was estimated at approximately 2,960 vehicles. Therefore, the 714 daily trips added by the project would constitute a 24 percent increase in traffic volume along Balentine Drive and Mowry School Road, which would result in a traffic noise increase of approximately 1.1 dBA. Such an increase would be imperceptible and would not result in a substantial permanent increase in ambient noise levels. Therefore, impacts related to traffic noise would be less than significant.

Vibration

Construction of the proposed project would intermittently generate vibration on and adjacent to the project site. Vibration-generating equipment may include bulldozers and loaded trucks to move materials and debris, and vibratory rollers for paving. It is assumed that pile drivers, which generate strong groundborne vibration, would not be used during construction. Vibration-generating equipment on the project site would be used as close as approximately 25 feet from adjacent properties and uses.

Unlike construction noise, vibration levels are not averaged over time to determine their impact. The most important factors are the maximum vibration level and the frequency of vibratory activity. Therefore, it is appropriate to estimate vibration levels at the nearest distance to sensitive receivers that equipment could be used, even though this equipment would typically be located farther from receivers. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors and the vibration level threshold for human perception is assessed at occupied structures (FTA 2018). Therefore, vibration impacts are assessed at the structure of an affected property. This analysis assumes that vibration-generating equipment could be located as close as 50 feet from uses adjacent to construction at the project site when accounting for setbacks. Table 8 estimates vibration levels from equipment at this distance.

Table 8 Vibration Levels for Construction Equipment at Noise-Sensitive Receivers

Equipment	PPV (in/sec PPV) 50 feet
Vibratory Roller	0.098
Large Bulldozer	0.042
Loaded Trucks	0.035
Jackhammer	0.017

Source: FTA 2018

As shown in Table 8, construction activity would generate vibration levels reaching an estimated 0.098 in/sec PPV at a distance of 50 feet, if vibratory rollers are used to pave asphalt. Vibration-generating equipment would be operated on a transient basis during construction.

A maximum vibration level of 0.098 in/sec PPV during the potential use of vibratory rollers would not exceed 0.25 in/sec PPV, Caltrans' recommended criterion for distinctly perceptible vibration from transient sources. Construction activity that generates loud noises (and therefore vibration) also would be limited to daytime hours on weekdays and Saturdays, which would prevent the exposure of sensitive receivers to vibration during evening and nighttime hours. As a result, it would not cause substantial annoyance to people of normal sensitivity. In addition, the vibration level would not exceed the Caltrans' recommended criterion of 0.5 in/sec PPV for potential damage of historic and old buildings from transient vibration sources. Therefore, the impacts of vibration on people and structures would be less than significant.

As a hotel development, the proposed project would not generate significant stationary sources of vibration after construction, such as manufacturing or heavy equipment operations. Operational vibration in the project vicinity would be generated by additional vehicular travel on local roadways; however, any increase in traffic-related vibration levels would not be perceptible because, as described in Section 4.4.1, *Transportation*, operation of the proposed project would not substantially increase existing traffic volumes in the area. Therefore, operational vibration impacts would be less than significant.

Conclusion

The proposed project is not expected to result in a significant long-term increase in traffic noise levels, and temporary construction noise would be less than significant, based on compliance with the City's time restrictions on construction activities, contained in the City's Municipal Code. The project's operational noise would be similar to noise from other nearby land uses, including noise from nearby hotels with similar operational activities, and would be less than significant in the context of the existing noise in the surrounding area. Therefore, noise-related impacts resulting from implementation of the proposed project would be less than significant.

4.4.3 Air Quality

A significant adverse air quality impact may occur when a project individually or cumulatively interferes with progress toward the attainment of the ozone standard by releasing emissions that equal or exceed the established long-term quantitative thresholds for pollutants or causes an exceedance of a state or federal ambient air quality standard for any criteria pollutant. Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere. Commonly found primary criteria pollutants include reactive organic gases (ROG), nitric oxides (NO_x), carbon monoxide (CO), and particulate matter (PM_{10} and $PM_{2.5}$). PM_{10} is particulate matter with diameters of up to 10 microns, particulate matter with diameters of up to 2.5 microns. Because the project site is located within the San Francisco Bay Area Air Basin (the Basin) and falls under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), this air quality analysis conforms to the methodologies recommended in BAAQMD's 2017 CEQA Air Quality Guidelines (BAAQMD 2017).

As described in detail in the Air Quality Study prepared by Rincon Consultants (Appendix D), project construction and operation would result in the generation of criteria air pollutants, which would affect local air quality. However, construction-related emissions of criteria air pollutants would not exceed BAAQMD thresholds, and the project would fall below the BAAQMD operational screening size. Therefore, the 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. In addition, the project would not expose sensitive receptors to substantial concentrations of CO, Toxic Air Contaminants (TAC), or objectionable odors. Finally, the project would not conflict with or obstruct implementation of the 2017 Clean Air Plan, the most recently adopted air quality plan for the Basin (Appendix D). Given the analysis and conclusions in the Air Quality Study, the project would not result in any significant effects relating to air quality. Air quality modeling results are shown in Appendix E.

Conclusion

The proposed project is not expected to generate construction or operational emissions that would exceed BAAQMD thresholds. The project would not expose sensitive receptors to substantial pollutant concentrations and would not result in emissions adversely affecting a substantial number of people. Therefore, air quality impacts resulting from implementation of the proposed project would be less than significant.

4.4.4 Water Quality

Construction

Project construction could cause soil erosion from exposed soil, an accidental release of hazardous materials used for equipment such as vehicle fuels and lubricant, or temporary siltation from storm water runoff. Soil disturbance would occur during excavation, demolition, and grading. However, construction activities would be required to comply with state and local water quality regulations designed to control erosion and protect water quality during construction. This includes compliance with Newark Municipal Code Chapter 8.36, Stormwater Management and Discharge Control, which requires that Best Management Practices (BMPs), including those adopted by the State Water Resources Control Board (SWRCB), be implemented to minimize non-stormwater discharges during construction. Construction BMPs would include scheduling inlet protection, silt fencing, fiber rolls, stabilized construction entrances, stockpile management, solid waste management, and concrete waste management. Implementation of these BMPs would prevent or minimize environmental impacts and ensure that discharges during construction of the proposed project would not cause or contribute to the degradation of water quality in receiving waters. The proposed project therefore would not result in the degradation of water quality in receiving waters; construction-related water quality impacts would be less than significant.

Compliance with local and State regulatory requirements and implementation of construction BMPs would minimize discharges during the construction phase of the proposed project. The project would therefore not result in the degradation of water quality in receiving waters; construction-related water quality impacts would be less than significant.

Operation

The City of Newark is responsible for enforcing the National Pollutant Discharge Elimination System (NPDES) Permit issued by the California Regional Water Quality Control Board, San Francisco Region (SFBRWQCB). Provisions specified in the NPDES Permit that affect construction projects generally include but are not limited to Provision C.3 (New Development and Redevelopment), Provision C.6 (Construction Site Control), and Provision C.15 (Exempted and Conditionally Exempted Discharges). The project would be required to comply with these provisions, which are described in further detail below:

- **Provision C.3** requires that Low Impact Development (LID) techniques be utilized to employ appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects; to address stormwater runoff pollutant discharges; and to prevent increases in runoff flows from new development and redevelopment projects by mimicking a site's predevelopment hydrology. This is to be accomplished by employing principles such as minimizing disturbed areas and imperviousness, and preserving and recreating natural landscape features, in order to "create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product" (SFBRWQCB 2015). The project would be required to enter into an Operation and Maintenance agreement with the City, which would ensure the effective long-term avoidance of significant adverse impacts associated with water quality degradation.
- **Provision C.6** requires implementation of a construction site inspection and control program at all construction sites and an Enforcement Response Plan to prevent construction-related discharges of pollutants into storm drains. Inspections confirm implementation of appropriate

and effective erosion and other BMPs by construction site operators/developers, and Permittee reporting is used to confirm and demonstrate the effectiveness of its inspections and enforcement activities to prevent polluted construction site discharges into storm drains.

- **Provision C.15** exempts specified unpolluted non-stormwater discharges and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. In order for non-stormwater discharges to be conditionally exempted, the Permittees must identify appropriate BMPs, monitor the non-stormwater discharges where necessary, and ensure implementation of effective control measures to eliminate adverse impacts to waters of the state consistent with the discharge prohibitions of the Order.

Compliance with the applicable state and local requirements described above would ensure that operation of the project would reduce the risk of water contamination to the maximum extent practicable. The project would employ LID techniques, including installation of bioretention treatment basins throughout the site, which would increase infiltration and water treatment. Therefore, operation of the project would not violate water quality standards or waste discharge requirements or substantially degrade water quality. Impacts would be less than significant.

Conclusion

The proposed project would be required to comply with the current municipal NPDES permit LID requirements. Since the project would be in compliance with BMPs during construction and permanent LID measures for ongoing operation, the impacts related to water quality would be less than significant.

4.5 Criterion (e)

The site can be adequately served by all required utilities and public services.

The project would be located in an existing highly urban area served by existing public utilities and services. A substantial increase in demand for services or utilities would not be anticipated with implementation of the proposed project. The Alameda County Water District provides water service, the Union Sanitary District provides sewer service, and Republic Services provides solid waste collection services to the existing commercial buildings within and surrounding the project site and would continue to provide these services to the proposed project. Other services, including gas and electricity, would also continue to be provided to the proposed project by existing service providers. Thus, the project meets this criterion for exemption.

4.6 Exceptions to the Exemption

The applicability of all CEs is qualified by the exceptions listed in CEQA Guidelines Section 15300.2(a) through (f). In the discussion below, each exception (in *italics*) is followed by an explanation of why the exception would not apply to the project.

15300.2(a) ***Location****. Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located – a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply in all instances, except where the project may impact an* *environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.*

The City of Newark proposes to adopt a Class 32 CE for the proposed project. Further, as discussed under 4.3, Criterion (c), the site is located within a highly developed urban area that lacks habitat that would be suitable for sensitive wildlife or plant species. As discussed in the following analysis, the project site also does not contain hazardous materials and is not located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code. Therefore, this exception to a CE would not apply to the proposed project.

15300.2(b) ***Cumulative Impact****. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant*.

The project would not result in significant environmental impacts, and there are no other successive projects of the same type or scale planned by the City. There are no reasonably foreseeable future projects in Newark that would result in significant cumulative impacts in combination with the proposed project. Therefore, no significant cumulative impacts would result from successive projects in the same place over time. This exception to a CE would not apply to the proposed project.

15300.2(c) ***Significant Effect****. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.*

The circumstances of the proposed project, which would result in the construction and operation of a hotel, parking, and landscaped areas, are not considered unusual because: (1) the project site is already developed with a commercial structure, parking, and landscaped areas; and (2) the proposed project would be consistent with existing land uses in the surrounding area, including three hotels located within 0.25-mile of the project site. Further, as described above in Sections 4.1 through 4.5, the proposed project would not result in a significant impact related to transportation, noise, air quality, water quality, utilities, and public services. Therefore, no unusual circumstances exist and this exception to a CE would not apply to the proposed project.***15300.2(d)*** ***Scenic Highways****. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.*

There are no officially designated state scenic highways or highways eligible for designation in the City of Newark. The nearest state scenic highway is I-680, which is eligible for designation and is located approximately 2.5 miles east of the project site (Caltrans 2018). Due to distance and intervening structures, the project site is not visible from I-680. Therefore, the proposed project would not damage scenic resources within a highway officially designated as a state scenic highway. This exception to a CE would not apply to the proposed project.

15300.2(e) ***Hazardous Waste Sites****. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.*

A search of the Department of Toxic Substances Control EnviroStor database and the California State Water Resources Control Board GeoTracker database demonstrated that the project site is not located on a hazardous materials site. The search revealed four possible hazardous materials sites within 0.25-mile of the project site; however, the Department of Toxic Substances Control, the State Water Resources Control Board, and/or other regulating agencies have determined that no further action is needed and the cases located at these sites are closed (Department of Toxic Substances Control 2022; State Water Resources Control Board 2022). Therefore, the project site is not located on or within 0.25-mile of a site included on lists compiled pursuant to Section 65962.5 of California Government Code. This exception to a CE would not apply to the proposed project.

15300.2(f) ***Historical Resources****. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.*

As described in the Cultural Resources Assessment prepared by Rincon Consultants, included as Appendix F, the existing one-story commercial building proposed to be demolished is at most 39 years of age, and as such, does not meet the 50-year threshold typically necessary to qualify as a historical resource under CEQA. In addition, Rincon Consultants performed a records search of the California Historical Resources Information Center (CHRIS) at the Northwest Information Center (NWIC) and a Sacred Lands File (SLF) search of the Native American Heritage Council (NAHC) in order to identify cultural resources in and in close proximity to the project site. The CHRIS records search and a SLF search did not identify any cultural resources on or proximate to the project site. Therefore, the proposed project does not have the potential to cause a substantial adverse change to the significance of a historical resource. This exception to a CE would not apply to the proposed project.

Conclusion

Based on the analysis above, none of the exceptions to a CE would apply to the proposed project. Therefore, the proposed project is eligible for a Class 32 CE.

5 Summary

Based on this analysis, the proposed 39888 Balentine Drive Project meets all criteria for a Class 32 Categorical Exemption pursuant to Section 15332 of the *CEQA Guidelines*.

6 References

Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act: Air Quality Guidelines. San Francisco, CA. May 2017. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en (accessed June 2022).

California Department of Toxic Substances Control. 2022. EnviroStor Database. https://www.envirostor.dtsc.ca.gov/public/map/?global_id=60002757 (accessed June 2022).

California Department of Transportation (Caltrans). 2018. California State Scenic Highway System Map. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa (accessed June 2022).

______. 2020. Transportation and Construction Vibration Guidance Manual. April 2020. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf (accessed June 2022).

Carrier. 2019. 38AUZ/D 50Hz Commercial Split Systems Air Conditioning Condensing Units 18.3 kW to 59.2 kW Product Data. https://www.carrier.com/commercial/en/au/products/commercial-products/condensing-units/38auz/ (accessed June 2022).

Crocker, Malcolm J. Crocker (Editor). 2007. Handbook of Noise and Vibration Control Book, ISBN: 978-0-471-39599-7, Wiley-VCH, October 2007.

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment*. November. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed June 2022).

Newark, City of. 2013a. Newark California General Plan Land Use Map. https://www.newark.org/home/showpublisheddocument/70/636502245493470000 (accessed June 2022).

______. 2013b. Newark California General Plan. https://www.newark.org/home/showpublisheddocument?id=76 (accessed June 2022).

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2015. San Francisco Bay Region. Municipal Regional Stormwater NPDES Permit No. CAS612008, Order No. R-2-2015-0049. Adopted November 19, 2015.

State Water Resources Control Board. 2022. GeoTracker Database. https://geotracker.waterboards.ca.gov/map/?global_id=SL0600120602# (accessed June 2022).

List of Preparers

Rincon Consultants, Inc. prepared this Categorical Exemption Report under contract to the City of Newark. Persons involved in data gathering analysis, project management, and quality control are listed below.

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Appendix A

Biological Resources Analysis

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July 1, 2022
Project No: 20-10103

Carmelisa Lopez, Senior Planner
City of Newark
37101 Newark Boulevard
Newark, California 94560
Via email: carmelisa.lopez@newark.org

Subject: **Biological Resources Assessment for 39888 Balentine Drive Hotel Project, Newark, Alameda County, California**

Dear Ms. Lopez:

Following are the results of the biological assessment for the subject property, located at 39888 Ballentine Drive in Newark, California.

Environmental Setting:

The site is located on the Niles 7.5-minute USGS topographic quadrangle in Section 5 at Township 5 South, Range 1 West. Elevation at the site ranges from approximately 29 to 34 feet above mean sea level. The property is currently the site of Nijo Castle Japanese Restaurant and its associated parking lot. The site is mostly paved or built, with landscaping in a few parking strips and surrounding the restaurant building. The site is surrounded by commercial development and Interstate 880 is approximately 0.10 mile to the northeast.

Methods:

Prior to conducting a reconnaissance site visit, a list of special-status species with potential to occur in the region was compiled through review of agency databases and a familiarity with the region. The databases reviewed were:

- California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CDFW 2021) for Niles and 8-surrounding quadrangles;
- California Native Plant Society's (CNPS) Rare Plant Inventory (CNPS 2021) 9 quadrangle search; and,
- U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (USFWS 2021).

A reconnaissance site visit was conducted on January 21, 2021. The day was mostly sunny, approximately 61 degrees Fahrenheit with a 5 mile per hour breeze. The site was walked on foot, photographs were taken from each corner of the property as well as other views of the landscaping, building, and surrounding areas.

Results:

The site is entirely developed or landscaped. There is a large row of red ironbark (*Eucalyptus sideroxylon*) in the parking lot median strip along the northeast property boundary and several large Mexican ash (*Fraxinus uhdei*) street trees on the southeast and southwest boundaries. A variety of small to medium trees and shrubs are planted in the interior parking medians strips. The building is surrounded by more small to medium trees, tall and low hedges, and numerous ornamental perennials and some annuals. Table 1 is a list of plant species observed at the site.

The building is occupied and maintained. All exterior openings were sealed or screened, and there was no sign of staining, excrement, potential nesting material, or other evidence of occupation by wildlife around the building. One old unoccupied passerine bird nest was observed in a cherry (*Prunus* sp.) tree between the building and parking lot. There is an ornamental pond and fountain by the front entrance to the restaurant that held no fish at the time of the survey. Wildlife species observed included American crow (*Corvus brachyrhynchos*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus psaltria*), Allen's hummingbird (*Calypte anna*), yellow-rumped warbler (*Setophaga coronate*), and seagull (*Larus* sp.).

There were 37 plant species (Table 2) and 57 wildlife species (Table 3) with potential to occur in the region. There is no habitat present to support any special-status plant species. All of the special-status wildlife species were eliminated from having potential to occur on site due to lack of required habitats such as salt marsh or vernal pools, lack of microhabitat requirements such as nesting sites, nearby food sources, or sandy or gravelly soil, or because the site is outside the known range of the species. The ornamental landscape habitat present on site could support nesting birds protected under the Migratory Bird Treaty Act.

There were no regulated wetlands and waters on site, no riparian vegetation, and no connectivity from the site to wildlife corridors or open space. Removal of street trees would require a permit from the City of Newark Public Works Director pursuant to the Newark Municipal Code Chapter 12.08 (Newark 2021).

Recommendations

Because the site has the potential to support nesting raptors and birds protected under the Migratory Bird Treaty Act, it is recommended that construction activity be initiated prior to the start of the nesting bird season, considered to be February 1 through August 31. If any tree removal or vegetation clearing activities must occur during the nesting bird season, a pre-construction survey should be conducted by a qualified biologist within 14 days of the start of construction activities, including staging and mobilization.

Sincerely,
Kristi Asmus, Senior Biologist

kasmus@rinconconsultants.com

Attachments

References

Table 1

Table 2

Table 3

References

California Department of Fish and Wildlife. 2021. California Natural Diversity Database, Rarefind 5. Accessed January 2021.

California Native Plant Society. 2021. Inventory of Rare and Endangered Plants of California. Online edition, v8-03 0.39. Available: http://www.rareplants.cnps.org Accessed January 2021.

CDFW see California Department of Fish and Wildlife

Newark. 2021. Newark, California Municipal Code. Available: https://library.municode.com/ca/newark/codes/code_of_ordinances?nodeId=NECAMUCO Accessed: January 2021.

CNPS *see* California Native Plant Society

United States Fish and Wildlife Service. 2021. Information for Planning and Consultation. The Environmental Conservation Online System. Available: https://ecos.fws.gov/ipac/ Accessed January 2021.

USFWS *see* United States Fish and Wildlife Service

Table 1 List of Plant Species Observed

Scientific Name	Common Name
Fraxinus uhdei	Mexican ash
Nandina domestica	heavenly bamboo
Rosmarinus officinalis	rosemary
Pinus thunbergiana	Japanese black pine
Cuphea hyssopifolia	false heather
Tulbaghia violacea	society garlic
Escallonia rubra	red claws
Phyllostachys aurea	golden bamboo
Vitex agnus-castus	chaste tree
Lagerstroemia indica	crape myrtle
Prunus serrulata	Japanese flowering cherry
Washingtonia filifera	California fan palm
Punica granatum	pomegranate
Hemerocallis sp.	daylily
Hedera helix	English ivy
Citrus limon	lemon
Eucalyptus sideroxylon	red ironbark
Pinus mugo	mugo pine
Ficus edulis	edible fig
Morus alba	white mulberry
Eriobotrya japonica	loquat
Prunus persica	peach
Ligustrum lucidum	glossy privet
Citrus japonica	kumquat
Acer palmatum	Japanese maple
Diospyros kaki	Japanese persimmon
Pittosporum tenuifolium	Tawhiwhi
Rosa hybrida	hybrid rose
Euonymus japonicus	euonymus
Hibiscus rosa-sinensis	Chinese hibiscus
Juniperus chinensis	Chinese juniper
Chrysanthemum sp.	chrysanthemum
Pittosporum tobira	mock orange

Pistacia chinensis	Chinese pistache
Cotoneaster glaucophyllus	large-leaved cotoneaster
Quercus ilex	holly oak
Camellia japonica	Japanese camellia
Prunus pendula	weeping cherry
Lantana montevidensis	lantana
Salvia microphylla	little-leaf salvia
Melissa officinalis	lemon balm
Gardenia jasminoides	gardenia
Pinus densiflora	Japanese red pine
Pellargonium sp.	geranium
Carpobrotus edulis	Hottentot-fig
Aeonium arboreum	aeonium
Cotoneaster horizontalis	cotoneaster
Melaleuca viminalis	weeping bottle brush
Iris germanica	bearded iris

Source: Rincon 2021

Table 2 List of Special-Status Plant Species Known to Occur in the Region xxx

Scientific Name	Common Name	Status[1] FESA/CESA/CRPR
Amsinckia lunaris	bent-flowered fiddleneck	-- / -- / 1B.2
Astragalus tener var. tener	alkali milk-vetch	-- / -- / 1B.2
Atriplex depressa	brittlescale	-- / -- / 1B.2
Atriplex minuscula	lesser saltscale	-- / -- / 1B.1
Balsamorhiza macrolepis	big-scale balsamroot	-- / -- / 1B.2
Campanula exigua	chaparral harebell	-- / -- / 1B.2
Centromadia parryi ssp. congdonii	Congdon's tarplant	-- / -- / 1B.1
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	-- / -- / 1B.2
Chloropyron palmatum	palmate-bracted bird's-beak	E / E / 1B.1
Chorizanthe robusta var. robusta	robust spineflower	E / -- / 1B.1
Delphinium californicum ssp. interius	Hospital Canyon larkspur	-- / -- / 1B.2
Dirca occidentalis	western leatherwood	-- / -- / 1B.2
Eryngium aristulatum var. hooveri	Hoover's button-celery	-- / -- / 1B.1
Eryngium jepsonii	Jepson's coyote thistle	-- / -- / 1B.2
Extriplex joaquinana	San Joaquin spearscale	-- / -- / 1B.2
Fritillaria liliacea	fragrant fritillary	-- / -- / 1B.2
Helianthella castanea	Diablo helianthella	-- / -- / 1B.2
Hoita strobilinia	Loma Prieta hoita	-- / -- / 1B.1
Holocarpha macradenia	Santa Cruz tarplant	T / E / 1B.1
Lasthenia conjugens	Contra Costa goldfields	E / -- / 1B.1
Lessingia hololeuca	woolly-headed lessingia	-- / -- / 3
Malacothamnus arcuatus	arcuate bush-mallow	-- / -- / 1B.2
Malacothamnus hallii	Hall's bush-mallow	-- / -- / 1B.2
Monardella antonina ssp. antonina	San Antonio Hills monardella	-- / -- / 3
Monolopia gracilens	woodland woollythreads	-- / -- / 1B.2
Navarretia paradoxiclara	Patterson's navarretia	-- / -- / 1B.3
Navarretia prostrata	prostrate vernal pool navarretia	-- / -- / 1B.1
Plagiobothrys glaber	hairless popcornflower	-- / -- / 1A
Polemonium carneum	Oregon polemonium	-- / -- / 2B.2
Puccinellia simplex	California alkali grass	-- / -- / 1B.2
Senecio aphanactis	chaparral ragwort	-- / -- / 2B.2
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	-- / -- / 1B.2
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower	-- / -- / 1B.2

Stuckenia filiformis ssp. alpina	slender-leaved pondweed	-- / -- / 2B.2
Suaeda californica	California seablite	E / -- / 1B.1
Trifolium hydrophilum	saline clover	-- / -- / 1B.2
Tropidocarpum capparideum	caper-fruited tropidocarpum	-- / -- / 1B.1

[1]Status:

F/C ESA = Federal/California Endangered Species Act	E = Endangered T = Threatened
CRPR = California Rare Plant Rank	1A = Presumed extirpated in California and rare or extinct elsewhere 1B = Rare, threatened, or endangered in California and elsewhere 2B = Plants are rare, threatened, or endangered in California but more common elsewhere 3 = Review List – Plants about which more information is needed x.1 = Seriously threatened (over 80% of occurrences threatened) x.2 = Moderately threatened (20-80% of occurrences threatened) x.3 = Not very threatened (less than 20% of occurrences threatened)

Source: CDFW 2021, CNPS 2021, USFWS 2021. Compiled by Rincon 2021

Table 3 List of Special-Status Wildlife Species Known to Occur in the Region

Common Name	Scientific Name	Status[1] (FESA/CESA/CDFW)
Invertebrates		
Bay checkerspot butterfly	*Euphydryas editha bayensis*	T / -- / --
California linderiella	*Linderiella occidentalis*	-- / -- / --
Conservancy fairy shrimp	*Branchinecta conservatio*	E / -- / --
Crotch bumble bee	*Bombus crotchii*	-- / C E / --
Lum's micro-blind harvestman	*Microcina lumi*	-- / -- / --
mimic tryonia (=California brackishwater snail)	*Tryonia imitator*	-- / -- / --
monarch - California overwintering	*Danaus plexippus pop. 1*	-- / -- / --
obscure bumble bee	*Bombus caliginosus*	-- / -- / --
San Bruno elfin butterfly	*Callophrys mossii bayensis*	E / -- / --
vernal pool fairy shrimp	*Branchinecta lynchi*	T / -- / --
vernal pool tadpole shrimp	*Lepidurus packardi*	E / -- / --
western bumble bee	*Bombus occidentalis*	-- / C E / --
western ridged mussel	*Gonidea angulata*	-- / -- / --
Fish		
Delta smelt	*Hypomesus transpacificus*	T / E / --
longfin smelt	*Spirinchus thaleichthys*	C / T / --
steelhead - central California coast DPS	*Oncorhynchus mykiss irideus pop. 8*	T / -- / --
Amphibians		
California red-legged frog	*Rana draytonii*	T / -- / SSC
California tiger salamander	*Ambystoma californiense*	T / T / WL
foothill yellow-legged frog	*Rana boylii*	-- / E / SSC
Reptiles		
Alameda whipsnake	*Masticophis lateralis euryxanthus*	T / T / --
Northern California legless lizard	*Anniella pulchra*	-- / -- / SSC
western pond turtle	*Emys marmorata*	-- / -- / SSC
Birds		
Alameda song sparrow	*Melospiza melodia pusillula*	-- / -- / SSC
American peregrine falcon	*Falco peregrinus anatum*	-- / -- / FP
bank swallow	*Riparia riparia*	-- / T / --
black skimmer	*Rynchops niger*	-- / -- / SSC
burrowing owl	*Athene cunicularia*	-- / -- / SSC

Common Name	Scientific Name	Status[1] (FESA/CESA/CDFW)
California black rail	*Laterallus jamaicensis coturniculus*	-- / T / FP
California horned lark	*Eremophila alpestris actia*	-- / -- / WL
California least tern	*Sternula antillarum browni*	E / E / FP
California Ridgway's rail	*Rallus obsoletus obsoletus*	E / E / FP
Cooper's hawk	*Accipiter cooperii*	-- / -- / WL
ferruginous hawk	*Buteo regalis*	-- / -- / WL
golden eagle	*Aquila chrysaetos*	-- / -- / FP
great blue heron	*Ardea herodias*	-- / -- / --
northern harrier	*Circus hudsonius*	-- / -- / SSC
prairie falcon	*Falco mexicanus*	-- / -- / WL
saltmarsh common yellowthroat	*Geothlypis trichas sinuosa*	-- / -- / SSC
sharp-shinned hawk	*Accipiter striatus*	-- / -- / WL
snowy egret	*Egretta thula*	-- / -- / --
tricolored blackbird	*Agelaius tricolor*	-- / T / SSC
western snowy plover	*Charadrius nivosus nivosus*	T / -- / SSC
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	T / E / --
white-tailed kite	*Elanus leucurus*	-- / -- / FP
yellow rail	*Coturnicops noveboracensis*	-- / -- / SSC
yellow warbler	*Setophaga petechia*	-- / -- / SSC
Mammals		
American badger	*Taxidea taxus*	-- / -- / SSC
Berkeley kangaroo rat	*Dipodomys heermanni berkeleyensis*	-- / -- / --
hoary bat	*Lasiurus cinereus*	-- / -- / --
pallid bat	*Antrozous pallidus*	-- / -- / SSC
salt-marsh harvest mouse	*Reithrodontomys raviventris*	E / E / FP
salt-marsh wandering shrew	*Sorex vagrans halicoetes*	-- / -- / SSC
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens*	-- / -- / SSC
San Joaquin kit fox	*Vulpes macrotis mutica*	E / T / --
Townsend's big-eared bat	*Corynorhinus townsendii*	-- / -- / SSC
western mastiff bat	*Eumops perotis californicus*	-- / -- / SSC
Yuma myotis	*Myotis yumanensis*	-- / -- / --

[1]Status:
FESA = Federal Endangered Species Act
CESA = California Endangered Species Act

E= Endangered
T=Threatened
C=Candidate

Common Name	Scientific Name	Status[1] (FESA/CESA/CDFW)
California Department of Wildlife	FP = Fully Protected SSC = Species of Special Concern WL = Watch List	
Source: CDFW 2021, USFWS 2021, Compiled by Rincon 2021		

Appendix B

Traffic Impact Study Report

Draft Traffic Impact Study Report

39888 Balentine Drive

City of Newark, California

September 14, 2022

TJKM

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EXECUTIVE SUMMARY

This report summarizes the results of the Traffic Impact Analysis (TIA) conducted for the proposed hotel development, Hyatt House, located at 39888 Balentine Drive in City of Newark, California. The project proposes to replace the existing restaurant and construct a five-story hotel with 132 rooms. The purpose of this report is to provide summaries of traffic impacts to the surrounding transportation system.

The report also includes evaluations and recommendations concerning project site access and on-site circulation for vehicles, bicycles, and pedestrians, evaluation of on-site vehicle parking supply, garbage/trash facilities, queuing analysis at signalized study intersections, parking analysis and travel demand management measures (TDM).

To evaluate the impacts on the transportation infrastructure due to the addition of traffic from the proposed project, five study intersections are evaluated during the weekday a.m. peak hour and the p.m. peak hour under two study scenarios. The study intersections were evaluated under No Project and Plus Project scenarios for Existing Conditions.

Project Trip Generation

The proposed hotel development project is expected to generate 714 additional daily trips than existing development, of which 62 trips are generated during the a.m. peak hour and 37 trips are generated during the p.m. peak hour.

Existing Conditions

Under this scenario, five of the study intersections operate at an acceptable LOS D or better during both a.m. and p.m. peak hours.

Existing plus Project Conditions

Under this scenario, all of the study intersections operating at acceptable LOS D or better under Existing plus Project Conditions. Based on the City of Newark thresholds impact criteria, the project is expected to have less-than-significant impacts at all the study intersections under Existing plus Project Conditions.

Vehicle Miles Traveled (VMT)

VMT was reviewed and resulted to have a less than significant impact.

Site Access and On-Site Circulation

Access to the proposed project would be via full access driveway on Balentine Drive and Mowry School Road. Bicycle and pedestrian access are acceptable, including sidewalks, signalized pedestrian crossings, and bicycle lanes, leading to the project site. Site access and circulation are **adequate**.

Parking

The project site plan (dated September 8, 2022) shows a supply of 96 parking stalls, including six accessible stalls. Project also provides six short-term bicycle parking stalls and two long-term bicycle parking stalls. The City of Newark Municipal Code (Section 17.23.040/Table 17.23.040) requires one space for each guest room or every two beds, whichever is greater. Based on this, the project is required to provide 132 parking stalls.

This report provides a thorough review of parking demand, surveys, and hotel occupancy trends, which will reflect a lower than actual parking required.

Queuing and Driveway Analysis

The proposed project does not create a significant impact to the expected left-turn or right-turn queues at the study intersections. The project driveways are expected to operate at an acceptable LOS and the 95th percentile queueing at the outbound approach of the project driveways is expected to be minimal.

Pedestrian, Bicycle and Transit Impacts

The proposed project does not conflict with existing and planned pedestrian or bicycle facilities, and will add very few trips to existing transit facilities, which the existing transit capacity can accommodate. Therefore, the impact to pedestrian, bicycle, and transit facilities is **less-than-significant**.

Transportation Demand Management Plan

The Transportation Demand Management Plan will reduce the number of trips to the project site for hotel visitors and employees. Additionally, the measures will also meet the needs of the recommended parking reduction.

1.0 INTRODUCTION

This report summarizes the results of the Traffic Impact Analysis (TIA) conducted for the proposed hotel development at 39888 Balentine Drive in the City of Newark, California. Proposed development located at the north quadrant of the intersection of Balentine Drive/Mowry School Road in the City of Newark. The project proposes to replace an existing restaurant of 9,953 square foot with a five-story hotel with 132 rooms. To assess impacts on the transportation infrastructure due to additional traffic from the proposed project, evaluation of study intersections is in accordance with the standards set forth by the LOS policies of the City of Newark.

The project site is located north of Balentine Drive as shown in **Figure 1**. Currently, a 150 seats quality restaurant occupy the project site. The proposed hotel will have an attractive lobby, exercise room, breakfast area, ballrooms, outdoor patio, and an indoor spa. The proposed hotel is for corporations and other companies in the area. It will also serve Fremont and Newark visitors and the local community. Site access will be provided via full access driveway on Balentine Drive and Mowry School Road.

1.1 Study Intersections and Scenarios

TJKM evaluated traffic conditions at five study intersections during the a.m. and p.m. peak hours for a typical weekday. The study intersections were approved by the City of Newark staff. The peak periods observed were between 7:00-9:00 a.m. and 4:00-6:00 p.m. The study intersections and associated traffic controls are as follows:

1. Mowry School Road/Balentine Drive (Signal)
2. Balentine Drive/Stevenson Boulevard (Signal)
3. Mowry School Road/Cedar Boulevard (Signal)
4. Cedar Boulevard/Balentine Drive (Signal)
5. Cedar Boulevard/Stevenson Boulevard (Signal)

Figure 1 illustrates the study intersections and the vicinity map of the proposed project. **Figure 2** shows the proposed project site plan.

This study addresses the following two traffic scenarios:

- **Existing Conditions** – This scenario evaluates the study intersections based on existing traffic volumes, lane geometry and traffic controls.
- **Existing plus Project Conditions** – This scenario is identical to Existing Conditions, but with the addition of traffic from the proposed project.

Figure 1: Vicinity Map

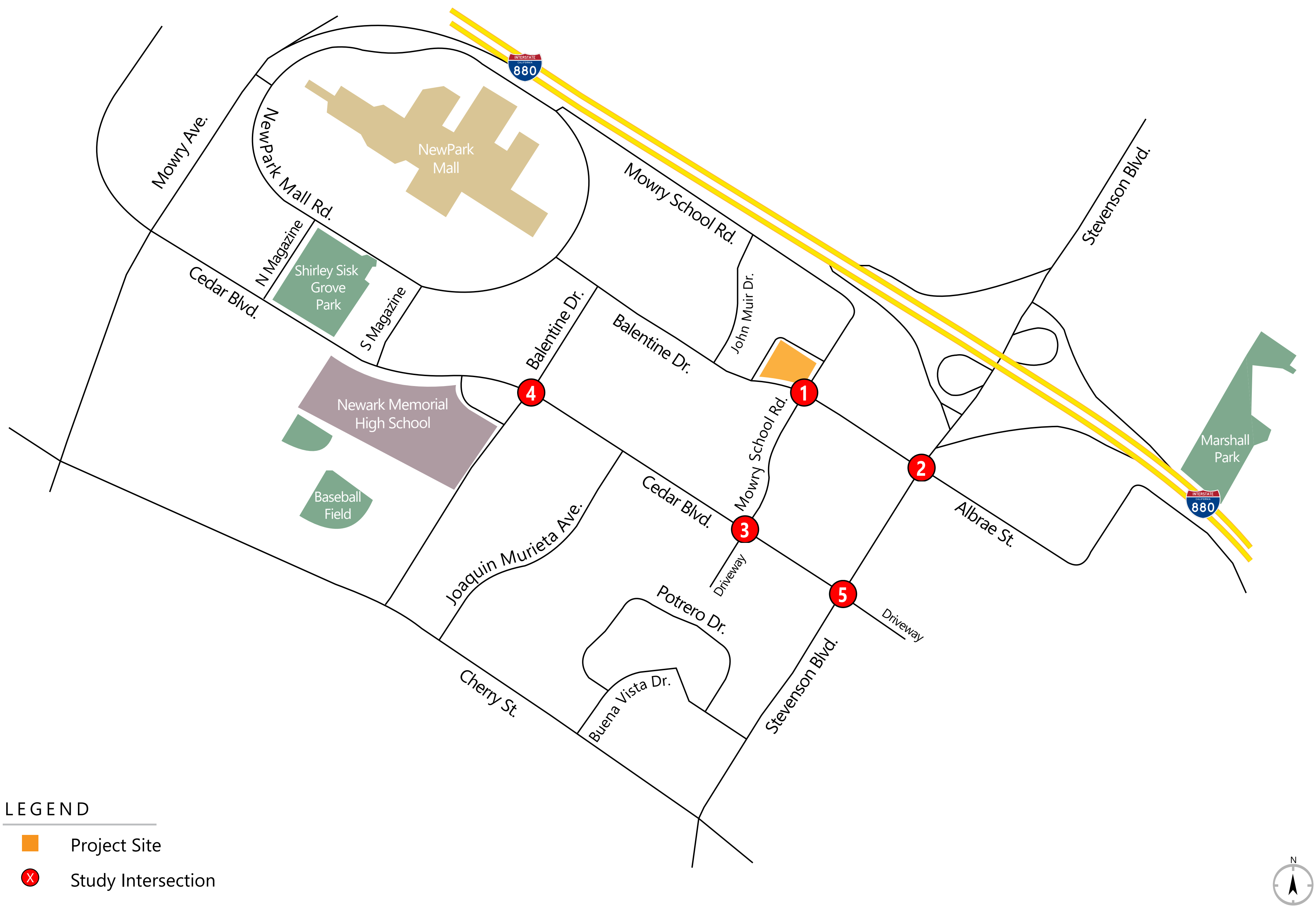
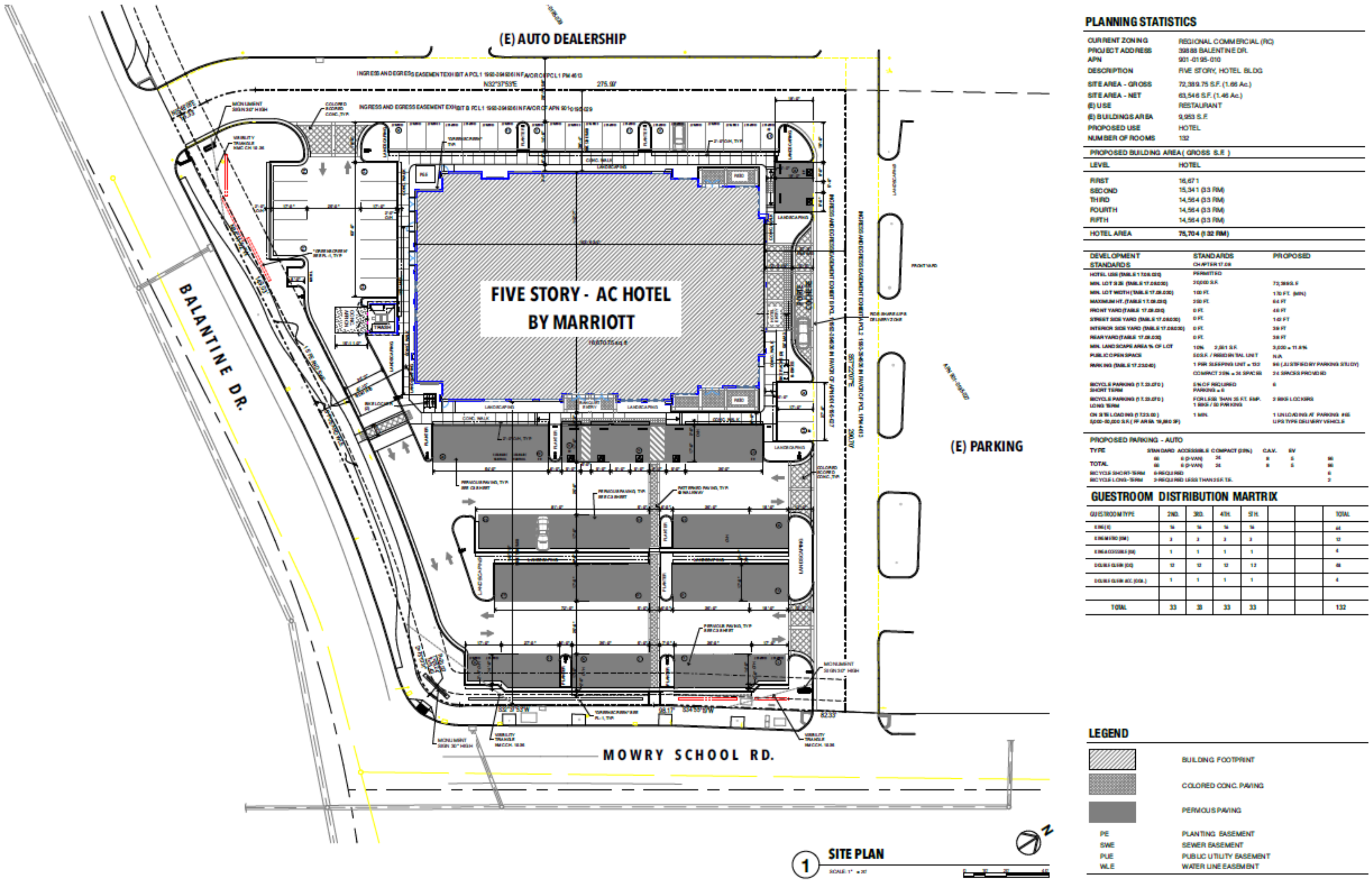


Figure 2: Project Site Plan



2.0 STUDY METHODOLOGY

2.1 Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of such factors as speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience and safety. The operational LOS are given letter designations from A to F, with A representing the best operating conditions (free-flow) and F the worst (severely congested flow with high delays). Intersections generally are the capacity-controlling locations with respect to traffic operations on arterial and collector streets.

Signalized Intersections

The study intersections under traffic signal control were analyzed using the 2000 HCM Operations Methodology for signalized intersections described in Chapter 16 (HCM 2000). This methodology determines LOS based on average control delay per vehicle for the overall intersection during peak hour intersection operating conditions. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. **Table 1** summarizes the relationship between the control delay and LOS for signalized intersections. The LOS methodology is described for Signalized intersections in detail in **Appendix A**.

Unsignalized Intersections

The study intersections under stop control (unsignalized) were analyzed using the 2000 HCM Operations Methodology for unsignalized intersections described in Chapter 17 (HCM 2000). LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At the side street, stop controlled intersections or two-way stop controlled intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The weighted average delay for the entire intersections is presented for all-way stop controlled intersections. **Table 2** summarizes the relationship between delay and LOS for unsignalized intersections. The delay ranges for unsignalized intersections are lower than for signalized intersections as drivers expect less delay at unsignalized intersections.

Each of the study intersections were analyzed using Synchro Version 10 software and HCM 2000 methodology. The LOS assessment under all scenarios is based on current traffic controls and signal timing. The LOS methodology is described for unsignalized intersections in detail in **Appendix A**.

Table 1: Level of Service Definitions for Signalized Intersections

Level of Service	Description
A	Very low control delay, up to 10 seconds per vehicle. Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop causing higher levels of delay.
C	Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestions becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.

Source: Highway Capacity Manual 2000

Table 2: Level of Service Definitions for Stop-Controlled Intersections

Level of Service	Description
A	Very low control delay less than 10 seconds per vehicle for each movement subject to delay.
B	Low control delay greater than 10 and up to 15 seconds per vehicle for each movement subject to delay.
C	Acceptable control delay greater than 15 and up to 25 seconds per vehicle for each movement subject to delay.
D	Tolerable control delay greater than 25 and up to 35 seconds per vehicle for each movement subject to delay.
E	Limit of tolerable control delay greater than 35 and up to 50 seconds per vehicle for each movement subject to delay.
F	Unacceptable control delay in excess of 50 seconds per vehicle for each movement subject to delay.

Source: Highway Capacity Manual 2000

2.2 Significant Impact Criteria/Level of Service Standards

City of Newark Signalized Intersections

Based on City of Newark Guideline thresholds, a project would result in a significant adverse impact on traffic conditions at a signalized intersection if for either peak hour:

a) The level of service at the intersection degrades from an acceptable LOS C or better under background conditions to an unacceptable LOS D, E, or F under project conditions;
b) The level of service at the intersection is an unacceptable LOS under background conditions and the addition of project trips causes the average delay at the intersection to increase by four (4) or more seconds

A significant impact by the City of Newark standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to no project conditions or better.

City of Fremont Signalized Intersections

Based on City of Fremont Guideline thresholds, a project would result in a significant adverse impact on traffic conditions at a signalized intersection if for either peak hour:

a) The level of service at the intersection degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under project conditions; or
b) The level of service at the intersection is an unacceptable LOS under background conditions and the addition of project trips causes the average delay at the intersection to increase by four (4) or more seconds.

A significant impact by the City of Fremont standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to no project conditions or better.

3.0 EXISTING CONDITIONS

This section describes existing conditions in the immediate project site vicinity, including roadway facilities, bicycle and pedestrian facilities, and available transit service. In addition, existing traffic volumes and operations are presented for the study intersections, including the results of LOS calculations.

3.1 Existing Setting and Roadway System

Important roadways in the immediate vicinity of the project site are discussed below:

Interstate 880 (I-880) is a north-south freeway that extends from Oakland to San Jose through Santa Clara and Alameda Counties. Within the vicinity of the project site, I-880 is an eight-lane freeway with three-mixed flow lanes and one HOV lane in each direction. Access to the project site from I-880 is provided via ramps at Stevenson Boulevard.

Stevenson Boulevard is an east-west, six-lane major arterial with a raised landscaped median and turn lanes at major intersections in the project vicinity. The posted speed limit on Stevenson Boulevard is 40 mph within the project vicinity. Stevenson Boulevard provides access to commercial and light-industrial areas and extends east over I-880 into Fremont.

Balentine Drive is a north-south roadway and is classified as a collector in the City's General Plan (2013). It extends north from the study intersection of Balentine Drive/Stevenson Boulevard and become an east-west roadway just before approaching to Newpark Shopping mall until the study intersection of Cedar Boulevard/Balentine Drive. It is an undivided four lanes roadway with bike lanes on both sides of the roadway. The posted speed limit on Balentine Drive is 35 mph. Access to the project site is provided on this roadway.

Mowry School Road is an east-west, two-lane undivided local roadway as identified in City's General Plan (2013). Mowry School Road begins at Newpark Shopping Mall as a north-south roadway and terminates at the study intersection with Cedar Boulevard. The posted speed limit on Mowry School Road is 30 mph within the project study area. Access to the project site is provided via Mowry School Road.

Cedar Boulevard is a north-south, four-lane divided arterial roadway as per the City's General Plan (2013). It extends from the intersection with Stevenson Boulevard and terminates at the intersection with Haley Street in north-west Newark. The posted speed limit on Cedar Boulevard is 35 mph.

3.2 Existing Pedestrian Facilities

Walkability is the ability to travel easily and safely between various origins and destinations without having to rely on automobiles or other motorized travel. The ideal "walkable" community includes wide sidewalks, a mix of land uses such as residential, employment, and shopping opportunities, a limited number of conflict points with vehicle traffic, and easy access to transit facilities, and services.

Pedestrian facilities are comprised of crosswalks, sidewalks, pedestrian signals, and off-street paths, which provide safe and convenient routes for pedestrians to access destinations such as institutions, businesses, public transportation, and recreation facilities.

In the immediate project vicinity, sidewalks are generally provided on both sides of roadways within the project vicinity, with the exception of Stevenson Boulevard on the east of Stevenson Boulevard/Balentine Drive intersection where sidewalks are provided on a single side of the roadway over the I-880 interchange. There are no mid-block gaps in the sidewalks along any of the major roadways within the study area. ADA-compliant curb ramps connect sidewalks at all study intersections with the exception of some approach legs. Crosswalks are generally present at the study intersections, with pedestrian signals at all signalized intersections that provide crosswalks. The project vicinity has generally adequate pedestrian facilities.

The existing pedestrian facilities in the study area are shown in **Figure 3.** Existing peak hour pedestrian counts are provided in **Appendix B.**

3.3 Existing Bicycle Facilities

Bicycle facilities include the following:

- Bike Paths (Class I) – Paved trails that are separated from roadways
- Bike Lanes (Class II) – Lanes on roadways designated for use by bicycles through striping, pavement legends, and signs
- Bike Routes (Class III) – Designated roadways for bicycle use by signs or other markings may or may not include additional pavement width for cyclists

Class II Bike Lanes

- Stevenson Boulevard between I-880 interchange in east and Eureka Drive in west
- Balentine Drive between Stevenson Boulevard and Cedar Boulevard
- Cedar Boulevard between Balentine Drive and Central Avenue

Class III Bike Routes

- Cedar Boulevard between Stevenson Boulevard and Balentine Drive

There is generally adequate signage for the bicyclists to maneuver without confusion. The existing bicycle facilities in the study area are shown in **Figure 4.**

3.4 Existing Transit Facilities

AC Transit, which operates local and express buses throughout Alameda and Contra Costa County, provides bus service in the project vicinity. The nearest Bay Area Rapid Transit (BART) Station is the Fremont BART station which is 4 miles (walking distance) from the project site and can be accessible by AC transit bus service within the project study area. The existing transit facilities are shown in **Figure 3**. **Table 3** describes the services and frequency of all AC Transit routes operating in the project vicinity.

Route 216 is accessible from Cedar Boulevard which is 10 min walking from the project site. Route 216 daily shuttle service connecting Silliman Recreation Center to Union City BART via Stevenson Boulevard, Fremont BART, and Niles Boulevard. Route 200 and 232 are accessible from the NewPark Mall bus stop that is 20 min walking distance from the project location. These routes also connect to Union City and Fremont BART stations through various residential neighborhoods in north Newark.

Table 3: Existing Transit Services

Route	From	To	via	Weekdays		Weekends	
				Operating Hours	Headway (minutes)	Operating Hours	Headway (minutes)
200	Fremont BART	Union City BART	Mowry Ave., NewPark Mall, Central Ave., Newark Blvd., and Decoto Rd.	7:00 a.m. – 11:00 p.m.	20-30	7:00 a.m. – 11:00 p.m.	20-30
216	Silliman Recreation Center	Union City BART	Stevenson Blvd., Fremont BART, and Niles Blvd.	7:00 a.m. – 6:00 p.m.	30+	7:00 a.m. – 6:00 p.m.	30+
232	NewPark Mall	Fremont BART	Cedar Blvd., Paseo Padre Pkwy., Union City BART, and Mission Blvd.	7:00 a.m. – 7:00 p.m.	30+	7:00 a.m. – 7:00 p.m.	30+

Source: http://www.actransit.org/

BART

BART provides commuter heavy-rail service to the San Francisco Peninsula with communities in the East Bay and South Bay. The project is located at about 4 miles (walking distance) southwest of the Fremont BART station. The Fremont BART Station serves two regional train routes, connecting Richmond in the north, San Francisco/Daly City in the northwest, and San Jose in the south. Weekday peak commute headways are between 30 and 40 minutes. Currently, access to the Fremont BART station is from the west side of the train tracks, via the Walnut Avenue and Mowry Avenue underpass.

Figure 3: Existing Pedestrian and Transit Facilities

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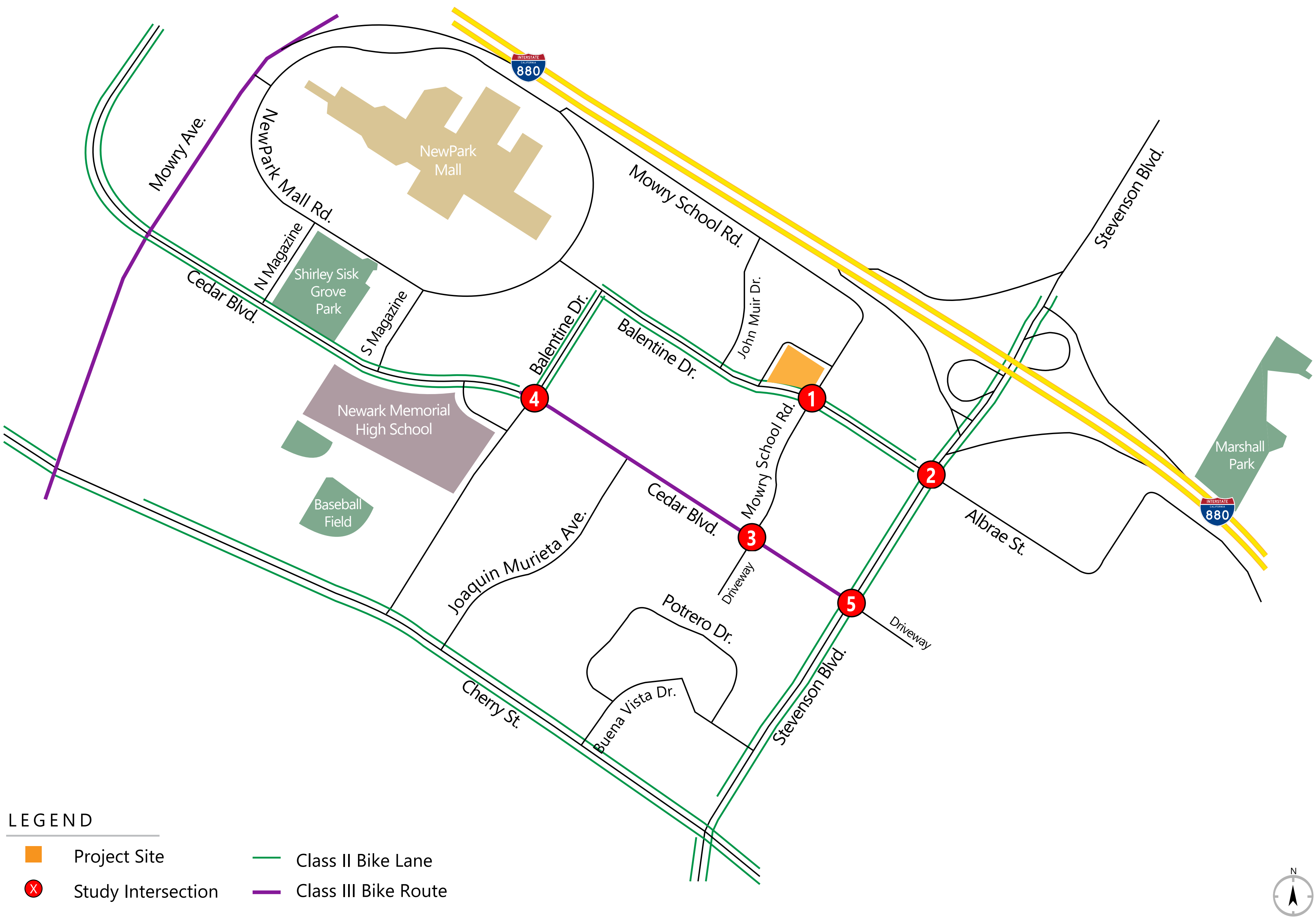
Figure 4: Existing Bicycle Facilities



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3.5 Existing Peak Hour Traffic Volumes and Lane Configurations

The existing operations of the study intersections were evaluated for the highest one-hour volumes during weekday morning and evening peak periods. Due to COVID-19 conditions, the ability to collect accurate new traffic counts is limited. Where available, turning movement counts conducted in April 2018 and from previous traffic studies were used. At the three locations where recent counts were unavailable, and at two proxy intersections that had been previously counted, new counts were conducted. Turning movement volumes at the new intersections were then adjusted based on the change in traffic between 2018 and 2020 at the proxy intersections of Balentine Drive/Stevenson Boulevard (Intersection#2), and Cedar Boulevard/Stevenson Boulevard (intersection#5). TJKM calculated the traffic growth factor of 1.82 during a.m., and 1.39 in p.m. peak hour at the intersection of Balentine Drive/Stevenson Boulevard (Intersection#2) and also calculated growth factor of 1.79 during a.m., and 1.31 in p.m. peak hour at the intersection of Cedar Boulevard/Stevenson Boulevard (intersection#5). Hence, TJKM applied 1.82 during a.m., and 1.39 in p.m. peak hour at the intersection of Mowry School Road/Balentine Drive. At Cedar Boulevard/Balentine intersection, 2015 traffic counts (Ref: Greater NewPark Masterplan, August 2015) were used and also calculated the growth factor of 3.2 during a.m., and 1.12 during p.m. peak hour and the this factor was applied to intersection of Mowry School Road/Cedar Boulevard. **Table 4** shows the applied growth factors at the intersections. Detailed calculations are presented in **Appendix B**.

Table 4: Growth Factors

#	Study Intersections	A.M. Peak Hour	P.M. Peak Hour
1	Mowry School Road/Balentine Drive	1.82	1.39
2	Balentine Drive/Stevenson Boulevard	2018 Counts	2018 Counts
3	Mowry School Road/Cedar Boulevard	3.2	1.12
4	Cedar Boulevard/Balentine Drive	2015 Counts	2015 Counts
5	Cedar Boulevard/Stevenson Boulevard	2018 Counts	2018 Counts

New turning movement counts for vehicles, bicycles, and pedestrians were conducted during the weekday a.m. peak period (7:00-9:00 a.m.) and p.m. peak period (4:00-6:00 p.m.) at these study intersections in September 2020. **Appendix B** includes all data sheets for the collected vehicle, bicycle, and pedestrian counts. **Figure 5** illustrates the existing lane geometry, and traffic controls at the study intersections. **Figure 6** illustrates the existing a.m. and p.m. peak hour vehicle turning movement volumes at the study intersections.

3.6 Intersection Level of Service Analysis – Existing Conditions

The existing operations of the study intersections were evaluated for the highest one-hour volume during the weekday morning and evening peak periods. **Figure 6** illustrates the existing conditions peak hour traffic volumes at the study intersections. The peak hour factor based on the counts was used to all study intersections for the existing analysis. Current signal timing sheets were provided by City of Fremont and Newark. The results of the LOS analysis using the Synchro 10 software program for Existing Conditions are summarized in **Table 5**. LOS worksheets are provided in **Appendix C.**

Under this scenario, five of the study intersections operate at an acceptable LOS D or better during both a.m. and p.m. peak hours.

Table 5: Intersection Level of Service Analysis – Existing Conditions

#	Study Intersections	Control	Peak Hour[1]	Existing Conditions		
				Average Delay[2]	LOS[3]	V/C[4]
1	Mowry School Road/Balentine Drive	Signal	AM	11.8	B	0.18
			PM	9.3	A	0.32
2	Balentine Drive/Stevenson Boulevard	Signal	AM	20.6	C	0.57
			PM	36.8	D	0.74
3	Mowry School Road/Cedar Boulevard	Signal	AM	9.6	A	0.48
			PM	16.9	B	0.37
4	Cedar Boulevard/Balentine Drive	Signal	AM	28.2	C	0.56
			PM	12.5	B	0.29
5	Cedar Boulevard/Stevenson Boulevard	Signal	AM	19.6	B	0.58
			PM	20.8	C	0.57

Notes:

[1] AM – morning peak hour, PM – evening peak hour

[2] Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections.

[3]LOS – Level of Service

[4]V/C – Volume to Capacity Ratio

Figure 5: Existing Conditions Lane Geometry and Traffic Controls

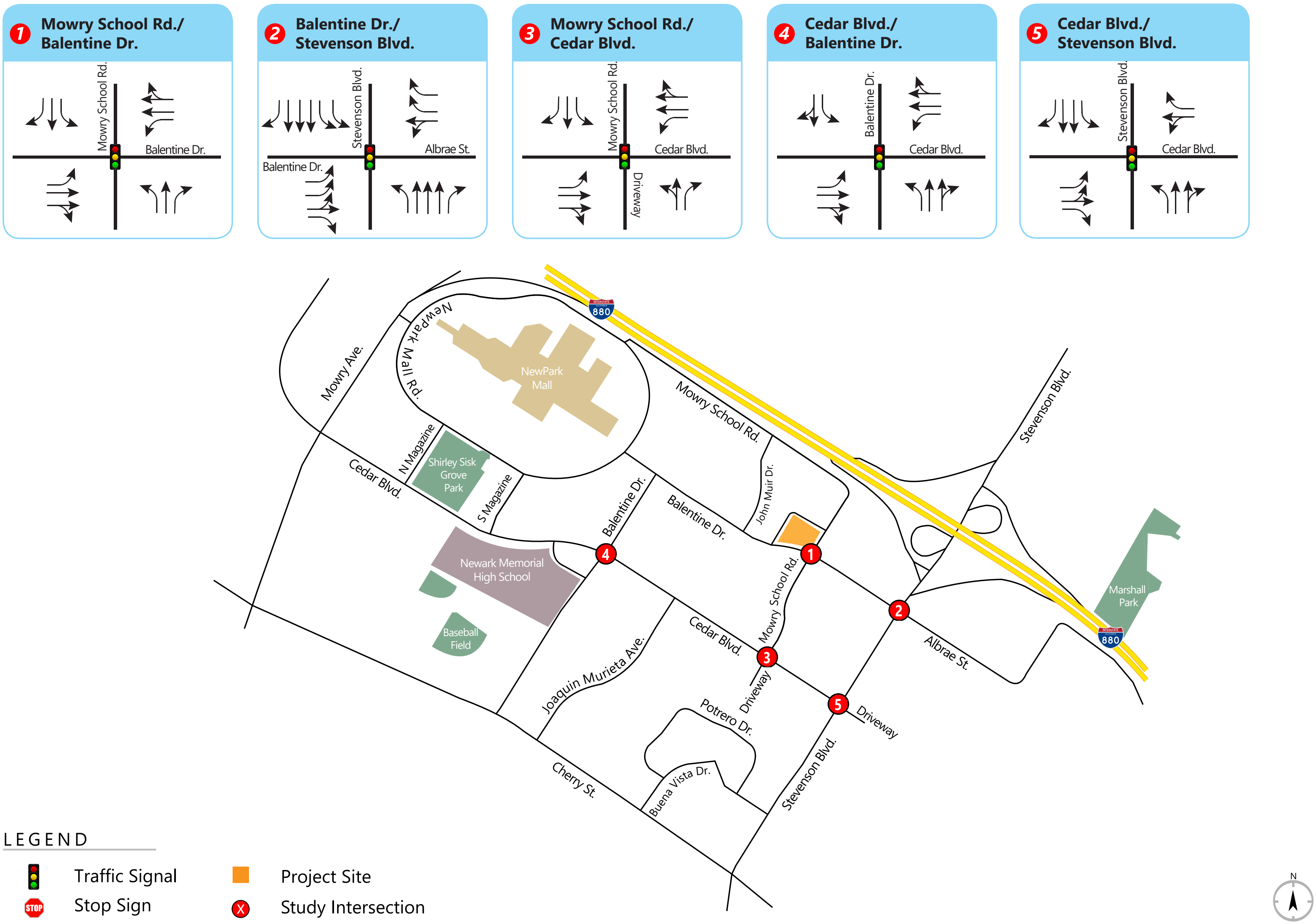

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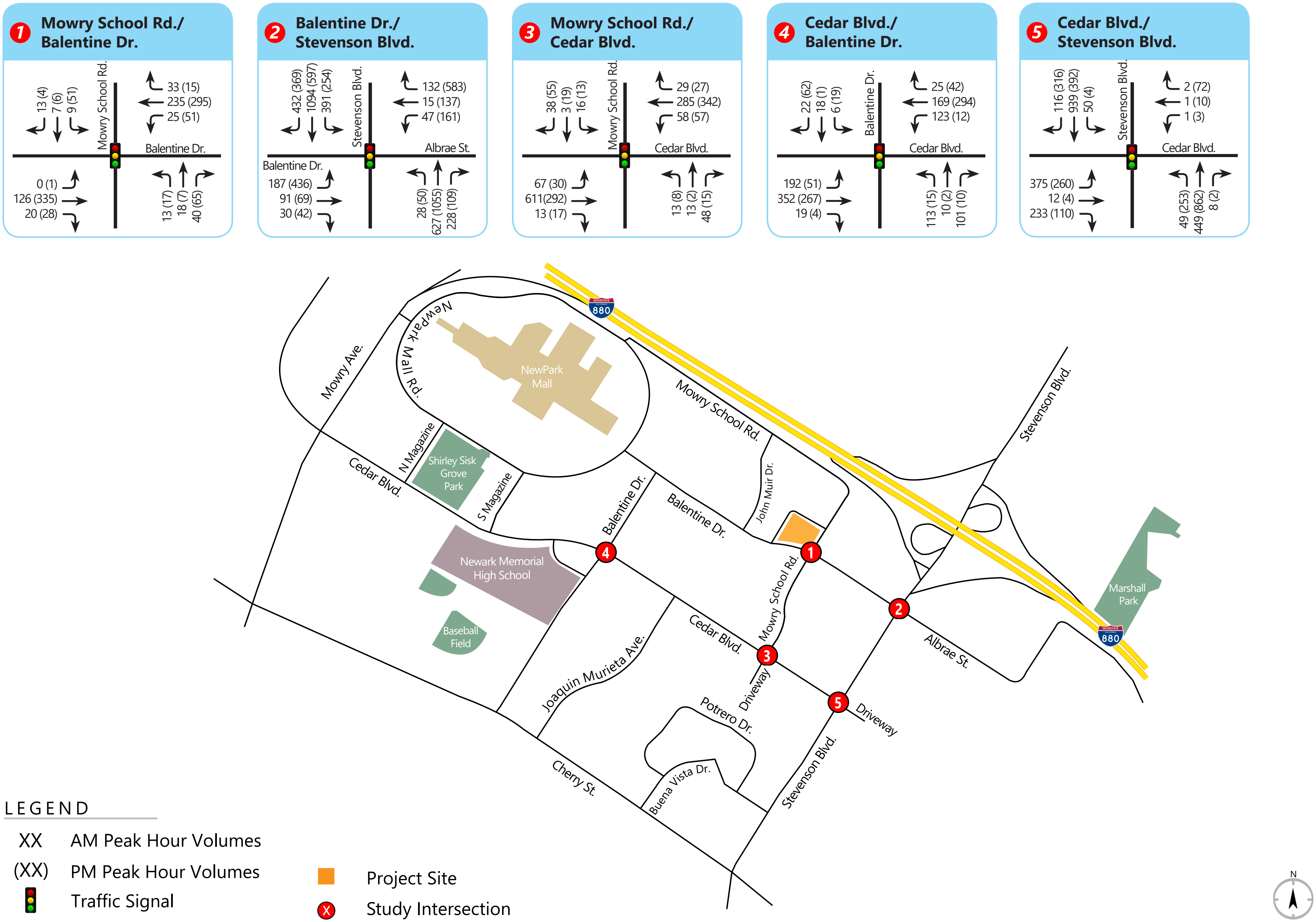
Figure 6: Existing Conditions Peak Hour Traffic Volumes



4.0 EXISTING PLUS PROJECT CONDITIONS

This analysis scenario presents the impacts of the proposed hotel development at the study intersections and surrounding roadway system. This scenario is similar to Existing Conditions, but with the addition of traffic from the proposed project.

4.1 Project Description

The proposed project is located at the north quadrant of the Mowry School Road/ Balentine Drive intersection in the City of Newark. The project proposes to replace an existing restaurant with a hotel of 132 rooms. The restaurant operated from 1:30 p.m.-9:30 p.m. on weekdays and weekends. Project access will be provided via full access driveway on Balentine Drive and Mowry School Road.

4.2 Project Trip Generation

TJKM developed estimated project trip generation for the proposed project based on published trip generation rates from the ITE publication Trip Generation, 10th Edition (2017).

The proposed trip generation includes existing trip credits based on the existing usage on the site. The number of trips generated by an existing restaurant was determined based on published trip generation from the ITE publication Trip Generation, 10th Edition (2017). However, based on operational hours of an existing restaurant, trips generated during the p.m. peak hour was credited for existing uses on site.

TJKM used published trip rates for the ITE land use Hotel (310) for this project. The proposed hotel will have an attractive lobby, exercise room, breakfast area, ballrooms, and an indoor spa.

Table 6 shows the trips expected to be generated by the proposed project. The proposed project is expected to generate 714 daily net trips, including 62 a.m. peak hour net trips (37 inbound trips, 25 outbound trips) and 37 p.m. peak hour net trips (12 inbound trips, 25 outbound trips).

Table 6: Project Trip Generation

Land Use	Size	*Daily*		*AM Peak*					*PM Peak*				
		Rate	*Trips*	*Rate*	*In: Out*	*In*	*Out*	*Total*	*Rate*	*In: Out*	*In*	*Out*	*Total*
Proposed Facility													
Business Hotel (310)[1]	132 Rooms	8.36	1,104	0.47	*59:41*	37	25	62	*0.60*	*51:49*	40	39	79
Existing Facility													
Quality Restaurant (931)[2]	150 Seats	2.60	-390				*N/A*		*0.28*	*67:33*	*-28*	*-14*	*-42*
Total Trips			**714**			**37**	**25**	**62**			**12**	**25**	**37**

Notes:
Source: ITE *Trip Generation Manual, 10th Edition*, 2017
[1]Hotel (ITE Land Use Code 310) based on number of rooms.
[2]Quality Restaurant (ITE Land Use Code 931) based on number of seats. However, trip credits were not taken during a.m. peak hour based on operational hours.

4.3 Project Trip Distribution and Assignment

Trip distribution is a process that determines in what proportion vehicles would be expected to travel between the project site and various destinations outside the project study area. Assignment determines the various routes that vehicles would take from the project site to each destination using the estimated trip distribution.

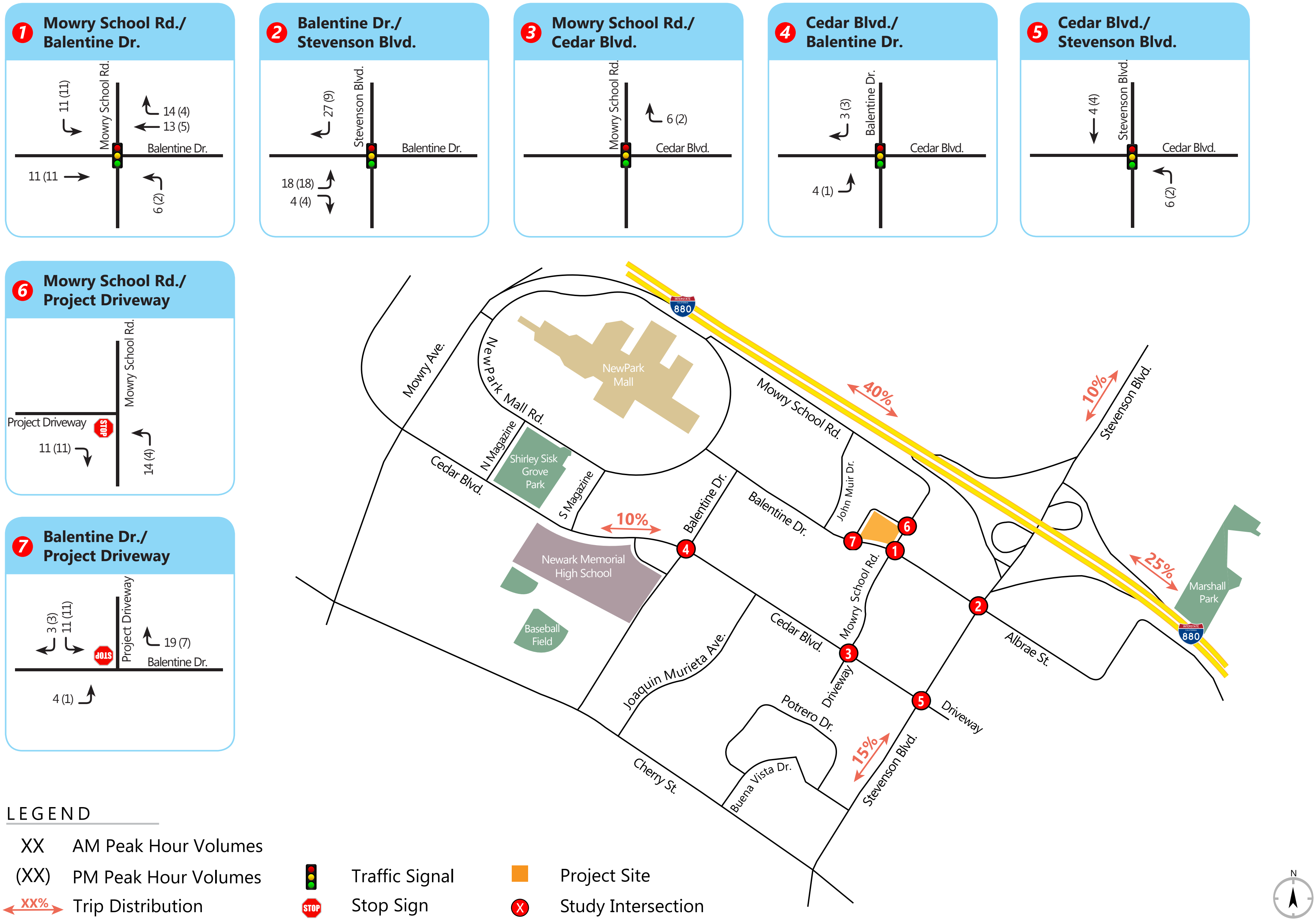
Trip distribution assumptions for the proposed project were developed based on the existing travel patterns and TJKM's knowledge of the study area.

The distribution assumptions are as follows**:**

- 40 percent to/from north of I-880
- 25 percent to/from south of I-880
- 15 percent to/from west of Stevenson Boulevard
- 10 percent to/from east of Stevenson Boulevard
- 10 percent to/from north of Cedar Boulevard

Figure 7 illustrates the trip distribution percentages and trip assignment project volumes developed for the proposed project. The assigned project trips were added to traffic volumes under Existing Conditions to generate Existing plus Project Conditions traffic volumes.

Figure 7: Project Trip Assignment and Distribution



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4.4 Intersection Level of Service Analysis – Existing plus Project Conditions

Figure 8 shows projected turning movement volumes at the study intersections for Existing plus Project Conditions. The intersection LOS analysis results for Existing plus Project Conditions are summarized in **Table 7**. Detailed calculation sheets for Existing plus Project Conditions are contained in **Appendix D**.

Under this scenario, five of the study intersections will operate at an acceptable LOS D or better during both a.m. and p.m. peak hours. Based on the City of Newark and City of Fremont impact criteria, the project is expected to have a **less-than-significant impact** at all the study intersections.

The results for Existing Conditions are included for comparison purposes, along with the projected increases in control delay. It should be noted that some of the study intersections are estimated to show a negative net increase in intersection delay due to the addition of project trips to non-critical turn movements.

Table 7: Intersection Level of Service Analysis – Existing plus Project Conditions

#	Study Intersections	Control	Peak Hour[1]	Existing Conditions			Existing plus Project Conditions			Change in Delay[5]	Change in V/C[6]
				Average Delay[2]	LOS[3]	V/C[4]	Average Delay[2]	LOS[3]	V/C[4]		
1	Mowry School Road/Balentine Drive	Signal	AM	11.8	B	0.18	11.5	B	0.21	-0.3	0.030
			PM	9.3	A	0.32	10.0	A	0.35	0.7	0.030
2	Balentine Drive/Stevenson Boulevard	Signal	AM	20.6	C	0.57	20.8	C	0.57	0.2	0.000
			PM	36.8	D	0.74	37.2	D	0.75	0.4	0.010
3	Mowry School Road/Cedar Boulevard	Signal	AM	9.6	A	0.48	9.6	A	0.48	0.0	0.000
			PM	16.9	B	0.37	16.9	B	0.37	0.0	0.000
4	Cedar Boulevard/Balentine Drive	Signal	AM	28.2	C	0.56	28.3	C	0.56	0.1	0.000
			PM	12.5	B	0.29	12.5	B	0.29	0.0	0.000
5	Cedar Boulevard/Stevenson Boulevard	Signal	AM	19.6	B	0.58	19.8	B	0.58	0.2	0.000
			PM	20.8	C	0.57	20.8	C	0.57	0.0	0.000

Notes:

[1] AM – morning peak hour, PM – evening peak hour

[2] Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections.

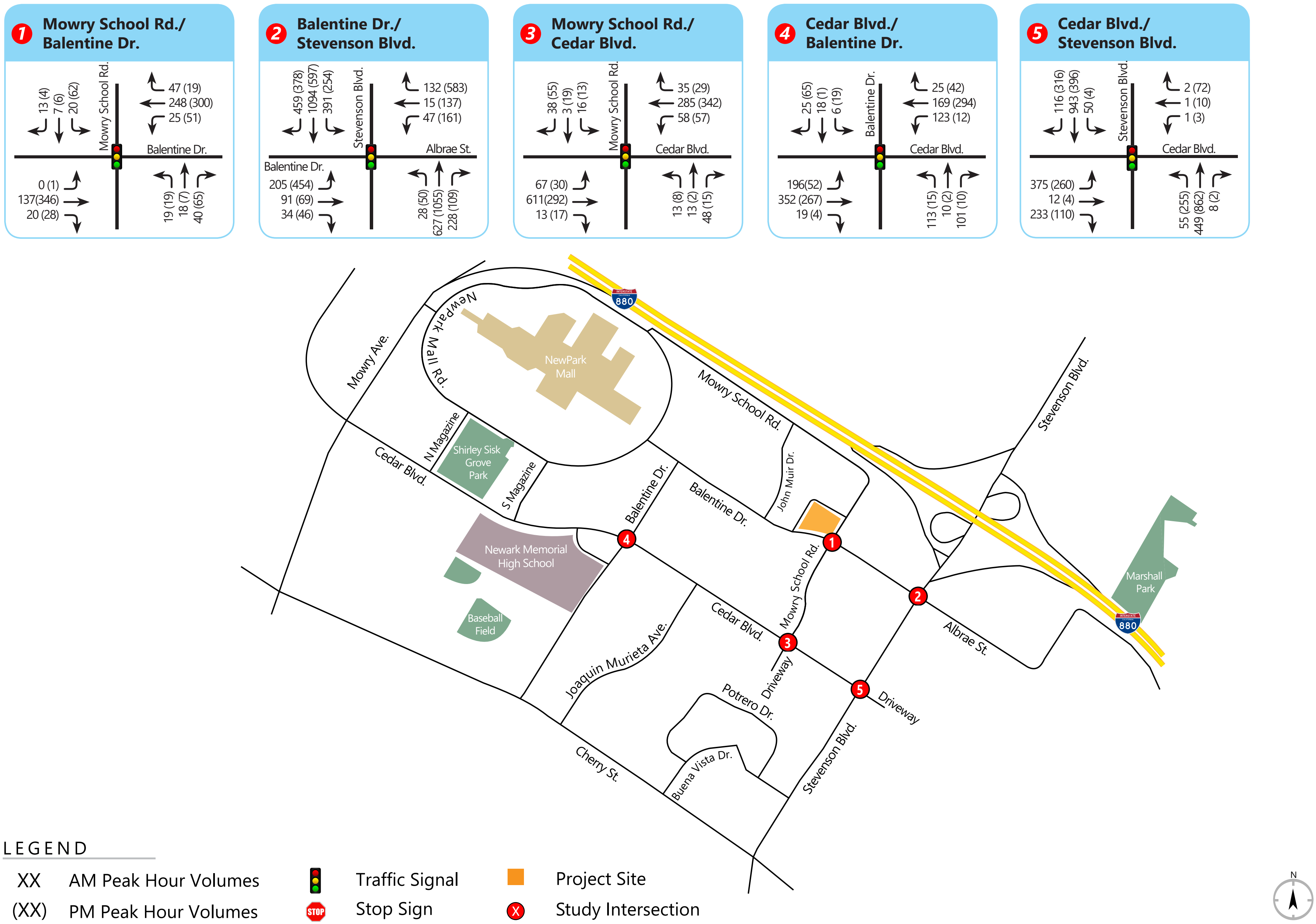
[3] LOS – Level of Service

[4] V/C – Volume-to-Capacity Ratio

[5] Change in Delay between Existing and Existing plus Project Conditions

[6] Change in V/C between Existing and Existing plus Project Conditions

Figure 8: Existing plus Project Conditions Peak Hour Traffic Volumes



5.0 VEHICLE MILES TRAVELED

This section provides an analysis of potential project impacts due to Vehicle Miles Traveled (VMT) attributable to the project. City of Newark has not yet adopted a methodology for evaluating VMT impacts. The analysis of VMT impacts described is intended to meet the requirements stipulated by recent changes to statewide CEQA guidelines, and incorporate relevant advice contained in the Technical Advisory on Evaluating Transportation Impacts in CEQA published by the Governor's Office of Planning & Research (OPR) in December 2018.

5.1 OPR Technical Advisory for Evaluating VMT

Senate Bill (SB) 743, which was signed into law by Governor Brown in 2013 and codified in Public Resources Code 21099, tasked OPR with establishing new criteria for determining the significance of transportation impacts under CEQA. SB 743 requires the new criteria to "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." SB 743 changes the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact (see Pub. Resource Code, § 21099, subd. (b)(2)). In December 2018, OPR circulated its most recent Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR) that provides recommendations and describes various options for assessing VMT for transportation analysis purposes. The VMT analysis options described by OPR are primarily tailored towards single-use development residential, office or retail projects, not mixed use projects and not hotel projects. OPR recommends the following methodology and criteria for specific land uses:

- For residential projects, OPR recommends that VMT impacts be considered potentially significant if a residential project is expected to generate VMT per Capita (i.e., VMT per resident) at a rate that exceeds 85 percent of a regional average.
- For office projects, OPR recommends that VMT impacts be considered potentially significant if a residential project is expected to generate VMT per Employee at a rate that exceeds 85 percent of a regional average.
- For retail projects, OPR recommends that VMT impacts be considered potentially significant if a project results in a net increase in total VMT. This approach takes into account the likelihood that retail developments may lead to increases or decreases in VMT, depending on previously existing retail travel patterns. This approach may also be used for other types of projects with customer components.

OPR does not provide specific guidance on evaluating other land use types, such as hotels, except to say that other land uses could choose to use the method applicable to the land use with the most similarity to the proposed project.

OPR also recommends exempting some project types from VMT analysis based on the likelihood that such projects will generate low rates of VMT:

- OPR recommends that projects generating less than 110 trips per day generally may be assumed to cause a less than significant transportation impact.

- OPR notes that residential and office projects that located in areas with low VMT, and that incorporate similar features, will tend to exhibit similar low VMT, and can be screened out.
- OPR states that residential, retail, office and mixed-use projects near transit stations or major transit stops should be screened out based on the likelihood that such projects will have a less than significant impact on VMT.
- OPR notes that provides that provide affordable housing in infill locations generally improves jobs-housing match, thus shortening commutes and reducing VMT. Therefore, OPR includes a less than significant presumption for affordable residential development.

5.2 CEQA Requirements for VMT Evaluations

Section 15064.3 describes the requirements for assessing transportation impacts based on vehicle miles traveled (VMT) that apply statewide beginning on July 1, 2020. As described in Section 15064.3:

- "Vehicle miles traveled" refers to the amount and distance of automobile travel "attributable to a project". Other relevant considerations may include the effects of the project on transit or non-motorized travel.
- As described separately in the Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR, December 2018), VMT re-routed from other origins or destinations as the result of a project would not be attributable to a project except to the extent that the re-routing results in a net increase in VMT. For example, OPR guidelines note that retail projects typically re-route travel from other retail destinations, and therefore a retail project may lead to increases or decreases in VMT, depending on previously existing travel patterns. Similarly, a large share of retail trips are "pass-by trips" that would not be considered attributable to a retail project.
- Lead agencies have discretion to choose the most appropriate methodology to evaluate a project's vehicles miles traveled, including whether to express the change in absolute terms, per capita, per household or any other measure.
- If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered: a lead agency may evaluate the project's vehicle miles travelled qualitatively.
- A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence.

5.3 Potential VMT Impacts Resulting from the Proposed Project

The project is an infill development that proposes to construct 132-room hotel at 39888 Balentine Drive. The hotel is adjacent to commercial retail, office, and the Newpark Shopping Mall. It is less than 0.20 miles from the nearest transit stop and there are sidewalks and bicycle facilities along the roadways.

To reduce the rate of VMT per hotel guest and employee, the project provided a Transportation Demand Management Plan within the TIS which include measures such as shuttle program, bicycling, and transit incentives to encourage vehicle trip reduction.

5.4 VMT Impact Findings

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. CEQA Guidelines Section 15064.3 describes the applicable criteria for analyzing transportation impacts with respect to VMT. For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact. Projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact. For the purposes of this study and direction from City staff, a VMT impact is considered significant if implementation of any component of the proposed project would trigger the following condition:

- The total VMT in the project area increase compared to baseline conditions.

5.4.1 VMT per Employee

Table 8 shows a comparison of the Regional and County VMT. The Alameda County Transportation Commission (ACTC) model showed an average VMT per Employee of 17.2 within the South Planning Area that includes Newark and the project site for year 2020. VMT impacts associated with hotel employees would be potentially significant if the average VMT per Employee exceeds 14.6 miles per Employee (based on 85 percent of the average for the Alameda County South Planning Area).

TJKM reviewed the ACTC VMT Mapping Tool to determine the average VMT per Employee for the project area. The project is located within TAZ 935 Based on the CTC 2020 tool, the VMT per employee within the project TAZ is 14.1, thus below the threshold of 14.6 for the Alameda County South Planning Area. Based on this comparison, VMT impacts associated with hotel employees would be less than significant.

Table 8: Vehicle Miles Traveled per Employee

Year	Alameda County - South Planning Area Average	Alameda County - South Planning Area Impact Threshold (85% of Average)	Project TAZ Average
2020	17.2	14.6	14.1

Source: Alameda County Transportation Commission VMT Mapping Tool

5.4.2 VMT Attributable to Hotel Guests

The proposed hotel is not a destination/resort type hotel, so would serve to provide regionally desirable lodging in order to accommodate tourists or employees that visit other locations within the San Francisco Bay Area.

Hotel guests will consist of visitors to the San Francisco Bay Area that, without the project, would simply stay at another hotel, or lodging option such as Air B&B, in Newark or other cities in the region such as Fremont, Hayward, other parts of Alameda County, or Santa Clara County that provides hotel space that accommodates San Francisco Bay Area and Silicon Valley visitors. Existing hotels within four miles of the Project site include:

- Chase Suite Hotel Newark
- Good Nite Inn Fremont-Silicon Valley
- Extended Stay America Suites Fremont Newark
- Best Western Plus Garden Court Inn (Fremont)
- Doubletree by Hilton Newark-Fremont
- Comfort Inn and Suites Newark
- SpringHill Suites by Marriot Newark Fremont
- Towne Place Suites by Marriott Newark Silicon Valley
- Holiday Inn Express Fremont-Milpitas Central
- Staybridge Suites Newark-Fremont
- Residence Inn by Marriot Fremont Silicon Valley

- La Quinta Inn & Suites by Wyndham Fremont/Silicon Valley
- SpringHill Suites by Marriott San Jose Fremont
- Fremont Marriott Silicon Valley
- Hyatt Place Fremont/Silicon Valley
- Days Inn by Wyndham Fremont
- Hampton Inn Fremont

Based on information on file with the City of Newark, the average hotel occupancy rate in the City of Newark in Fiscal Year 2018-2019 (pre-pandemic) was 78%. Given the large supply of unoccupied hotel rooms within regional hotel markets (including the Project area): the VMT generated by hotel guests attributable to the proposed Project is unlikely to result in an increase in the number of visitors to the region, and therefore unlikely to result in a net increase in total VMT. Furthermore, if hotels and other lodging options in the area were to be 100 percent full: visitors would be forced to stay overnight at hotels outside the area and travel during daytime hours, thus generating additional VMT.

Taking this into account: VMT impacts generated by hotel guests are anticipated to be less than significant. In addition, the project applicant will implement a transportation demand management (TDM) plan to further reduce daily VMT generated by the hotel.

5.5 Findings & Recommended Mitigation (Hotel VMT)

Based on the analysis of hotel VMT described above:

- VMT impacts attributable to work trips by hotel employees are anticipated to be less than significant, because home-based VMT generated by hotel employees is anticipated to be less than the average VMT per employee
- VMT impacts attributable to trips by hotel guests are anticipated to be less than significant because the VMT generated by hotel guests is unlikely to result in a net increase in total VMT.

In addition, the project applicant proposes to develop and implement a transportation demand management (TDM) plan measures further reduce daily VMT generated by the hotel.

6.0 ADDITIONAL ANALYSIS

The following sections provide additional analyses of other transportation issues associated with the project site, including:

- Site access and onsite circulation;
- Parking analysis;
- Queueing and Driveway analysis;
- Pedestrian, bicycle and transit access and impacts; and

The analyses in these sections are based on professional judgment in accordance with the standards and methods employed by traffic engineers. Although operational issues are not considered CEQA impacts, they do describe traffic conditions that are relevant to describing the project environment.

6.1 Site Access and On-Site Circulation

This section analyzes site access and internal circulation for vehicles, pedestrians, and bicycles, based on the site plan presented on **Figure 2** (dated September 8, 2022). TJKM reviewed internal and external access for the project site for vehicles, pedestrians, and bicycles and on-site vehicle circulation. Site access would be provided from Balentine Drive and Mowry School Road. Currently, the existing driveway on Mowry School Road is located approximately 180 feet east of the intersection of Balentine Drive/Mowry School Road and provides shared access to nearby businesses. Pedestrian access is provided via adequate sidewalks and a continuous pedestrian path of travel from the sidewalk to the building's lobby. Bicycle access is provided via a network of existing bicycle facilities on Balentine Drive and surrounding streets. The trash enclosure is planned on the western side of the property, providing access for garbage and delivery trucks. Emergency vehicles have ample space to access the project site. Overall, the vehicle and truck access, as well as on-site circulation is **adequate**.

6.2 Parking Analysis

This section discusses vehicle parking for the proposed project and includes an assessment of whether the proposed parking supply is adequate based on the proposed project size. Based on the project site plan dated September 8, 2022 (**Figure 2**), 96 parking stalls are provided for the 132 hotel units. Per the City Municipal Code, Section 17.23.040, the required number of on-site parking stalls is one space per guest room, or every two beds, whichever is greater. The total parking required is 132 parking stalls. This results in a parking deficiency of 36 parking stalls. This section looks at several different analyses for parking: ITE Parking Demand, Parking Survey, Hotel Occupancy Trends, and Transportation Network Companies.

6.2.1 ITE Parking Demand

Based on rates published by the Institute of Transportation Engineers (ITE) in Parking Generation (5th Edition), the average peak period parking demand for a hotel is 0.83 stalls per occupied room on a weekday and 1.18 stalls on the weekend (Hotel, ITE Code 310). Based on ITE rates, the peak parking demand for the project would be 110 stalls on weekdays and 156 stalls on weekendsat 100 percent occupancy. It should be noted that these average rates consider a wide variety of suburban hotels and thus may not accurately reflect parking demand at hotels in Newark that cater primarily to local travelers. Before the Covid-19 Pandemic, the average hotel occupancy was 78% within the City of Newark.

6.2.2 Parking Survey

TJKM surveyed parking demand at three similar hotels within Newark and Fremont cities during one weekday and one weekend. The survey also included obtaining hotel occupancy data from the hotels to determine per room parking demand rates. Based on the parking occupancy conducted, TJKM evaluated the proposed parking supply to determine if the parking stalls proposed are sufficient. The experience of TJKM is that many parking ordinances do not account for the fact that different functions within a hotel peak at different times of the day. For example, most employees are on duty during mid-day periods such as 9 a.m. to 4 p.m., when the majority of guests are off site. Hotels experience their peak parking occupancy between 11 p.m. and 6 a.m. when most guests are present. TJKM conducted parking surveys for the following hotels:

1. Holiday Inn Express,42200 Albrae St, Fremont, CA 94538
2. Staybridge Suites Newark – Fremont, 6000 Newpark Mall Road, Newark,CA,94560
3. Hyatt Place Fremont/Silicon Valley, 3101 W Warren Avenue, Fremont, CA 94538

To note, parking surveys were taking in October 2020, during the Covid-19 Pandemic with the dynamics of hotel services changing due to mode choice by guests and hotel employees. Often during the Pandemic, guests may choose not to use public transportation, shuttle service or transportation network companies (TNCs) and rent vehicles instead. Hotel employees that may have carpooled in the past may use their own vehicle. Hotels may also be used to serve as a quarantine location for essential workers or those that do not want to infect other members in their household, and/or a staging area during natural disasters such as the recent onslaught of regional fires. Therefore, the number of vehicles parked may be higher than the regional and national average.

Table 9 below shows the parking observations and calculated parking rates for weekday.

Table 9: Parking Observations for Weekday

	Holiday Inn Express, Fremont (Extended Stay)	Staybridge Suites, Newark (Extended Stay)	Hyatt Place Fremont (Extended Stay)	Average (Weekday)
	Thurs.	Thurs.	Wed.	
	10/8/2020	10/8/2020	10/21/2020	
Total Rooms	126	104	151	**127**
Occupied Rooms	81	95	43	**73**
Percent Occupied	64%	91%	28%	**61%**
Total Parking Stalls	123	96	147	**122**
Maximum Occupied Parking Stalls	76	87	48	**70**
Percent Occupied	62%	91%	33%	**62%**

	Holiday Inn Express, Fremont (Extended Stay)	Staybridge Suites, Newark (Extended Stay)	Hyatt Place Fremont (Extended Stay)	Average (Weekday)
	Thurs.	Thurs.	Wed.	
	10/8/2020	10/8/2020	10/21/2020	
Parking Occupancy Rate per Occupied Room	0.94	0.92	1.12	**0.99**
Parking Occupancy Rate per Room	0.60	0.84	0.32	**0.59**

Of the occupied rooms, there is an average parking occupancy rate of 0.99 and parking occupancy rate per room of 0.59. This is slightly higher than the ITE Parking rate of 0.83. The occupancy rate per room shows that, at the time, there were available parking stalls, however, if there was 100 percent occupancy, the parking lot may be close to maximum based on the occupancy rate per room.

Table 10 below shows the parking observations and calculated parking rates for weekend.

Table 10: Parking Observations for Weekend

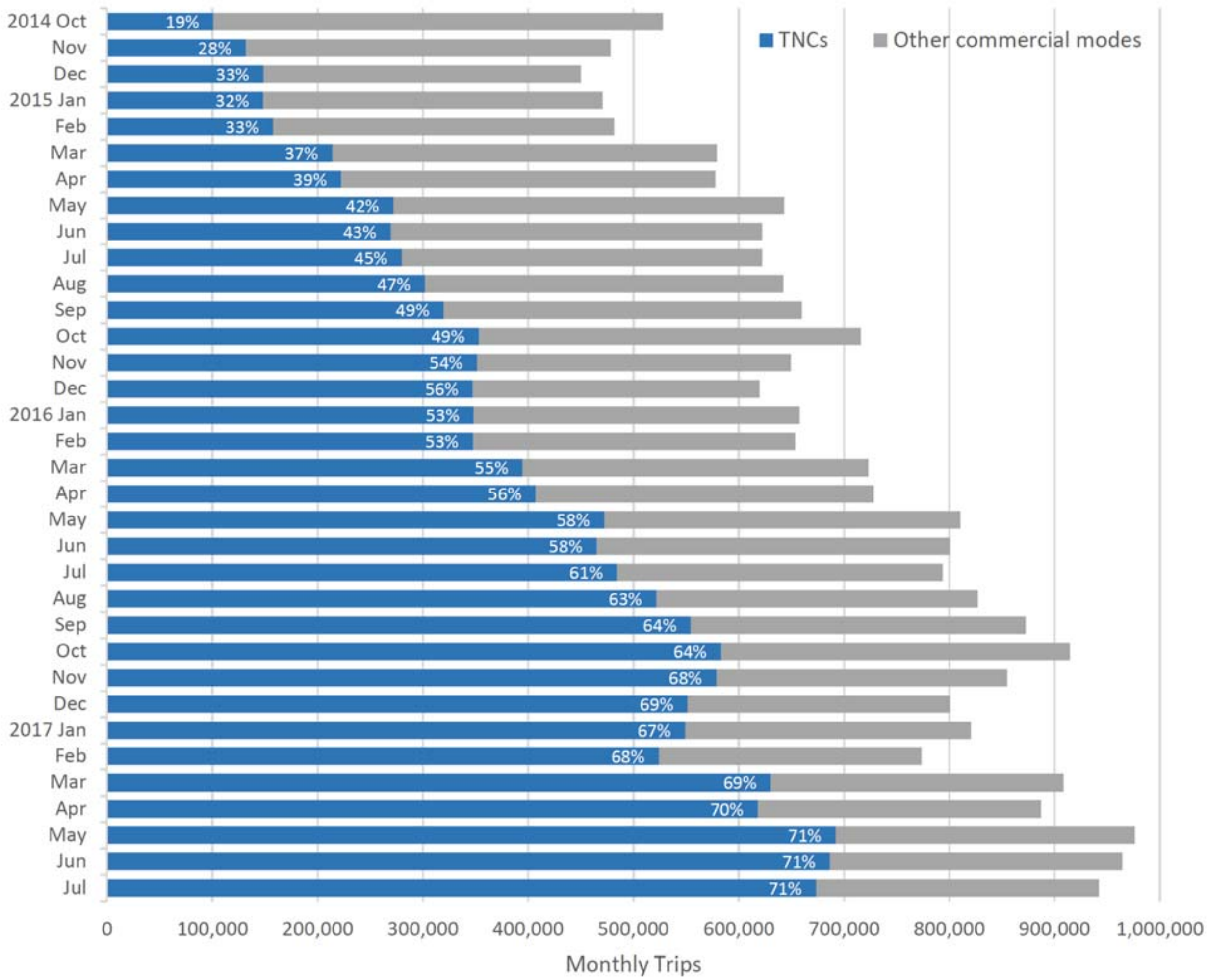
	Holiday Inn Express, Fremont (Extended Stay)	Staybridge Suites, Newark (Extended Stay)	Hyatt Place Fremont (Extended Stay)	Average (Weekend)
	Sat.	Sat.	Sat.	
	10/10/2020	10/10/2020	10/24/2020	
Total Rooms	126	104	151	**127**
Occupied Rooms	65	74	58	**66**
Percent Occupied	52%	71%	38%	**54%**
Total Parking Stalls	123	96	147	**122**
Maximum Occupied Parking Stalls	53	64	58	**58**
Percent Occupied	43%	67%	39%	**50%**
Parking Occupancy Rate per Occupied Room	0.82	0.86	1.00	**0.89**
Parking Occupancy Rate per Room	0.42	0.62	0.38	**0.47**

Of the occupied rooms, there is an average parking occupancy rate per room of 0.89 and an overall parking occupancy rate per room of 0.47. This is slightly less than the ITE Parking rate of 1.18 and the City's municipal code of 1.0 per occupied room and significantly less per room.

6.2.4 Transportation Network Company (TNC)

TNC use in the Bay Area is common and relevant for use from airports to hotels or other locations. Based on a recent report, *Airport Analyses Informing New Mobility Shifts: Opportunities to Adapt Energy-Efficient Mobility Services and Infrastructure, June 2018,* a review of ground transportation to and from several airports showed that TNC use continues to grow and accounts up to 18% of all passenger ground transportation to and from some airports, including San Francisco International Airport. Comparatively, San Francisco International Airport (SFO) published a white paper, *Transportation Network Companies at San Francisco International Airport, September 2017,* which provided growing statistics of TNCs compared with other commercial ground transportation trips. **Figure 9** shows the ground transportation trips. In 2016, an average of 54.8 percent of passengers utilized TNC to and from the airport. In the data available for 2017, approximately 70 percent of passengers utilized TNCs from SFO. This growing trend can be applicable to parking demand to and from the project site. Though the SFO report shows a large percentage of passengers utilizing TNCs, for the purpose of this report, this serves as information and likelihood that TNCs are utilized more often, however, TNCs were not factored in as a reduction to meet parking requirements.

Figure 9: TNC and Other Commercial Ground Transportation Trips (October 2014-July 2017)



6.2.5 Parking Analysis Conclusion

This parking analysis looked at several different ways to determine if the proposed parking, though deficient per the City of Newark Municipal Code, can accommodate the hotel land use. The parking demand data was collected during the Covid-19 Pandemic where hotel travel might have changed such as decreased use of shuttles, carpooling, transit and TNC (Uber and Lyft) use.

Based on rates published by the Institute of Transportation Engineers (ITE) in Parking Generation (5th Edition), the average peak period parking demand for a hotel is 0.83 stalls per occupied room on a weekday and 1.18 stalls on the weekend (Hotel, ITE Code 310). Based on ITE rates, the peak parking demand for the project would be 110 stalls on weekdays and 156 stalls on weekends at 100 percent occupancy. Based on the parking survey performed at similar hotels within the area, the average parking occupancy rate per occupied room was calculated as 0.99 on a weekday and 0.89 on a weekend. Based on the ITE Parking

Generation, parking surveys, and consultation with City of Newark Staff, it was recommended to apply 0.83 stalls per occupied room on a weekday and 0.89 stalls per occupied room on a weekend. Before the Covid-19 Pandemic, the average hotel occupancy was 78% within the City of Newark. Based on this, average number of occupied rooms would be 103 rooms. Hence, the project would need 85 parking stalls on a weekday and 92 parking stalls on a weekend. Furthermore, the project will implement a Transportation Demand Management Plan to reduce the parking demand by 15 percent, which can reduce the parking demand from 85 to 72 parking stalls on a weekday and 78 parking stalls on a weekend.

6.3 Bicycle Parking

The City of Newark requires short-term and long-term bicycle parking spaces. The required number of short-term bicycle parking spaces are at least five percent of the required vehicle parking stalls. For long-term parking spaces, one space per 50 parking spaces are required if there are less than twenty-five full time employees. Based on these requirements, six short-term and two long-term parking stalls are required. The proposed project will provide six short-term and two long-term parking stalls.

6.3 Queuing and Driveway Analysis

Queuing Analysis at Study Intersections

TJKM conducted a vehicle queuing and storage analysis for all exclusive left turn or right-turn pockets at the study intersections where project traffic is added under Existing plus Project Conditions. The 95th percentile (maximum) queues were analyzed using the HCM 2000 Queue methodology contained in Synchro software. Detailed calculations are included in the LOS appendices corresponding to each analysis scenario. **Table 11** summarizes the 95th percentile queue lengths at the study intersections under Existing and Existing plus Project Conditions scenarios. The proposed project increases this queue length by approximately 7 feet, less than a single car length.

Table 11: 95th Percentile Queues at Turn Pockets Affected by Project Traffic

#	Intersection	Lane Group	Storage Length per Lane	Existing Conditions		Existing plus Project Conditions		Change	
				AM	PM	AM	PM	AM	PM
1	Mowry School Road/Balentine Drive	EBL	120	0	4	0	4	0	0
		WBL	160	30	54	30	54	0	0
		NBL	100	10	15	13	16	3	1
		NBR	100	9	13	9	13	0	0
		SBL	110	7	31	12	36	5	5
		SBR	110	0	0	0	0	0	0
2	Balentine Drive/Stevenson Boulevard	EBL	280	78	187	85	192	7	5
		EBR	190	0	0	0	4	0	4
		WBTL	320	100	**501**	100	**501**	0	0
		WBR	320	28	299	28	306	0	7
		NBL	205	56	91	56	91	0	0
		NBR	215	65	65	65	65	0	0
		SBL	230	**296**	199	**296**	199	0	0
		SBR	305	71	87	73	88	2	1
3	Mowry School Road/Cedar Boulevard	EBL	175	72	40	72	40	0	0
		WBL	90	64	61	64	61	0	0

#	Intersection	Lane Group	Storage Length per Lane	Existing Conditions		Existing plus Project Conditions		Change	
				AM	PM	AM	PM	AM	PM
		NBTL	25	23	11	23	11	0	0
		NBR	25	13	0	13	0	0	0
		SBL	215	16	12	16	12	0	0
		SBR	75	6	10	6	10	0	0
4	Cedar Boulevard/Balentine Drive	EBL	205	**266**	56	**271**	57	5	1
		WBL	185	174	22	174	22	0	0
		NBL	160	134	21	135	21	1	0
		SBL	110	18	27	18	27	0	0
5	Cedar Boulevard/Stevenson Boulevard	EBL	240	187	126	188	126	1	0
		WBTL	25	7	26	7	26	0	0
		WBR	25	0	30	0	30	0	0
		NBL	195	69	**336**	75	**339**	6	3
		SBL	160	70	13	70	13	0	0

Notes: Storage length and 95th percentile queue is expressed in feet per lane, **Bold** indicates overflow

Queuing Analysis at Project Driveway

TJKM conducted a vehicle queuing analysis at the project driveways on Balentine Drive and Mowry School Road. The 95th percentile (maximum) queues were analyzed using the HCM 2000 Queue methodology contained in Synchro software for the project driveways**. Table 12** summarizes the 95th percentile queue lengths at the project driveway under Existing plus Project scenario. Under Existing plus Project Conditions, the 95th percentile queues at the outbound approach of project driveways are expected to be minimal.

Table 12: 95th Percentile Queues at Project Driveways

Intersection	Control	Existing plus Project Conditions	
		AM	PM
		95th Percentile Queue (ft)[1]	95th Percentile Queue (ft)[1]
Balentine Drive/ Project Driveway	One-Way Stop	<25	<25
Mowry School Road/ Project Driveway	One-Way Stop	<25	<25

Notes: [1]Reported values of 95th percentile queues are for the outbound movements at the project driveways

6.4 Pedestrian, Bicycle, and Transit Impacts

6.4.1 Pedestrian Impacts

An impact to pedestrians occurs if the proposed project disrupts existing pedestrian's facilities; or creates inconsistencies with planned pedestrian facilities or adopted pedestrian system plans, guidelines, policies, or standards. The project may produce a moderate amount of pedestrian trips, which would all be accommodated by existing adequate pedestrian facilities. The project is not expected provide any disruptions or inconsistencies with pedestrian facilities or plans. Therefore, the impact to pedestrian facilities is **less-than-significant**.

6.4.2 Bicycle Impacts

An impact to pedestrians occurs if the proposed project disrupts existing bicycle facilities; or creates inconsistencies with planned bicycle facilities or adopted bicycle system plans, guidelines, policies, or standards. The proposed project will have adequate bicycle access to the project site from the surrounding area and is not expected to create any inconsistencies with bicycle facilities or plans. Therefore, the impact to bicycle facilities is **less-than-significant**.

6.4.3 Transit Impacts

A proposed project is considered to have a significant impact on transit if it conflicts with existing or planned transit facilities, or is expected to generate additional transit trips and does not provide adequate facilities for pedestrians and bicyclists to access transit routes and stops. Pedestrians and bicyclists can access the closest transit stops, shown in **Figure 3**, via a continuous path of sidewalks and adequate bicycle facilities. The transit service within the immediate project site operates within capacity, and additional trips generated by the proposed project could be accommodated by existing bus services. Therefore, impacts to transit service are expected to be **less-than-significant**.

7.0 TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation Demand Management (TDM) refers to strategies that result in a more efficient use of transportation resources to help relieve traffic congestion, parking demand, and air pollution problems. Typically, TDM combines different services, facilities, and actions that result in a reduction of single-occupant vehicle trips.

7.1 TDM Measures

There are many TDM measures that can be implemented; however, the following projects would most likely accommodate the deficiency in parking. The implementation of the recommended TDM measures in **Table 13,** would encourage hotel guests to use alternative transportation modes (transit, bicycle and ride sharing) to reduce single occupancy vehicles (SOV) and parking demand, thereby reducing vehicle trips to the project site.

Table 13: TDM Measures

Program Measures	Implementation	Est. VTR Range*
Designated TDM Coordinator	• The project will designate a TDM Contact Person to distribute all TDM information to employees and hotel guests	N/A
New Hire Packets	• The TDM Coordinator will provide a new hire packet with multimodal options for commuting to work. This packet will be updated as needed.	1-3%
Ride Matching Assistance	• Advertise and promote the program to the employees; this can be through 511.org or through commute.org	1-3%
Information Board/Kiosks	• The project will provide display boards for employees and hotel guests on transit information, carpooling, biking and walking	1-3%
Promotional Programs	• The TDM Coordinator will promote TDM events such as Bike to Work Day, Rideshare week and other events to employees and hotel guests	1-3%
Shuttle Program	• The project will coordinate with an independent shuttles service vendor to and from the airport	5-15%
Bicycle Parking	• The project will provide both long and short-term bicycle parking on site.	5-10%
Bike Sharing	• The project will provide 2 bicycles for hotel guests to use during their stay	5-10%
Transit Passes	• The project will provide clipper cards for the life of the project as an incentive to utilize transit.	5-15%

Notes: VTR- Vehicle Trip Reduction

The Vehicle Trip Reduction (VTR) was determined based on the Federal Highway Administration document-*Integrating Demand Management into the Transportation Planning Process: A Desk Reference*, August 2012. Per the referenced report, the combined strategies except for TNC subsidy can yield a VTR of 10 to 15 percent.

TDM Coordinator

A TDM contact person, such as an onsite coordinator or property manager, should provide information to hotel guests on alternative modes of transportation. This TDM coordinator to provide new hotel guest information and will provide:

- Information and resources on transportation choices available to hotel guests and employees.

- Transportation information packets to hotel guests and employees.
- A current welcome packet with commute alternatives, transit maps, schedules, events and promotions. Distribution of hotel guest Welcome Packet.
- Coordinate monitoring with the City of Newark.

New Hire Packet

New employees will be provided transportation information packets that include information about transit routes and schedules, bus stop locations, bike maps, ride matching services, transit planning resources, and on-site bicycle parking and amenities. Additional information, such as how to contact the project's TDM Coordinator for the development, will also be included. The welcome packet will provide a brief summary highlighting the most important features of the TDM program, which allows guests and employees to be familiar with it and understand how to access additional information. It will also include hard-copy information pertaining to alternative transportation options and current transit maps and schedules. This information will be recommended to each hotel guest to share with all employees.

Ridematching Assistance

The Metropolitan Transportation Commission (MTC) 511 program offers the 511 RideMatch (www.ridematch.511.org) service that provides a system to help commuters find carpools, vanpools, or bicycle buddies to share your commute. This free service helps commuters find others with similar routes and travel patterns with whom they can share a ride. Registered users are provided with a listing of other commuters near their employment or residential ZIP code along with the closest cross street, email, phone number, and hours they are available to commute to and from work. The participants can then choose and contact others who they can ride with. RideMatch also provides lists of existing car and vanpools in the area that may have available space.

Information Boards/Kiosks

The designated employer contact will display the following information in a prominent location: transit routes and schedules; carpooling and vanpooling information; bicycle lanes, routes and paths and facility information; and alternative commute subsidy information.

For hotel guests, a display on transportation options will be provided at the concierge and a display area near guest check in.

Promotional Programs

New employee orientation packets on transportation alternatives will encourage employees and guests to try new options, including transit information

Shuttle Service

The proposed project will coordinate with an independent shuttle service to and from all regional airports: Oakland, San Francisco, and San Jose Airports. The project will contract with a shuttle service vendor that will provide on-demand service to and from the hotel from the airport, 24 hours a day. This service already operates airport pick up at local hotels in the area and the request will be to extend the service to this project. The project applicant will not maintain a fleet on-site as the shuttle vendor will deploy shuttles as needed without waiting for a one-shuttle from the hotel to pick up and drop off from the hotel to the three major airports in the bay area. The shuttle information will be provided to guests to reduce the need for parking.

Bicycle Parking

Long-term bicycle parking is defined as a facility that is sheltered and secure, such as lockers, rooms, or stations where the intent is for longer periods, more than two hours. Examples of long term are bicycle lockers, which have a security system, often seen at transit stations, unattended bicycle parking such as storage areas or rooms near transit stations or adjacent to high-density housing, or attended bicycle facilities, where staff is on hand to provide valet services.

Short-term bicycle parking is defined as unsheltered, unenclosed bike racks with an intended parking duration of less than two hours. The majority of public bike racks are considered short-term. These are often seen at shopping centers, parks, and other public facilities.

Per the City of Newark requirement, the project provides six short-term and two long-term bicycle parking stalls.

Transit Passes

Transit passes will be provided for employees to use for the life of the project. Fees vary for day, month, and an annual pass. The Clipper card provides services to multiple transit agencies throughout the region. The car consolidates transit passes, cash value or any combination into one card. Value to the card can be auto loaded. The fee per card is $3.00 plus the amount loaded to use transit. Employees can order cards in bulk. The clipper cards will be preload in the amount of $50.00 to try transit.

Transportation Network Companies (TNC)

There are limited studies on TNCs to reduce trips or VMT, however, the potential to reduce the need for parking stalls by less car ownership is possible. In recent studies found and discussed in Section 5.2 Parking Analysis, approximately eighteen percent of trips to and from the airport use TNCs. Though not factored as a vehicle trip or parking reduction, a drop off / pick up location will be provided on-site.

7.2 Implementation and Monitoring

The project applicant must submit this TDM Plan to the City of Newark for review as part of the conditional use permit process. The project applicant will be responsible for ensuring the trip reduction measures are implemented. A TDM Coordinator will be responsible for providing the information to each hotel guest, ensuring the measures are implement and they participate in monitoring and reporting.

The TDM Plan will need to be re-evaluated annually for the life of the project. It is recommended the designated TDM coordinator consult with City staff to ensure the monitoring and reporting meets the City's expectations. Monitoring can include a parking survey, Annual Mode Share Survey, and Annual Monitoring.

A parking demand survey, taken during general hotel guest operating hours, will provide a snapshot if the reduced parking supply is adequate to support the businesses. Hourly parking counts within the project site and on-street parking will provide a parking occupancy rate.

The Annual Mode Share survey will provide qualitative data of employees' travel to and from work, trip length, and perception of the different travel modes to work. This will also provide feedback on the effectiveness of the TDM measures that were implement and will allow the TDM coordinator to adjust the measures that will prove more successful.

7.3 Annual Monitoring Report

The property manager should submit annual monitoring reports to the City of Newark for an agreed amount of time, for the life of the project with the following information:

- Findings of the parking demand counts and mode share surveys,
- Effectiveness of individual TDM program components from the annual mode share survey.
- A description of the TDM programs and services that were offered to guests in the preceding year, with an explanation of any changes or new programs offered or planned.

CONCLUSIONS AND RECOMMENDATIONS

Project Trip Generation

The proposed hotel development project is expected to generate 714 additional daily trips than existing development, of which 62 trips are generated during the a.m. peak hour and 37 trips are generated during the p.m. peak hour.

Existing Conditions

Under this scenario, seven of the study intersections operate at an acceptable LOS D or better during both a.m. and p.m. peak hours.

Existing plus Project Conditions

Under this scenario, all of the study intersections operating at acceptable LOS D or better under Existing Conditions continue to do so. Based on the City of Newark and Fremont thresholds impact criteria, the project is expected to have less-than-significant impacts at all the study intersections under Existing plus Project Conditions.

Vehicle Miles Traveled (VMT)

VMT by hotel guest and employees are anticipated to be less than significant

Site Access and On-Site Circulation

Access to the proposed project would be via driveway on Balentine Drive and Mowry School Road. Bicycle and pedestrian access are acceptable, including sidewalks, signalized pedestrian crossings, and bicycle lanes, sharrows, and bicycle boulevards leading to the project site. Site access and circulation are **adequate**.

Parking

The project site plan (dated September 8, 2022) shows a supply of 96 parking stalls, including six accessible stalls. Project also provides six short-term bicycle parking stalls and two long-term bicycle parking stalls. The City of Newark Municipal Code (Section 17.23.040/Table 17.23.040) requires one space for each guest room or every two beds, whichever is greater, which is equivalent to 132 parking stalls. Based on hotel occupancy, survey data, and Newark hotel occupancy, the proposed parking supply is expected to be significantly lower than the actual parking required. However, the proposed project will provide hotel shuttle services for the guests, bicycle parking and implement a Transportation Demand Management Plan to alleviate the parking demand.

Queuing and Driveway Analysis

The proposed project does not create a significant impact to the expected left-turn or right-turn queues at the study intersections. The project driveways are expected to operate at an acceptable LOS and the 95th percentile queueing at the outbound approach of the project driveways is expected to be minimal.

Pedestrian, Bicycle and Transit Impacts

The proposed project does not conflict with existing and planned pedestrian or bicycle facilities, and will add very few trips to existing transit facilities, which the existing transit capacity can accommodate. Therefore, the impact to pedestrian, bicycle, and transit facilities is **less-than-significant.**

Transportation Demand Management Plan

The Transportation Demand Management Plan will reduce the number of trips to the project site for hotel visitors and employees. Additionally, the measures will also meet the needs of the recommended parking reduction.

Appendix A – Level of Service Methodology

LEVEL OF SERVICE METHODOLOGY

LEVEL OF SERVICE

The description and procedures for calculating capacity and level of service are found in Transportation Research Board, *Highway Capacity Manual 2000*. *Highway Capacity Manual 2000* represents the latest research on capacity and quality of service for transportation facilities.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with level-of-service A representing the best operating conditions and level-of-service F the worst. Each level of service represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish service levels.

A general description of service levels for various types of facilities is shown in Table A-I.

Table A-I

Level of Service Description

Facility Type	**Uninterrupted Flow**	**Interrupted Flow**
	Freeways Multi-lane Highways Two-lane Highways Urban Streets	Signalized Intersections Unsignalized Intersections Two-way Stop Control All-way Stop Control
LOS		
A	Free-flow	Very low delay.
B	Stable flow. Presence of other users noticeable.	Low delay.
C	Stable flow. Comfort and convenience starts to decline.	Acceptable delay.
D	High density stable flow.	Tolerable delay.
E	Unstable flow.	Limit of acceptable delay.
F	Forced or breakdown flow.	Unacceptable delay

Source: *Highway Capacity Manual 2000*

Urban Streets

The term “urban streets” refers to urban arterials and collectors, including those in downtown areas.

Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials.

Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials, and unlike arterials their operation is not always dominated by traffic signals.

Downtown streets are signalized facilities that often resemble arterials. They not only move through traffic but also provide access to local businesses for passenger cars, transit buses, and trucks. Pedestrian conflicts and lane obstructions created by stopping or standing buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control. As a result, these factors also affect quality of service.

The street environment includes the geometric characteristics of the facility, the character of roadside activity and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway density, spacing between signalized intersections, existence of parking, level of pedestrian activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic control (including signals and signs) forces a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds, however, such controls are needed to establish right-of-way.

The average travel speed for through vehicles along an urban street is the determinant of the operating level of service. The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

Level-of-service A describes primarily free-flow operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.

Level-of-service B describes reasonably unimpeded operations. The ability to maneuver within the traffic stream is only slightly restricted, and control delays at signalized intersections are not significant.

Level-of-service C describes stable operations, however, ability to maneuver and change lanes in midblock location may be more restricted than at level-of-service B. Longer queues, adverse signal coordination, or both may contribute to lower travel speeds.

Level-of-service D borders on a range in which in which small increases in flow may cause substantial increases in delay and decreases in travel speed. Level-of-service D may be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors.

Level-of-service E is characterized by significant delays and lower travel speeds. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.

Level-of-service F is characterized by urban street flow at extremely low speeds. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.

The methodology to determine level of service stratifies urban streets into four classifications. The classifications are complex, and are related to functional and design categories. Table A-II describes the functional and design categories, while Table A-III relates these to the urban street classification.

Once classified, the urban street is divided into segments for analysis. An urban street segment is a one-way section of street encompassing a series of blocks or links terminating at a signalized intersection. Adjacent segments of urban streets may be combined to form larger street sections, provided that the segments have similar demand flows and characteristics.

Levels of service are related to the average travel speed of vehicles along the urban street segment or section.

Travel times for existing conditions are obtained by field measurements. The maximum-car technique is used. The vehicle is driven at the posted speed limit unless impeded by actual traffic conditions. In the maximum-car technique, a safe level of vehicular operation is maintained by observing proper following distances and by changing speeds at reasonable rates of acceleration and deceleration. The maximum-car technique provides the best base for measuring traffic performance.

An observer records the travel time and locations and duration of delay. The beginning and ending points are the centers of intersections. Delays include times waiting in queues at signalized intersections. The travel speed is determined by dividing the length of the segment by the travel time. Once the travel speed on the arterial is determined, the level of service is found by comparing the speed to the criteria in Table A-IV. Level-of-service criteria vary for the different classifications of urban street, reflecting differences in driver expectations.

Table A-II

Functional and Design Categories for Urban Streets

Criterion	Functional Category: Principal Arterial	Functional Category: Minor Arterial
Mobility function	Very important	Important
Access function	Very minor	Substantial
Points connected	Freeways, important activity centers, major traffic generators	Principal arterials
Predominant trips served	Relatively long trips between major points and through trips entering, leaving, and passing through city	Trips of moderate length within relatively small geographical areas

Criterion	Design Category: High-Speed	Suburban	Intermediate	Urban
Driveway access density	Very low density	Low density	Moderate density	High density
Arterial type	Multilane divided; undivided or two-lane with shoulders	Multilane divided: undivided or two-lane with shoulders	Multilane divided or undivided; one way, two lane	Undivided one way; two way, two or more lanes
Parking	No	No	Some	Usually
Separate left-turn lanes	Yes	Yes	Usually	Some
Signals per mile	0.5 to 2	1 to 5	4 to 10	6 to 12
Speed limits	45 to 55 mph	40 to 45 mph	30 to 40 mph	25 to 35 mph
Pedestrian activity	Very little	Little	Some	Usually
Roadside development	Low density	Low to medium density	Medium to moderate density	High density

Source: *Highway Capacity Manual 2000*

Table A-III

Urban Street Class based on Function and Design Categories

Design Category	Functional Category: Principal Arterial	Functional Category: Minor Arterial
High-Speed	I	Not applicable
Suburban	II	II
Intermediate	II	III or IV
Urban	III or IV	IV

Source: *Highway Capacity Manual 2000*

Table A-IV

Urban Street Levels of Service by Class

Urban Street Class	**I**	**II**	**III**	**IV**
Range of Free Flow Speeds (mph)	45 to 55	35 to 45	30 to 35	25 to 35
Typical Free Flow Speed (mph)	50	40	33	30
Level of Service	**Average Travel Speed (mph)**			
A	>42	>35	>30	>25
B	>34	>28	>24	>19
C	>27	>22	>18	>13
D	>21	>17	>14	>9
E	>16	>13	>10	>7
F	≤16	≤13	≤10	≤7

Source: *Highway Capacity Manual 2000*

Interrupted Flow

One of the more important elements limiting, and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop and yield signs. These all operate quite differently and have differing impacts on overall flow.

Signalized Intersections

The capacity of a highway is related primarily to the geometric characteristics of the facility, as well as to the composition of the traffic stream on the facility. Geometrics are a fixed, or non-varying, characteristic of a facility.

At the signalized intersection, an additional element is introduced into the concept of capacity: time allocation. A traffic signal essentially allocates time among conflicting traffic movements seeking use of the same physical space. The way in which time is allocated has a significant impact on the operation of the intersection and on the capacity of the intersection and its approaches.

Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, *i. e.,* in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, level of service criteria for traffic signals are stated in terms of average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the ratio of green time to cycle length and the volume to capacity ratio for the lane group.

For each intersection analyzed the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. A level of service designation is given to the control delay to better describe the level of operation. A description of levels of service for signalized intersections can be found in Table A-V.

Table A-V

Description of Level of Service for Signalized Intersections

Level of Service	Description
A	Very low control delay, up to 10 seconds per vehicle. Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop causing higher levels of delay.
C	Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase doe not serve queued vehicles, and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestions becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.

Source: *Highway Capacity Manual 2000*

The use of control delay, which may also be referred to as signal delay, was introduced in the 1997 update to the *Highway Capacity Manual*, and represents a departure from previous updates. In the third edition, published in 1985 and the 1994 update to the third edition, delay only included stopped delay. Thus, the level of service criteria listed in Table A-V differs from earlier criteria.

Unsignalized Intersections

The current procedures on unsignalized intersections were first introduced in the 1997 update to the *Highway Capacity Manual* and represent a revision of the methodology published in the 1994 update to the 1985 *Highway Capacity Manual*. The revised procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, *i. e.,* in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

Two-Way Stop Controlled Intersections

Two-way stop controlled intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At two-way stop-controlled intersections the stop-controlled approaches are referred as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A level of service designation is given to the expected control delay for each minor movement. Level of service is not defined for the intersection as a whole. Control delay is the increased time of travel for a vehicle approaching and passing through a stop-controlled intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection. A description of levels of service for two-way stop-controlled intersections is found in Table A-VI.

Table A-VI

Description of Level of Service for Two-Way Stop Controlled Intersections

Level of Service	Description
A	Very low control delay less than 10 seconds per vehicle for each movement subject to delay.
B	Low control delay greater than 10 and up to 15 seconds per vehicle for each movement subject to delay.
C	Acceptable control delay greater than 15 and up to 25 seconds per vehicle for each movement subject to delay.
D	Tolerable control delay greater than 25 and up to 35 seconds per vehicle for each movement subject to delay.
E	Limit of tolerable control delay greater than 35 and up to 50 seconds per vehicle for each movement subject to delay.
F	Unacceptable control delay in excess of 50 seconds per vehicle for each movement subject to delay.

Source: *Highway Capacity Manual 2000*

Appendix B – Traffic Count Worksheets

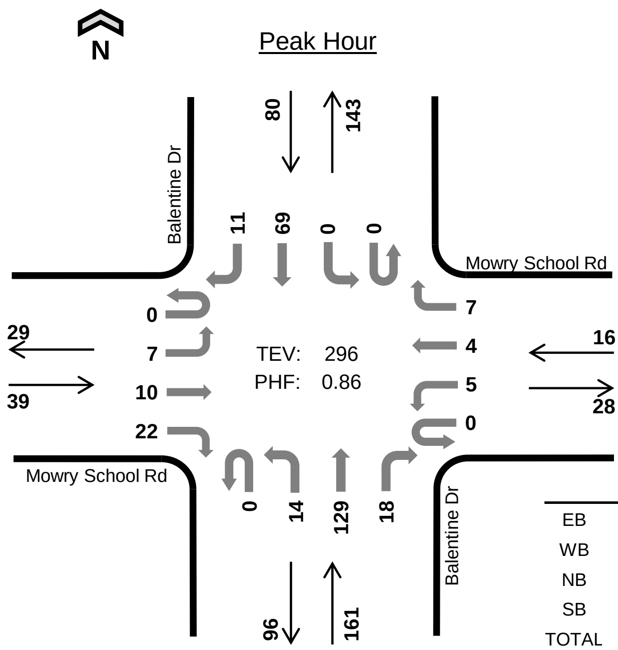
Intersection Turning Movement Counts Calculations

#	Intersection	Traffic Counts (Year)	Peak Hour	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Calculated Growth Factor (B/W 2018 &2020 and 2015&2020)	Details
1	Mowry School Road/Balentine Drive	2020	AM	7	10	22	5	4	7	0	69	11	14	129	18	296		
				2%	3%	7%	2%	1%	2%	0%	23%	4%	5%	44%	6%			
			PM	12	5	47	37	4	3	1	241	20	37	212	11	630		
				2%	1%	7%	6%	1%	0%	0%	38%	3%	6%	34%	2%			
		Projected 2020 Counts	**AM**	**13**	**18**	**40**	**9**	**7**	**13**	**0**	**126**	**20**	**25**	**235**	**33**	**539**	**1.82**	**Used these volumes in analysis**
			PM	**17**	**7**	**65**	**51**	**6**	**4**	**1**	**335**	**28**	**51**	**295**	**15**	**876**	**1.39**	
2	Balentine Drive/Stevenson Boulevard	2020	AM	10	370	66	224	676	181	127	25	16	22	9	91	1817	**1.82**	
			PM	24	850	92	212	528	220	276	32	24	103	37	384	2782	**1.39**	
		2018	**AM**	**28**	**627**	**228**	**391**	**1094**	**432**	**187**	**91**	**30**	**47**	**15**	**132**	**3302**		**Used these volumes in analysis**
			PM	**50**	**1055**	**109**	**254**	**597**	**369**	**436**	**69**	**42**	**161**	**137**	**583**	**3862**		
3	Mowry School Road/Cedar Boulevard	2020	AM	4	4	15	5	1	12	21	191	4	18	89	9	373		
				1%	1%	4%	1%	0%	3%	6%	51%	1%	5%	24%	2%			
			PM	7	2	13	12	17	49	27	261	15	51	305	24	783		
				1%	0%	2%	2%	2%	6%	3%	33%	2%	7%	39%	3%			
		Projected 2020 Counts	**AM**	**13**	**13**	**48**	**16**	**3**	**38**	**67**	**611**	**13**	**58**	**285**	**29**	**1194**	**3.20**	**Used these volumes in analysis**
			PM	**8**	**2**	**15**	**13**	**19**	**55**	**30**	**292**	**17**	**57**	**342**	**27**	**877**	**1.12**	
4	Cedar Boulevard/Balentine Drive	2020	AM	3	0	0	10	0	21	34	157	2	7	99	26	**359**	**3.20**	
			PM	7	0	6	6	0	50	21	255	4	7	312	25	**693**	**1.12**	
		2015	**AM**	**113**	**10**	**101**	**6**	**18**	**22**	**192**	**352**	**19**	**123**	**169**	**25**	**1150**		**Used these volumes in analysis**
			PM	**15**	**2**	**10**	**19**	**1**	**62**	**51**	**267**	**4**	**12**	**294**	**42**	**779**		
5	Cedar Boulevard/Stevenson Boulevard	2020	AM	47	284	2	41	608	62	130	1	68	0	0	3	1246	**1.79**	
			PM	150	712	1	59	367	189	177	1	76	1	5	7	1745	**1.31**	
		2018	**AM**	**49**	**449**	**8**	**50**	**939**	**116**	**375**	**12**	**233**	**1**	**1**	**2**	**2235**		**Used these volumes in analysis**
			PM	**253**	**862**	**2**	**4**	**392**	**316**	**260**	**4**	**110**	**3**	**10**	**72**	**2288**		

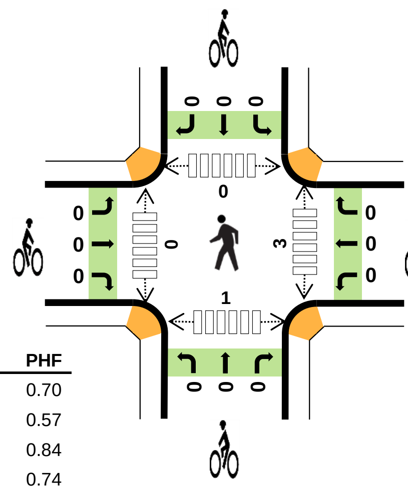
Balentine Dr
Mowry School Rd

Date: 10/08/2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour



	HV %:	PHF
EB	7.7%	0.70
WB	0.0%	0.57
NB	3.1%	0.84
SB	5.0%	0.74
TOTAL	4.1%	0.86



Two-Hour Count Summaries

Interval Start	Mowry School Rd Eastbound UT	LT	TH	RT	Mowry School Rd Westbound UT	LT	TH	RT	Balentine Dr Northbound UT	LT	TH	RT	Balentine Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	1	0	4	0	0	0	0	0	0	14	6	0	0	6	1	32	0
7:15 AM	0	2	0	6	0	1	0	0	0	2	21	3	0	0	5	1	41	0
7:30 AM	0	0	1	7	0	3	1	0	0	1	20	6	0	0	10	0	49	0
7:45 AM	0	1	2	9	0	2	0	3	0	1	36	11	0	1	16	1	83	205
8:00 AM	**0**	**1**	**3**	**2**	**0**	**1**	**1**	**1**	**0**	**3**	**27**	**7**	**0**	**0**	**14**	**1**	**61**	234
8:15 AM	**0**	**1**	**3**	**10**	**0**	**0**	**1**	**0**	**0**	**2**	**27**	**3**	**0**	**0**	**12**	**5**	**64**	257
8:30 AM	**0**	**4**	**0**	**5**	**0**	**2**	**2**	**3**	**0**	**5**	**38**	**5**	**0**	**0**	**20**	**1**	**85**	293
8:45 AM	**0**	**1**	**4**	**5**	**0**	**2**	**0**	**3**	**0**	**4**	**37**	**3**	**0**	**0**	**23**	**4**	**86**	**296**
Count Total	0	11	13	48	0	11	5	10	0	18	220	44	0	1	106	14	501	0
Peak Hour All	**0**	**7**	**10**	**22**	**0**	**5**	**4**	**7**	**0**	**14**	**129**	**18**	**0**	**0**	**69**	**11**	**296**	**0**
Peak Hour HV	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**4**	**0**	**12**	**0**
Peak Hour HV%	**-**	**0%**	**10%**	**9%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**4%**	**0%**	**-**	**-**	**6%**	**0%**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	0	3	0	*3*	0	0	0	0	*0*	1	0	0	0	*1*
7:15 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	2	0	0	0	*2*	0	0	0	0	*0*	0	2	0	0	*2*
7:45 AM	2	0	1	0	*3*	0	0	0	0	*0*	1	1	0	0	*2*
8:00 AM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**1**	**0**	**0**	**2**	***3***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**1**	*3*
8:30 AM	**0**	**0**	**1**	**2**	***3***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
8:45 AM	**2**	**0**	**2**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
Count Total	7	1	9	4	*21*	0	0	0	0	*0*	5	3	0	1	*9*
Peak Hour	**3**	**0**	**5**	**4**	***12***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**0**	**1**	***4***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Mowry School Rd				Mowry School Rd				Balentine Dr				Balentine Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0
7:45 AM	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	3	9
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	8
8:15 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	10
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**3**	11
8:45 AM	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**4**	**12**
Count Total	0	0	1	6	0	1	0	0	0	0	7	2	0	0	4	0	21	0
Peak Hour	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**4**	**0**	**12**	**0**

Two-Hour Count Summaries - Bikes

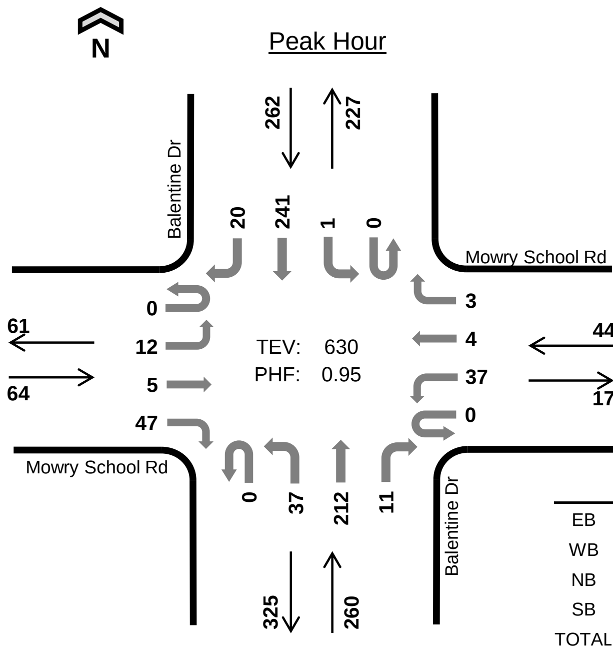
Interval Start	Mowry School Rd			Mowry School Rd			Balentine Dr			Balentine Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	**0**	**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**	0
8:30 AM	**0**	**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**	**0**
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

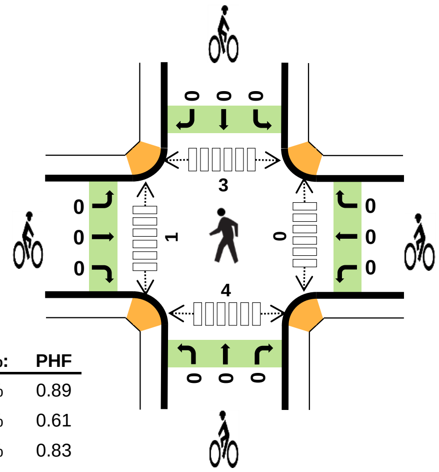
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Balentine Dr
Mowry School Rd

Date: 10/08/2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Peak Hour





	HV %:	PHF
EB	7.8%	0.89
WB	2.3%	0.61
NB	2.3%	0.83
SB	0.4%	0.91
TOTAL	2.1%	0.95

Two-Hour Count Summaries

Interval Start		Mowry School Rd Eastbound				Mowry School Rd Westbound				Balentine Dr Northbound				Balentine Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	4	0	7	0	7	0	0	0	6	59	2	0	0	44	3	132	0
4:15 PM		0	4	2	3	0	6	2	1	0	8	66	5	0	0	42	3	142	0
4:30 PM		0	4	1	11	0	12	0	1	0	5	49	5	0	0	54	3	145	0
4:45 PM		0	3	1	14	0	4	1	1	0	9	49	2	0	0	64	8	156	575
5:00 PM		0	4	2	12	0	15	2	1	0	6	55	2	0	0	61	4	164	607
5:15 PM		0	1	1	10	0	6	1	0	0	17	59	2	0	1	62	5	165	630
5:30 PM		0	0	2	6	0	4	0	0	0	14	51	4	0	0	47	6	134	619
5:45 PM		0	1	1	8	0	8	1	0	0	11	54	0	0	0	46	1	131	594
Count Total		0	21	10	71	0	62	7	4	0	76	442	22	0	1	420	33	1,169	0
Peak Hour	All	0	12	5	47	0	37	4	3	0	37	212	11	0	1	241	20	630	0
	HV	0	1	1	3	0	0	1	0	0	1	5	0	0	0	1	0	13	0
	HV%	-	8%	20%	6%	-	0%	25%	0%	-	3%	2%	0%	-	0%	0%	0%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	1	2	*4*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	3	0	1	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	1	0	0	*1*
5:00 PM	1	0	4	1	*6*	0	0	0	0	*0*	0	0	2	0	*2*
5:15 PM	1	0	1	0	*2*	0	0	0	0	*0*	0	0	1	4	*5*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	5	3	8	3	*19*	0	0	0	0	*0*	0	1	3	4	*8*
Peak Hour	5	1	6	1	*13*	0	0	0	0	*0*	0	1	3	4	*8*

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Mowry School Rd				Mowry School Rd				Balentine Dr				Balentine Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	4	0
4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	10
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**6**	12
5:15 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**13**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	9
Count Total	0	1	1	3	0	2	1	0	0	1	7	0	0	0	3	0	19	0
Peak Hour	**0**	**1**	**1**	**3**	**0**	**0**	**1**	**0**	**0**	**1**	**5**	**0**	**0**	**0**	**1**	**0**	**13**	**0**

Two-Hour Count Summaries - Bikes

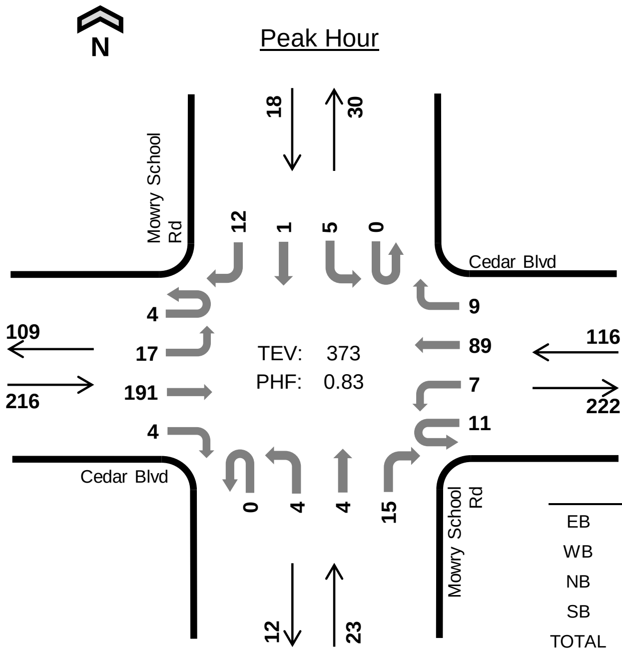
Interval Start	Mowry School Rd			Mowry School Rd			Balentine Dr			Balentine Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**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**	0
5:00 PM	**0**	**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**	**0**
5:30 PM	0	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	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

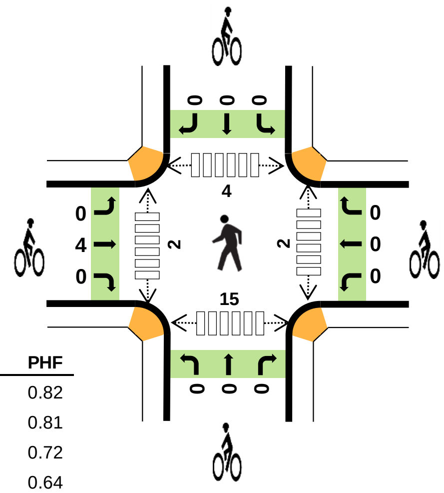
Mowry School Rd
Cedar Blvd

Date: 09-17-2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour



	HV %:	PHF
EB	1.4%	0.82
WB	6.9%	0.81
NB	0.0%	0.72
SB	5.6%	0.64
TOTAL	3.2%	0.83



Two-Hour Count Summaries

Interval Start	Cedar Blvd Eastbound UT	LT	TH	RT	Cedar Blvd Westbound UT	LT	TH	RT	Mowry School Rd Northbound UT	LT	TH	RT	Mowry School Rd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	33	0	1	0	12	0	0	2	1	2	0	1	0	0	52	0
7:15 AM	0	2	33	3	2	1	19	3	0	2	1	2	0	2	1	0	71	0
7:30 AM	1	3	56	0	5	2	17	0	0	0	1	2	0	0	0	2	89	0
7:45 AM	0	5	56	2	2	0	23	2	0	2	0	5	0	2	0	1	100	312
8:00 AM	**1**	**1**	**52**	**0**	**2**	**2**	**15**	**2**	**0**	**2**	**1**	**4**	**0**	**2**	**0**	**4**	**88**	348
8:15 AM	**1**	**1**	**34**	**1**	**2**	**0**	**18**	**3**	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**2**	**67**	344
8:30 AM	**1**	**6**	**52**	**0**	**4**	**3**	**28**	**1**	**0**	**1**	**3**	**4**	**0**	**1**	**0**	**1**	**105**	360
8:45 AM	**1**	**9**	**53**	**3**	**3**	**2**	**28**	**3**	**0**	**1**	**0**	**3**	**0**	**1**	**1**	**5**	**113**	**373**
Count Total	5	27	369	9	21	10	160	14	0	10	7	26	0	10	2	15	685	0
Peak Hour All	**4**	**17**	**191**	**4**	**11**	**7**	**89**	**9**	**0**	**4**	**4**	**15**	**0**	**5**	**1**	**12**	**373**	**0**
Peak Hour HV	**0**	**1**	**2**	**0**	**1**	**1**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**12**	**0**
Peak Hour HV%	**0%**	**6%**	**1%**	**0%**	**9%**	**14%**	**4%**	**22%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**8%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	2	2	0	0	*4*	1	0	0	0	*1*	0	0	2	1	*3*
7:15 AM	4	2	1	3	*10*	1	0	0	0	*1*	2	0	0	5	*7*
7:30 AM	1	1	0	0	*2*	0	0	0	0	*0*	0	1	1	3	*5*
7:45 AM	0	2	1	0	*3*	0	0	0	0	*0*	1	0	0	2	*3*
8:00 AM	**1**	**2**	**0**	**0**	***3***	**3**	**0**	**0**	**0**	***3***	**1**	**0**	**0**	**6**	*7*
8:15 AM	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**1**	**4**	*5*
8:30 AM	**1**	**3**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**2**	**3**	*6*
8:45 AM	**1**	**2**	**0**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**1**	**2**	***5***
Count Total	10	15	2	4	*31*	6	0	0	0	*6*	5	3	7	26	*41*
Peak Hour	**3**	**8**	**0**	**1**	***12***	**4**	**0**	**0**	**0**	***4***	**2**	**2**	**4**	**15**	***23***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Cedar Blvd				Cedar Blvd				Mowry School Rd				Mowry School Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
7:15 AM	0	1	2	1	0	0	2	0	0	0	0	1	0	2	1	0	10	0
7:30 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	3	19
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	18
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	9
8:30 AM	**0**	**1**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	11
8:45 AM	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**12**
Count Total	0	2	7	1	1	1	11	2	0	1	0	1	0	2	1	1	31	0
Peak Hour	**0**	**1**	**2**	**0**	**1**	**1**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**12**	**0**

Two-Hour Count Summaries - Bikes

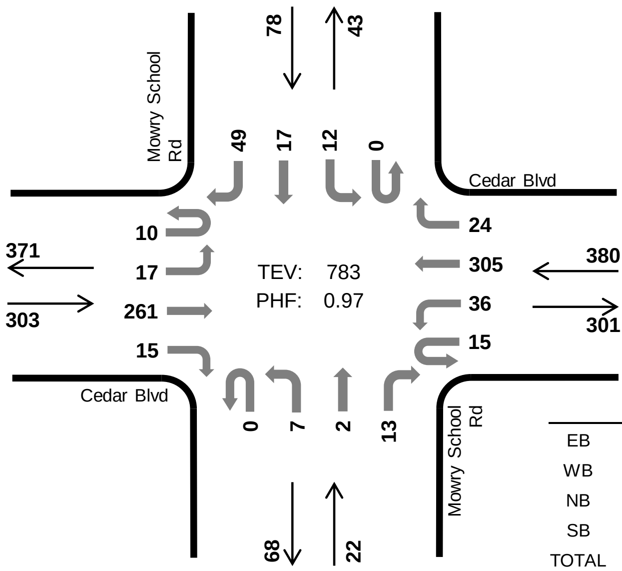
Interval Start	Cedar Blvd			Cedar Blvd			Mowry School Rd			Mowry School Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	4
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
Count Total	0	6	0	0	0	0	0	0	0	0	0	0	6	0
Peak Hour	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

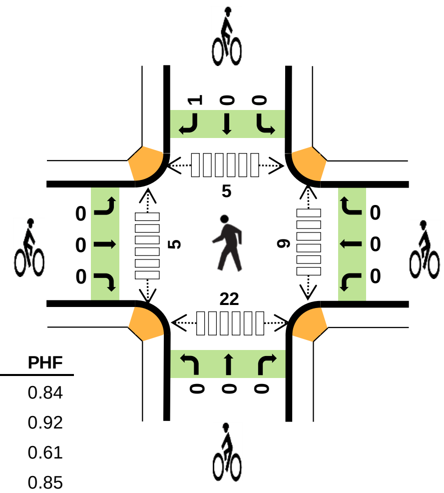
Mowry School Rd
Cedar Blvd

Date: 09-17-2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Peak Hour



	HV %:	PHF
EB	1.3%	0.84
WB	2.6%	0.92
NB	0.0%	0.61
SB	2.6%	0.85
TOTAL	2.0%	0.97



Two-Hour Count Summaries

Interval Start	Cedar Blvd Eastbound UT	LT	TH	RT	Cedar Blvd Westbound UT	LT	TH	RT	Mowry School Rd Northbound UT	LT	TH	RT	Mowry School Rd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	3	3	63	4	1	3	60	5	1	4	1	1	0	4	4	8	165	0
4:15 PM	4	4	57	4	4	5	67	3	0	2	0	3	0	4	1	13	171	0
4:30 PM	1	8	64	3	8	4	64	6	1	5	1	4	0	1	1	8	179	0
4:45 PM	4	7	60	4	3	6	66	5	0	0	0	3	0	2	2	10	172	687
5:00 PM	**4**	**1**	**62**	**4**	**3**	**7**	**80**	**9**	**0**	**2**	**1**	**6**	**0**	**5**	**2**	**14**	**200**	722
5:15 PM	**1**	**4**	**54**	**3**	**0**	**10**	**84**	**9**	**0**	**4**	**0**	**5**	**0**	**2**	**8**	**13**	**197**	748
5:30 PM	**2**	**6**	**78**	**4**	**5**	**8**	**79**	**3**	**0**	**1**	**0**	**0**	**0**	**5**	**2**	**8**	**201**	770
5:45 PM	**3**	**6**	**67**	**4**	**7**	**11**	**62**	**3**	**0**	**0**	**1**	**2**	**0**	**0**	**5**	**14**	**185**	**783**
Count Total	22	39	505	30	31	54	562	43	2	18	4	24	0	23	25	88	1,470	0
Peak Hour All	**10**	**17**	**261**	**15**	**15**	**36**	**305**	**24**	**0**	**7**	**2**	**13**	**0**	**12**	**17**	**49**	**783**	**0**
Peak Hour HV	**0**	**1**	**3**	**0**	**0**	**0**	**9**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**16**	**0**
Peak Hour HV%	**0%**	**6%**	**1%**	**0%**	**0%**	**0%**	**3%**	**4%**	**-**	**0%**	**0%**	**0%**	**-**	**17%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	2	*2*
4:15 PM	2	0	0	0	*2*	0	0	0	0	*0*	2	0	2	3	*7*
4:30 PM	0	5	0	0	*5*	0	0	0	1	*1*	2	0	2	4	*8*
4:45 PM	0	1	0	1	*2*	0	0	0	0	*0*	2	5	2	11	*20*
5:00 PM	**0**	**5**	**0**	**1**	***6***	**0**	**0**	**0**	**1**	***1***	**1**	**0**	**2**	**2**	*5*
5:15 PM	**2**	**3**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**3**	**2**	**1**	**4**	*10*
5:30 PM	**2**	**2**	**0**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**1**	**8**	*10*
5:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**5**	**2**	**1**	**8**	***16***
Count Total	6	16	0	3	*25*	0	0	0	2	*2*	15	10	11	42	*78*
Peak Hour	**4**	**10**	**0**	**2**	***16***	**0**	**0**	**0**	**1**	***1***	**9**	**5**	**5**	**22**	***41***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Cedar Blvd				Cedar Blvd				Mowry School Rd				Mowry School Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	5	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2	9
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**6**	15
5:15 PM	**0**	**0**	**2**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	18
5:30 PM	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	18
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**
Count Total	0	1	5	0	0	0	14	2	0	0	0	0	0	3	0	0	25	0
Peak Hour	**0**	**1**	**3**	**0**	**0**	**0**	**9**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**16**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Cedar Blvd			Cedar Blvd			Mowry School Rd			Mowry School Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	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	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
Count Total	0	0	0	0	0	0	0	0	0	0	0	2	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**

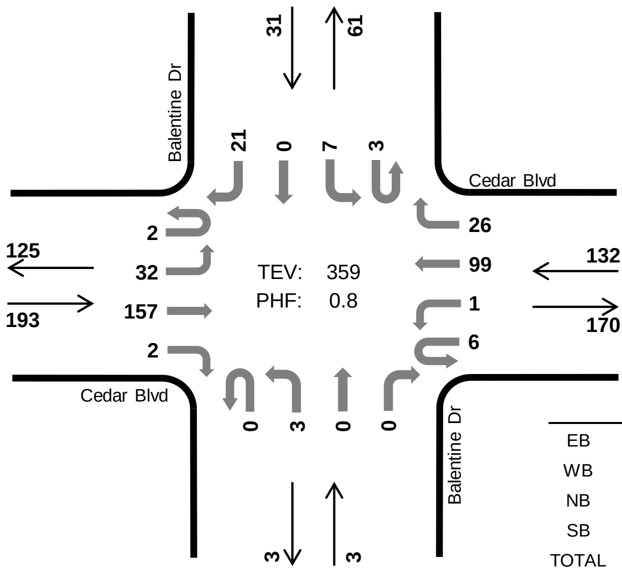
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Balentine Dr
Cedar Blvd

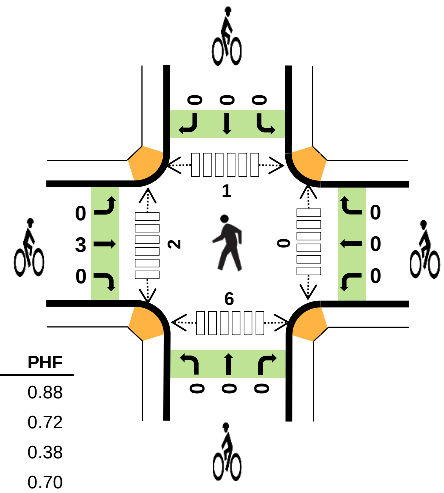
Date: 09-17-2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

N

Peak Hour



	HV %:	PHF
EB	2.1%	0.88
WB	3.8%	0.72
NB	0.0%	0.38
SB	6.5%	0.70
TOTAL	3.1%	0.80



Two-Hour Count Summaries

Interval Start	Cedar Blvd Eastbound UT	LT	TH	RT	Cedar Blvd Westbound UT	LT	TH	RT	Balentine Dr Northbound UT	LT	TH	RT	Balentine Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	4	22	0	0	1	15	1	0	0	0	0	0	2	0	4	49	0
7:15 AM	0	9	32	2	2	0	21	1	0	3	0	0	0	0	0	4	74	0
7:30 AM	0	7	34	3	4	0	18	3	0	1	0	2	0	2	0	3	77	0
7:45 AM	0	7	48	0	2	0	20	7	0	1	1	1	1	1	1	3	93	293
8:00 AM	**0**	**9**	**38**	**0**	**0**	**0**	**26**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**6**	**83**	327
8:15 AM	**1**	**5**	**28**	**2**	**0**	**0**	**16**	**5**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**4**	**64**	317
8:30 AM	**0**	**10**	**45**	**0**	**2**	**0**	**26**	**8**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**6**	**100**	340
8:45 AM	**1**	**8**	**46**	**0**	**4**	**1**	**31**	**10**	**0**	**0**	**0**	**0**	**2**	**4**	**0**	**5**	**112**	**359**
Count Total	2	59	293	7	14	2	173	38	0	8	1	3	4	12	1	35	652	0
Peak Hour All	**2**	**32**	**157**	**2**	**6**	**1**	**99**	**26**	**0**	**3**	**0**	**0**	**3**	**7**	**0**	**21**	**359**	**0**
Peak Hour HV	**0**	**2**	**2**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**11**	**0**
Peak Hour HV%	**0%**	**6%**	**1%**	**0%**	**0%**	**0%**	**5%**	**0%**	**-**	**0%**	**-**	**-**	**0%**	**0%**	**-**	**10%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	2	1	0	0	*3*	1	0	0	0	*1*	0	0	0	0	*0*
7:15 AM	2	3	0	0	*5*	0	1	0	0	*1*	0	0	0	0	*0*
7:30 AM	1	2	0	0	*3*	1	0	0	0	*1*	4	0	1	0	*5*
7:45 AM	0	3	0	0	*3*	0	0	0	0	*0*	0	0	1	2	*3*
8:00 AM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	*2*
8:15 AM	**0**	**0**	**0**	**1**	***1***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**1**	**3**	*4*
8:30 AM	**1**	**2**	**0**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**1**	*2*
8:45 AM	**2**	**2**	**0**	**0**	***4***	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	*1*
Count Total	9	14	0	2	*25*	5	1	0	0	*6*	4	2	3	8	*17*
Peak Hour	**4**	**5**	**0**	**2**	***11***	**3**	**0**	**0**	**0**	***3***	**0**	**2**	**1**	**6**	***9***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Cedar Blvd				Cedar Blvd				Balentine Dr				Balentine Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0
7:15 AM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	5	0
7:30 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
7:45 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	14
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	13
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	9
8:30 AM	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	10
8:45 AM	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**11**
Count Total	0	2	7	0	0	0	14	0	0	0	0	0	0	0	0	2	25	0
Peak Hour	**0**	**2**	**2**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**11**	**0**

Two-Hour Count Summaries - Bikes

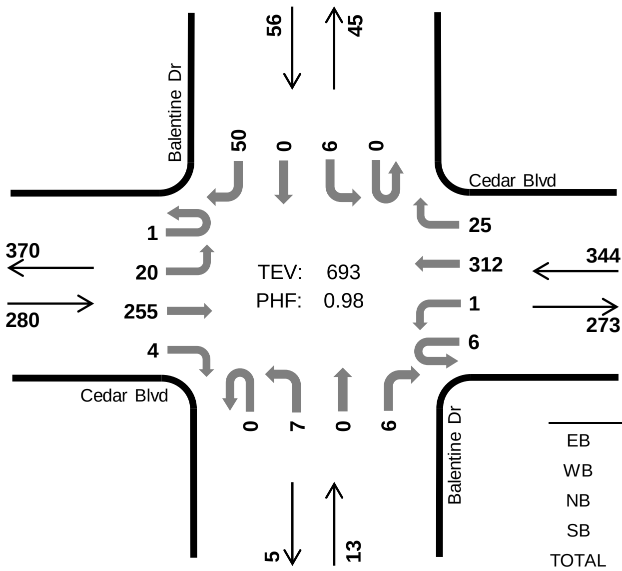
Interval Start	Cedar Blvd			Cedar Blvd			Balentine Dr			Balentine Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:15 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	3
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**
Count Total	0	5	0	0	1	0	0	0	0	0	0	0	6	0
Peak Hour	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

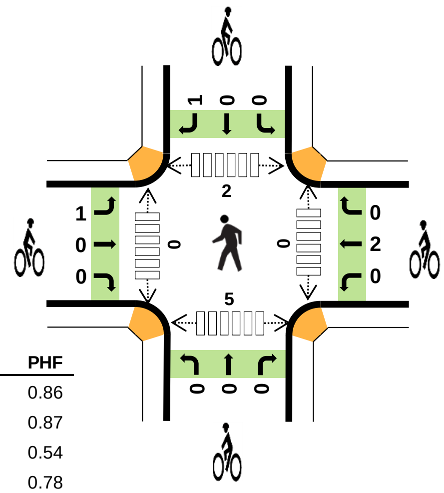
Balentine Dr
Cedar Blvd

Date: 09-17-2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Peak Hour



	HV %:	PHF
EB	1.1%	0.86
WB	2.0%	0.87
NB	0.0%	0.54
SB	0.0%	0.78
TOTAL	1.4%	0.98



Two-Hour Count Summaries

Interval Start	Cedar Blvd Eastbound UT	LT	TH	RT	Cedar Blvd Westbound UT	LT	TH	RT	Balentine Dr Northbound UT	LT	TH	RT	Balentine Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	2	64	0	1	0	61	11	0	0	0	2	1	3	1	15	161	0
4:15 PM	1	5	58	0	4	0	63	8	0	4	0	1	0	4	0	12	160	0
4:30 PM	0	3	65	2	1	0	75	7	0	2	0	1	1	4	0	15	176	0
4:45 PM	0	4	49	1	2	0	67	9	0	2	1	3	1	1	0	12	152	649
5:00 PM	**1**	**7**	**55**	**3**	**4**	**0**	**74**	**10**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**16**	**176**	664
5:15 PM	**0**	**4**	**54**	**0**	**1**	**1**	**92**	**5**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**13**	**173**	677
5:30 PM	**0**	**5**	**69**	**1**	**1**	**0**	**72**	**4**	**0**	**4**	**0**	**2**	**0**	**1**	**0**	**14**	**173**	674
5:45 PM	**0**	**4**	**77**	**0**	**0**	**0**	**74**	**6**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**7**	**171**	**693**
Count Total	2	34	491	7	14	1	578	60	0	15	1	13	3	18	1	104	1,342	0
Peak Hour All	**1**	**20**	**255**	**4**	**6**	**1**	**312**	**25**	**0**	**7**	**0**	**6**	**0**	**6**	**0**	**50**	**693**	**0**
Peak Hour HV	**0**	**0**	**3**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**
Peak Hour HV%	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**2%**	**4%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	1	1	*2*
4:15 PM	2	0	0	0	*2*	0	0	0	0	*0*	0	0	1	0	*1*
4:30 PM	0	2	0	0	*2*	0	0	0	0	*0*	2	0	1	1	*4*
4:45 PM	0	2	0	0	*2*	0	1	0	0	*1*	0	0	2	3	*5*
5:00 PM	**0**	**2**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
5:15 PM	**1**	**4**	**0**	**0**	***5***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**1**	**2**	*3*
5:30 PM	**2**	**1**	**0**	**0**	***3***	**0**	**1**	**0**	**1**	***2***	**0**	**0**	**1**	**1**	*2*
5:45 PM	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**1**	*1*
Count Total	5	12	0	0	*17*	1	3	0	1	*5*	2	0	7	10	*19*
Peak Hour	**3**	**7**	**0**	**0**	***10***	**1**	**2**	**0**	**1**	***4***	**0**	**0**	**2**	**5**	*7*

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Cedar Blvd				Cedar Blvd				Balentine Dr				Balentine Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
4:45 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	7
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	8
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	11
5:30 PM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	12
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**
Count Total	0	0	5	0	0	0	9	3	0	0	0	0	0	0	0	0	17	0
Peak Hour	**0**	**0**	**3**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**

Two-Hour Count Summaries - Bikes

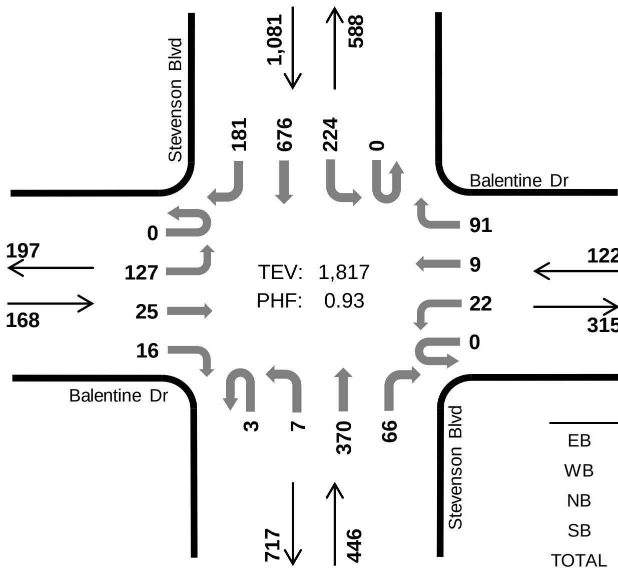
Interval Start	Cedar Blvd			Cedar Blvd			Balentine Dr			Balentine Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	4
5:45 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
Count Total	1	0	0	0	3	0	0	0	0	0	0	1	5	0
Peak Hour	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

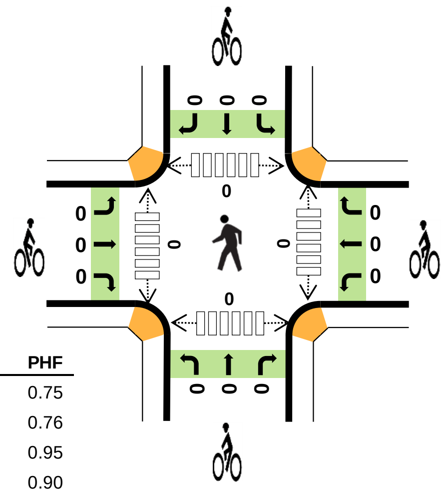
Stevenson Blvd
Balentine Dr

Date: 09-17-2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour



	HV %:	PHF
EB	8.3%	0.75
WB	12.3%	0.76
NB	13.0%	0.95
SB	7.1%	0.90
TOTAL	9.0%	0.93



Two-Hour Count Summaries

Interval Start	Balentine Dr Eastbound				Balentine Dr Westbound				Stevenson Blvd Northbound				Stevenson Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	19	2	2	0	1	1	11	0	1	103	9	1	37	157	23	367	0
7:15 AM	0	27	7	2	0	8	3	14	1	0	78	4	0	29	154	37	364	0
7:30 AM	0	18	6	1	0	7	4	7	0	1	102	14	0	35	165	47	407	0
7:45 AM	**0**	**41**	**9**	**6**	**0**	**6**	**1**	**22**	**1**	**2**	**85**	**15**	**0**	**63**	**178**	**59**	**488**	1,626
8:00 AM	**0**	**31**	**8**	**1**	**0**	**3**	**1**	**19**	**1**	**2**	**93**	**21**	**0**	**51**	**170**	**38**	**439**	1,698
8:15 AM	**0**	**21**	**6**	**5**	**0**	**6**	**3**	**21**	**1**	**1**	**92**	**15**	**0**	**72**	**151**	**33**	**427**	1,761
8:30 AM	**0**	**34**	**2**	**4**	**0**	**7**	**4**	**29**	**0**	**2**	**100**	**15**	**0**	**38**	**177**	**51**	**463**	**1,817**
8:45 AM	0	30	5	1	0	6	2	22	0	0	103	12	0	74	176	53	484	1,813
Count Total	0	221	45	22	0	44	19	145	4	9	756	105	1	399	1,328	341	3,439	0
Peak Hour All	**0**	**127**	**25**	**16**	**0**	**22**	**9**	**91**	**3**	**7**	**370**	**66**	**0**	**224**	**676**	**181**	**1,817**	**0**
Peak Hour HV	**0**	**10**	**3**	**1**	**0**	**3**	**1**	**11**	**0**	**0**	**56**	**2**	**0**	**10**	**61**	**6**	**164**	**0**
Peak Hour HV%	**-**	**8%**	**12%**	**6%**	**-**	**14%**	**11%**	**12%**	**0%**	**0%**	**15%**	**3%**	**-**	**4%**	**9%**	**3%**	**9%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	2	34	16	*54*	0	0	0	1	*1*	1	1	0	1	*3*
7:15 AM	2	1	26	8	*37*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	1	1	16	15	*33*	0	0	0	0	*0*	1	0	0	0	*1*
7:45 AM	**4**	**2**	**10**	**21**	***37***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**5**	**4**	**16**	**20**	***45***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**1**	**5**	**18**	**19**	***43***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**4**	**4**	**14**	**17**	***39***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:45 AM	3	3	18	16	*40*	0	0	0	1	*1*	0	0	0	0	*0*
Count Total	22	22	152	132	*328*	0	0	0	2	*2*	2	1	0	1	*4*
Peak Hour	**14**	**15**	**58**	**77**	***164***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Balentine Dr Eastbound				Balentine Dr Westbound				Stevenson Blvd Northbound				Stevenson Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	0	0	0	0	0	2	0	0	33	1	0	3	12	1	54	0
7:15 AM	0	2	0	0	0	0	0	1	0	0	26	0	0	0	8	0	37	0
7:30 AM	0	1	0	0	0	0	0	1	0	0	16	0	0	2	11	2	33	0
7:45 AM	**0**	**3**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**10**	**0**	**0**	**2**	**18**	**1**	**37**	161
8:00 AM	**0**	**4**	**1**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**16**	**0**	**0**	**2**	**16**	**2**	**45**	152
8:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**4**	**0**	**0**	**18**	**0**	**0**	**3**	**16**	**0**	**43**	158
8:30 AM	**0**	**3**	**0**	**1**	**0**	**1**	**0**	**3**	**0**	**0**	**12**	**2**	**0**	**3**	**11**	**3**	**39**	**164**
8:45 AM	0	2	1	0	0	1	0	2	0	0	17	1	0	2	14	0	40	167
Count Total	0	17	4	1	0	4	1	17	0	0	148	4	0	17	106	9	328	0
Peak Hour	**0**	**10**	**3**	**1**	**0**	**3**	**1**	**11**	**0**	**0**	**56**	**2**	**0**	**10**	**61**	**6**	**164**	**0**

Two-Hour Count Summaries - Bikes

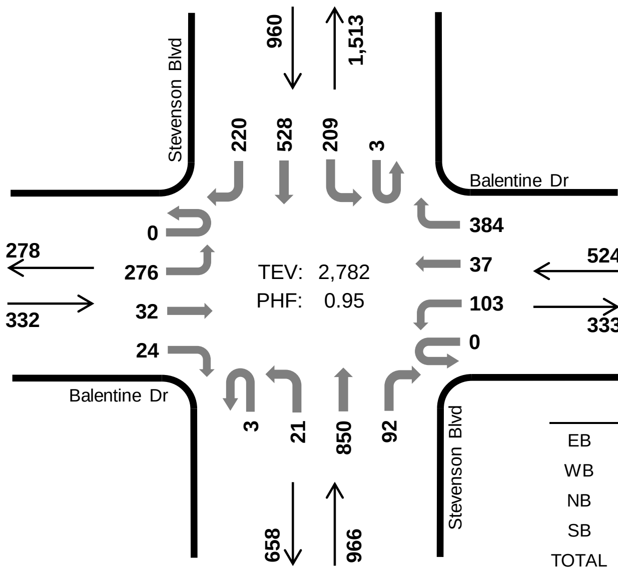
Interval Start	Balentine Dr Eastbound			Balentine Dr Westbound			Stevenson Blvd Northbound			Stevenson Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**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**	0
8:30 AM	**0**	**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	1	0	1	1
Count Total	0	0	0	0	0	0	0	0	0	0	2	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

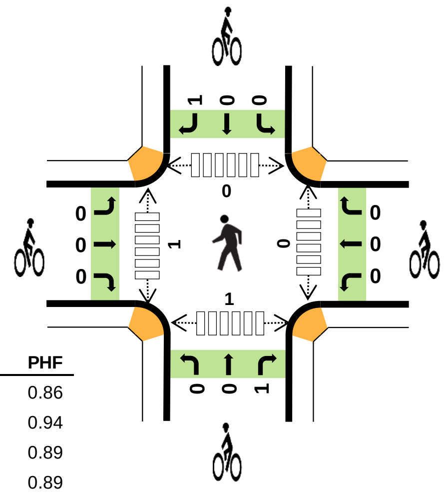
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Stevenson Blvd
Balentine Dr

Date: 09-17-2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Peak Hour





	HV %:	PHF
EB	2.1%	0.86
WB	2.5%	0.94
NB	4.1%	0.89
SB	5.8%	0.89
TOTAL	4.2%	0.95

Two-Hour Count Summaries

Interval Start	Balentine Dr Eastbound				Balentine Dr Westbound				Stevenson Blvd Northbound				Stevenson Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	68	7	2	0	19	16	92	2	4	201	21	0	52	114	63	661	0
4:15 PM	0	72	11	11	0	22	16	77	0	5	144	20	0	62	118	64	622	0
4:30 PM	**0**	**59**	**6**	**4**	**0**	**17**	**10**	**95**	**0**	**4**	**240**	**27**	**2**	**63**	**146**	**60**	**733**	0
4:45 PM	**0**	**69**	**8**	**6**	**0**	**26**	**7**	**94**	**0**	**9**	**191**	**24**	**0**	**58**	**124**	**48**	**664**	2,680
5:00 PM	**0**	**69**	**11**	**3**	**0**	**25**	**9**	**105**	**2**	**4**	**227**	**23**	**0**	**44**	**137**	**60**	**719**	2,738
5:15 PM	**0**	**79**	**7**	**11**	**0**	**35**	**11**	**90**	**1**	**4**	**192**	**18**	**1**	**44**	**121**	**52**	**666**	**2,782**
5:30 PM	0	73	3	5	0	26	6	91	1	3	199	20	0	59	115	50	651	2,700
5:45 PM	0	59	13	0	0	17	4	79	0	1	207	13	0	43	136	48	620	2,656
Count Total	0	548	66	42	0	187	79	723	6	34	1,601	166	3	425	1,011	445	5,336	0
Peak Hour All	**0**	**276**	**32**	**24**	**0**	**103**	**37**	**384**	**3**	**21**	**850**	**92**	**3**	**209**	**528**	**220**	**2,782**	**0**
Peak Hour HV	**0**	**7**	**0**	**0**	**0**	**1**	**0**	**12**	**0**	**1**	**35**	**4**	**0**	**16**	**35**	**5**	**116**	**0**
Peak Hour HV%	**-**	**3%**	**0%**	**0%**	**-**	**1%**	**0%**	**3%**	**0%**	**5%**	**4%**	**4%**	**0%**	**8%**	**7%**	**2%**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	2	19	14	*37*	0	0	0	0	*0*	0	1	0	0	*1*
4:15 PM	2	5	15	18	*40*	0	0	0	0	*0*	0	0	0	1	*1*
4:30 PM	**3**	**2**	**15**	**23**	***43***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
4:45 PM	**2**	**5**	**9**	**10**	***26***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**1**	**2**	**9**	**17**	***29***	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**1**	**4**	**7**	**6**	***18***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:30 PM	0	3	8	14	*25*	0	0	0	0	*0*	0	2	0	0	*2*
5:45 PM	0	0	6	11	*17*	0	0	0	0	*0*	0	2	0	2	*4*
Count Total	11	23	88	113	*235*	0	0	1	1	*2*	0	6	0	4	*10*
Peak Hour	**7**	**13**	**40**	**56**	***116***	**0**	**0**	**1**	**1**	***2***	**0**	**1**	**0**	**1**	*2*

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Balentine Dr Eastbound UT	LT	TH	RT	Balentine Dr Westbound UT	LT	TH	RT	Stevenson Blvd Northbound UT	LT	TH	RT	Stevenson Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	2	0	0	0	0	0	2	0	0	18	1	0	2	11	1	37	0
4:15 PM	0	1	1	0	0	0	0	5	0	0	15	0	0	1	16	1	40	0
4:30 PM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**13**	**1**	**0**	**6**	**15**	**2**	**43**	0
4:45 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**8**	**1**	**0**	**3**	**5**	**2**	**26**	146
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**7**	**2**	**0**	**5**	**11**	**1**	**29**	138
5:15 PM	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**7**	**0**	**0**	**2**	**4**	**0**	**18**	**116**
5:30 PM	0	0	0	0	0	0	0	3	0	0	8	0	0	2	10	2	25	98
5:45 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	4	7	0	17	89
Count Total	0	10	1	0	0	1	0	22	0	1	82	5	0	25	79	9	235	0
Peak Hour	**0**	**7**	**0**	**0**	**0**	**1**	**0**	**12**	**0**	**1**	**35**	**4**	**0**	**16**	**35**	**5**	**116**	**0**

Two-Hour Count Summaries - Bikes

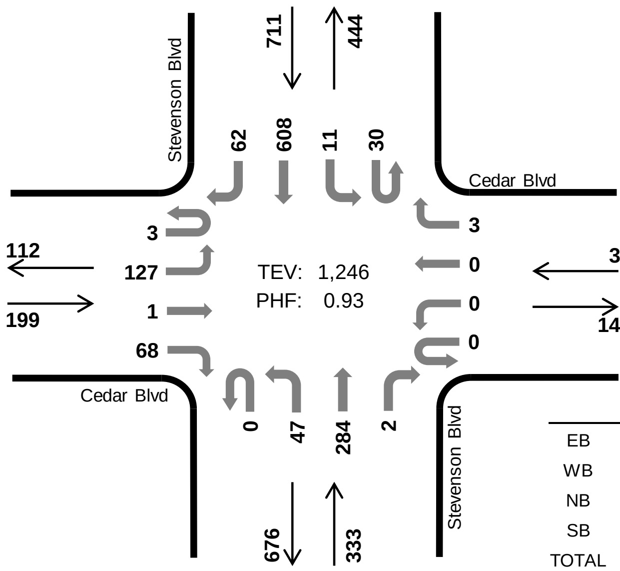
Interval Start	Balentine Dr Eastbound LT	TH	RT	Balentine Dr Westbound LT	TH	RT	Stevenson Blvd Northbound LT	TH	RT	Stevenson Blvd Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**2**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	0	0	0	0	0	1	0	0	1	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**2**	**0**

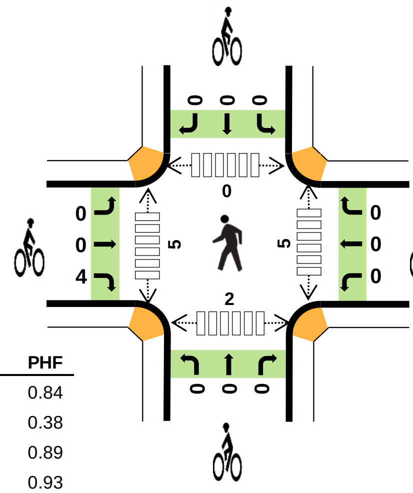
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Stevenson Blvd
Cedar Blvd

Date: 09-17-2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour





	HV %:	PHF
EB	0.5%	0.84
WB	0.0%	0.38
NB	18.9%	0.89
SB	9.0%	0.93
TOTAL	10.3%	0.93

Two-Hour Count Summaries

Interval Start	Cedar Blvd Eastbound				Cedar Blvd Westbound				Stevenson Blvd Northbound				Stevenson Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	17	0	12	0	0	0	0	0	10	77	0	19	0	138	10	283	0
7:15 AM	0	14	0	15	0	0	0	0	0	16	56	0	12	0	124	14	251	0
7:30 AM	0	41	0	15	0	0	0	0	0	16	63	0	15	0	149	17	316	0
7:45 AM	**0**	**35**	**0**	**24**	**0**	**0**	**0**	**0**	**0**	**11**	**72**	**1**	**5**	**2**	**168**	**17**	**335**	1,185
8:00 AM	**0**	**38**	**0**	**13**	**0**	**0**	**0**	**1**	**0**	**7**	**71**	**1**	**9**	**3**	**159**	**12**	**314**	1,216
8:15 AM	**1**	**27**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**11**	**65**	**0**	**8**	**4**	**127**	**14**	**265**	1,230
8:30 AM	**2**	**27**	**1**	**23**	**0**	**0**	**0**	**2**	**0**	**18**	**76**	**0**	**8**	**2**	**154**	**19**	**332**	**1,246**
8:45 AM	0	29	0	23	0	0	0	1	0	14	69	0	12	3	145	20	316	1,227
Count Total	3	228	1	133	0	0	0	4	0	103	549	2	88	14	1,164	123	2,412	0
Peak Hour All	**3**	**127**	**1**	**68**	**0**	**0**	**0**	**3**	**0**	**47**	**284**	**2**	**30**	**11**	**608**	**62**	**1,246**	**0**
Peak Hour HV	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**56**	**0**	**2**	**0**	**60**	**2**	**128**	**0**
Peak Hour HV%	**0%**	**1%**	**0%**	**0%**	**-**	**-**	**-**	**0%**	**-**	**15%**	**20%**	**0%**	**7%**	**0%**	**10%**	**3%**	**10%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	0	34	13	*49*	1	0	0	0	*1*	1	2	0	0	*3*
7:15 AM	3	0	25	5	*33*	1	0	0	0	*1*	1	2	0	0	*3*
7:30 AM	1	0	17	13	*31*	0	0	0	0	*0*	0	0	1	0	*1*
7:45 AM	**0**	**0**	**16**	**18**	***34***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	*2*
8:00 AM	**1**	**0**	**16**	**17**	***34***	**3**	**0**	**0**	**0**	***3***	**1**	**2**	**0**	**0**	*3*
8:15 AM	**0**	**0**	**18**	**13**	***31***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**1**	*3*
8:30 AM	**0**	**0**	**13**	**16**	***29***	**1**	**0**	**0**	**0**	***1***	**2**	**1**	**0**	**1**	***4***
8:45 AM	2	0	17	15	*34*	0	0	0	1	*1*	0	3	0	0	*3*
Count Total	9	0	156	110	*275*	6	0	0	1	*7*	7	12	1	2	*22*
Peak Hour	**1**	**0**	**63**	**64**	***128***	**4**	**0**	**0**	**0**	***4***	**5**	**5**	**0**	**2**	***12***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Cedar Blvd				Cedar Blvd				Stevenson Blvd				Stevenson Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	0	0	0	0	0	0	0	1	33	0	1	0	11	1	49	0
7:15 AM	0	3	0	0	0	0	0	0	0	4	21	0	0	0	4	1	33	0
7:30 AM	0	0	0	1	0	0	0	0	0	2	15	0	2	0	10	1	31	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**14**	**0**	**1**	**0**	**17**	**0**	**34**	147
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**13**	**0**	**1**	**0**	**16**	**0**	**34**	132
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**17**	**0**	**0**	**0**	**12**	**1**	**31**	130
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**12**	**0**	**0**	**0**	**15**	**1**	**29**	**128**
8:45 AM	0	1	0	1	0	0	0	0	0	1	16	0	1	0	14	0	34	128
Count Total	0	7	0	2	0	0	0	0	0	15	141	0	6	0	99	5	275	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**56**	**0**	**2**	**0**	**60**	**2**	**128**	**0**

Two-Hour Count Summaries - Bikes

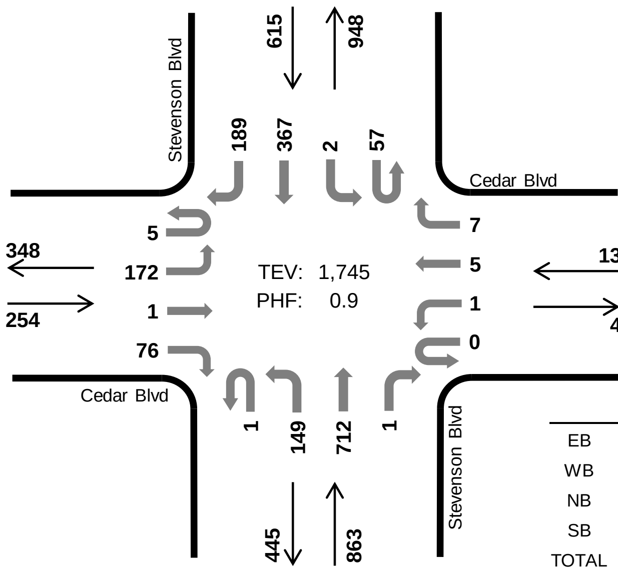
Interval Start	Cedar Blvd			Cedar Blvd			Stevenson Blvd			Stevenson Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:00 AM	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	4
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
8:30 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	5
Count Total	0	0	6	0	0	0	0	0	0	0	1	0	7	0
Peak Hour	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

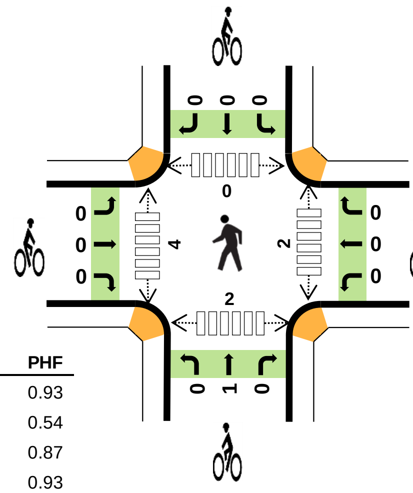
Stevenson Blvd
Cedar Blvd

Date: 09-17-2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Peak Hour



	HV %:	PHF
EB	1.6%	0.93
WB	7.7%	0.54
NB	5.3%	0.87
SB	5.7%	0.93
TOTAL	4.9%	0.90



Two-Hour Count Summaries

Interval Start	Cedar Blvd Eastbound				Cedar Blvd Westbound				Stevenson Blvd Northbound				Stevenson Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	39	0	19	0	0	0	0	0	28	171	0	12	0	89	37	395	0
4:15 PM	1	34	0	21	0	0	0	3	0	21	123	0	16	0	92	44	355	0
4:30 PM	**0**	**49**	**0**	**19**	**0**	**0**	**2**	**3**	**0**	**37**	**206**	**0**	**11**	**1**	**93**	**39**	**460**	0
4:45 PM	**1**	**41**	**1**	**19**	**0**	**0**	**2**	**0**	**0**	**28**	**149**	**0**	**15**	**0**	**81**	**44**	**381**	1,591
5:00 PM	**1**	**43**	**0**	**20**	**0**	**1**	**1**	**4**	**1**	**38**	**210**	**0**	**15**	**1**	**99**	**50**	**484**	1,680
5:15 PM	**3**	**39**	**0**	**18**	**0**	**0**	**0**	**0**	**0**	**46**	**147**	**1**	**16**	**0**	**94**	**56**	**420**	**1,745**
5:30 PM	0	55	0	21	0	1	0	0	0	32	161	0	12	0	82	58	422	1,707
5:45 PM	0	46	0	21	0	0	0	0	0	35	121	0	10	0	90	46	369	1,695
Count Total	6	346	1	158	0	2	5	10	1	265	1,288	1	107	2	720	374	3,286	0
Peak Hour All	**5**	**172**	**1**	**76**	**0**	**1**	**5**	**7**	**1**	**149**	**712**	**1**	**57**	**2**	**367**	**189**	**1,745**	**0**
Peak Hour HV	**0**	**1**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**6**	**40**	**0**	**0**	**1**	**27**	**7**	**86**	**0**
Peak Hour HV%	**0%**	**1%**	**0%**	**4%**	**-**	**0%**	**20%**	**0%**	**0%**	**4%**	**6%**	**0%**	**0%**	**50%**	**7%**	**4%**	**5%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	18	11	*29*	0	0	0	0	*0*	0	3	0	0	*3*
4:15 PM	2	0	14	16	*32*	0	0	0	0	*0*	0	1	0	0	*1*
4:30 PM	**0**	**1**	**18**	**13**	***32***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**1**	**0**	**9**	**6**	***16***	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**0**	**1**	*4*
5:00 PM	**1**	**0**	**13**	**11**	***25***	**0**	**0**	**1**	**0**	***1***	**1**	**2**	**0**	**1**	*4*
5:15 PM	**2**	**0**	**6**	**5**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:30 PM	2	0	8	11	*21*	0	0	0	0	*0*	0	1	0	0	*1*
5:45 PM	0	0	4	9	*13*	0	0	0	0	*0*	0	1	0	0	*1*
Count Total	8	1	90	82	*181*	0	0	1	0	*1*	2	10	0	2	*14*
Peak Hour	**4**	**1**	**46**	**35**	***86***	**0**	**0**	**1**	**0**	***1***	**2**	**4**	**0**	**2**	***8***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Cedar Blvd Eastbound UT	LT	TH	RT	Cedar Blvd Westbound UT	LT	TH	RT	Stevenson Blvd Northbound UT	LT	TH	RT	Stevenson Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	0	0	0	0	0	0	0	0	18	0	0	0	11	0	29	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	14	0	0	0	16	0	32	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**16**	**0**	**0**	**1**	**9**	**3**	**32**	0
4:45 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**6**	**0**	**16**	109
5:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**10**	**0**	**0**	**0**	**9**	**2**	**25**	105
5:15 PM	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**5**	**0**	**0**	**0**	**3**	**2**	**13**	**86**
5:30 PM	0	1	0	1	0	0	0	0	0	1	7	0	1	0	8	2	21	75
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	1	0	8	0	13	72
Count Total	0	4	0	4	0	0	1	0	0	7	83	0	2	1	70	9	181	0
Peak Hour	**0**	**1**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**6**	**40**	**0**	**0**	**1**	**27**	**7**	**86**	**0**

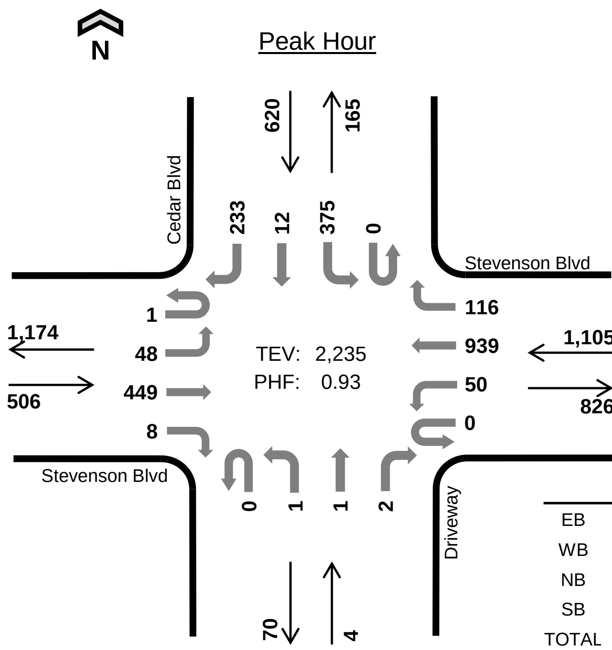
Two-Hour Count Summaries - Bikes

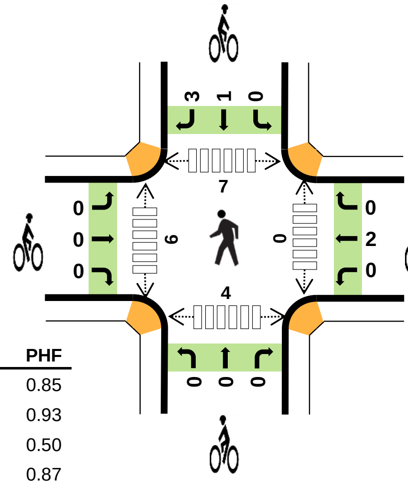
Interval Start	Cedar Blvd Eastbound LT	TH	RT	Cedar Blvd Westbound LT	TH	RT	Stevenson Blvd Northbound LT	TH	RT	Stevenson Blvd Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Cedar Blvd
Stevenson Blvd

Date: 04-10-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM





	HV %:	PHF
EB	11.5%	0.85
WB	5.5%	0.93
NB	25.0%	0.50
SB	1.8%	0.87
TOTAL	5.9%	0.93

Two-Hour Count Summaries

Interval Start		Stevenson Blvd Eastbound				Stevenson Blvd Westbound				Driveway Northbound				Cedar Blvd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	10	61	1	2	7	141	17	0	0	0	1	0	43	1	21	305	0
7:15 AM		0	8	91	2	1	5	166	23	0	0	0	2	0	66	0	22	386	0
7:30 AM		0	16	90	1	0	9	181	21	0	0	0	2	0	69	2	33	424	0
7:45 AM		0	6	102	2	0	8	266	22	0	0	0	0	1	93	3	58	561	1,676
8:00 AM		**0**	**11**	**97**	**2**	**0**	**6**	**230**	**21**	**0**	**0**	**0**	**0**	**0**	**72**	**1**	**43**	**483**	1,854
8:15 AM		**0**	**10**	**111**	**2**	**0**	**16**	**241**	**27**	**0**	**1**	**0**	**0**	**0**	**104**	**3**	**57**	**572**	2,040
8:30 AM		**0**	**12**	**135**	**2**	**0**	**13**	**217**	**36**	**0**	**0**	**0**	**1**	**0**	**96**	**4**	**62**	**578**	2,194
8:45 AM		**1**	**15**	**106**	**2**	**0**	**15**	**251**	**32**	**0**	**0**	**1**	**1**	**0**	**103**	**4**	**71**	**602**	**2,235**
Count Total		1	88	793	14	3	79	1,693	199	0	1	1	7	1	646	18	367	3,911	0
Peak Hour	**All**	**1**	**48**	**449**	**8**	**0**	**50**	**939**	**116**	**0**	**1**	**1**	**2**	**0**	**375**	**12**	**233**	**2,235**	**0**
	HV	**0**	**2**	**56**	**0**	**0**	**0**	**56**	**5**	**0**	**0**	**0**	**1**	**0**	**5**	**0**	**6**	**131**	**0**
	HV%	**0%**	**4%**	**12%**	**0%**	**-**	**0%**	**6%**	**4%**	**-**	**0%**	**0%**	**50%**	**-**	**1%**	**0%**	**3%**	**6%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	15	12	1	3	*31*	0	0	0	0	*0*	0	0	2	0	*2*
7:15 AM	13	10	0	4	*27*	0	1	0	0	*1*	0	0	0	0	*0*
7:30 AM	15	11	1	2	*29*	1	0	0	0	*1*	0	0	0	0	*0*
7:45 AM	14	10	0	1	*25*	0	1	0	1	*2*	0	2	4	0	*6*
8:00 AM	**12**	**14**	**0**	**1**	***27***	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**1**	*1*
8:15 AM	**19**	**16**	**0**	**4**	***39***	**0**	**1**	**0**	**0**	***1***	**0**	**4**	**5**	**1**	*10*
8:30 AM	**16**	**9**	**0**	**2**	***27***	**0**	**1**	**0**	**2**	***3***	**0**	**1**	**0**	**2**	*3*
8:45 AM	**11**	**22**	**1**	**4**	***38***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**2**	**0**	***3***
Count Total	115	104	3	21	*243*	1	4	0	5	*10*	0	8	13	4	*25*
Peak Hour	**58**	**61**	**1**	**11**	***131***	**0**	**2**	**0**	**4**	***6***	**0**	**6**	**7**	**4**	***17***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Stevenson Blvd Eastbound UT	LT	TH	RT	Stevenson Blvd Westbound UT	LT	TH	RT	Driveway Northbound UT	LT	TH	RT	Cedar Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	2	13	0	0	0	10	2	0	0	0	1	0	2	0	1	31	0
7:15 AM	0	0	13	0	0	1	8	1	0	0	0	0	0	4	0	0	27	0
7:30 AM	0	0	15	0	0	1	6	4	0	0	0	1	0	1	0	1	29	0
7:45 AM	0	0	14	0	0	0	9	1	0	0	0	0	0	0	0	1	25	112
8:00 AM	**0**	**0**	**12**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**27**	108
8:15 AM	**0**	**0**	**19**	**0**	**0**	**0**	**14**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**39**	120
8:30 AM	**0**	**1**	**15**	**0**	**0**	**0**	**8**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**27**	118
8:45 AM	**0**	**1**	**10**	**0**	**0**	**0**	**20**	**2**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**3**	**38**	**131**
Count Total	0	4	111	0	0	2	89	13	0	0	0	3	0	12	0	9	243	0
Peak Hour	**0**	**2**	**56**	**0**	**0**	**0**	**56**	**5**	**0**	**0**	**0**	**1**	**0**	**5**	**0**	**6**	**131**	**0**

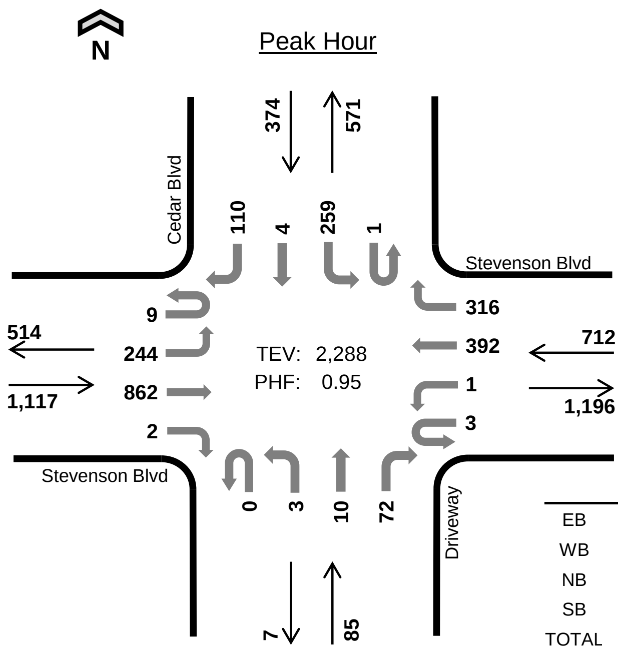
Two-Hour Count Summaries - Bikes

Interval Start	Stevenson Blvd Eastbound LT	TH	RT	Stevenson Blvd Westbound LT	TH	RT	Driveway Northbound LT	TH	RT	Cedar Blvd Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	1	2	4
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	6
8:15 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	6
8:30 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**3**	8
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**
Count Total	0	1	0	0	3	1	0	0	0	0	1	4	10	0
Peak Hour	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**6**	**0**

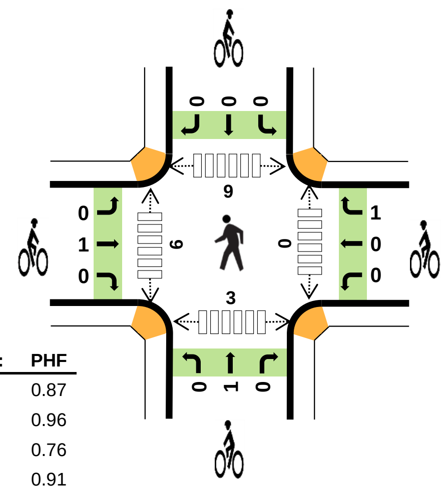
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Cedar Blvd
Stevenson Blvd

Date: 04-10-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	1.4%	0.87
WB	3.5%	0.96
NB	2.4%	0.76
SB	1.9%	0.91
TOTAL	2.2%	0.95



Two-Hour Count Summaries

Interval Start		Stevenson Blvd Eastbound UT	LT	TH	RT	Stevenson Blvd Westbound UT	LT	TH	RT	Driveway Northbound UT	LT	TH	RT	Cedar Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		1	34	199	1	0	1	86	57	0	2	3	11	0	49	0	23	467	0
4:15 PM		1	45	170	1	1	1	81	57	0	1	5	7	0	53	0	14	437	0
4:30 PM		1	42	252	0	0	2	98	60	0	3	3	18	0	58	0	21	558	0
4:45 PM		0	25	198	0	1	2	97	40	0	0	4	11	2	54	0	26	460	1,922
5:00 PM		**2**	**60**	**260**	**0**	**0**	**0**	**84**	**74**	**0**	**0**	**3**	**16**	**1**	**56**	**0**	**25**	**581**	2,036
5:15 PM		**1**	**49**	**182**	**2**	**1**	**0**	**105**	**80**	**0**	**1**	**3**	**24**	**0**	**66**	**0**	**23**	**537**	2,136
5:30 PM		**4**	**68**	**228**	**0**	**1**	**1**	**99**	**81**	**0**	**0**	**2**	**17**	**0**	**71**	**2**	**27**	**601**	2,179
5:45 PM		**2**	**67**	**192**	**0**	**1**	**0**	**104**	**81**	**0**	**2**	**2**	**15**	**0**	**66**	**2**	**35**	**569**	**2,288**
Count Total		12	390	1,681	4	5	7	754	530	0	9	25	119	3	473	4	194	4,210	0
Peak Hour	**All**	**9**	**244**	**862**	**2**	**3**	**1**	**392**	**316**	**0**	**3**	**10**	**72**	**1**	**259**	**4**	**110**	**2,288**	**0**
	HV	**0**	**3**	**13**	**0**	**0**	**0**	**22**	**3**	**0**	**0**	**0**	**2**	**0**	**5**	**0**	**2**	**50**	**0**
	HV%	**0%**	**1%**	**2%**	**0%**	**0%**	**0%**	**6%**	**1%**	**-**	**0%**	**0%**	**3%**	**0%**	**2%**	**0%**	**2%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	4	10	2	5	*21*	0	0	0	0	*0*	0	2	2	2	*6*
4:15 PM	12	10	0	2	*24*	2	0	0	0	*2*	0	2	3	2	*7*
4:30 PM	7	8	1	2	*18*	0	0	0	0	*0*	0	1	2	0	*3*
4:45 PM	10	11	0	0	*21*	0	0	0	0	*0*	0	1	2	1	*4*
5:00 PM	**3**	**6**	**1**	**1**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**4**	**8**	**0**	**2**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**2**	**2**	*7*
5:30 PM	**5**	**6**	**1**	**2**	***14***	**1**	**1**	**1**	**0**	***3***	**0**	**0**	**6**	**0**	*6*
5:45 PM	**4**	**5**	**0**	**2**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**1**	**1**	***4***
Count Total	49	64	5	16	*134*	3	1	1	0	5	0	12	18	8	*38*
Peak Hour	**16**	**25**	**2**	**7**	***50***	**1**	**1**	**1**	**0**	**3**	**0**	**6**	**9**	**3**	***18***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Stevenson Blvd Eastbound UT	LT	TH	RT	Stevenson Blvd Westbound UT	LT	TH	RT	Driveway Northbound UT	LT	TH	RT	Cedar Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	4	0	0	0	9	1	0	0	1	1	0	1	0	4	21	0
4:15 PM	0	1	11	0	0	0	10	0	0	0	0	0	0	2	0	0	24	0
4:30 PM	0	0	7	0	0	0	7	1	0	0	0	1	0	1	0	1	18	0
4:45 PM	0	0	10	0	0	0	10	1	0	0	0	0	0	0	0	0	21	84
5:00 PM	**0**	**1**	**2**	**0**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**11**	74
5:15 PM	**0**	**2**	**2**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**14**	64
5:30 PM	**0**	**0**	**5**	**0**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**14**	60
5:45 PM	**0**	**0**	**4**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**11**	**50**
Count Total	0	4	45	0	0	0	58	6	0	0	1	4	0	9	0	7	134	0
Peak Hour	**0**	**3**	**13**	**0**	**0**	**0**	**22**	**3**	**0**	**0**	**0**	**2**	**0**	**5**	**0**	**2**	**50**	**0**

Two-Hour Count Summaries - Bikes

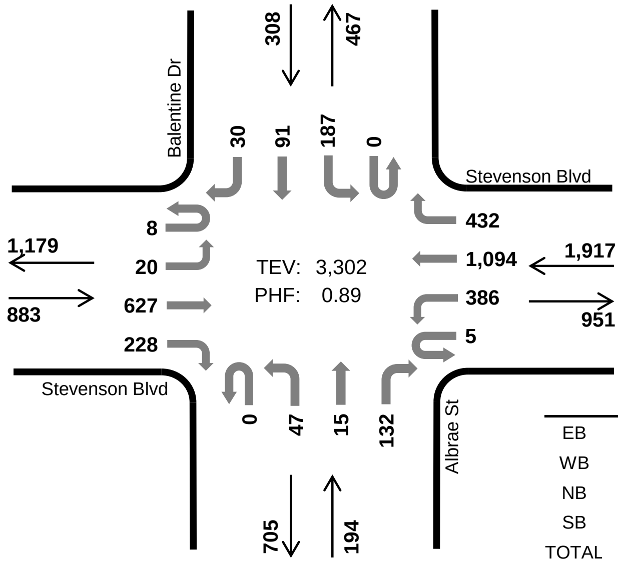
Interval Start	Stevenson Blvd Eastbound LT	TH	RT	Stevenson Blvd Westbound LT	TH	RT	Driveway Northbound LT	TH	RT	Cedar Blvd Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	1	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	3
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
Count Total	1	2	0	0	0	1	0	1	0	0	0	0	5	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**

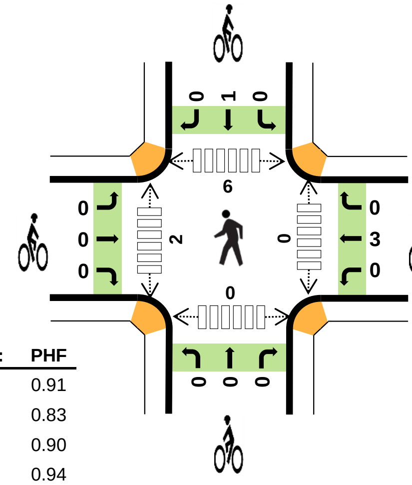
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Albrae St
Stevenson Blvd

Date: 04-10-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour





	HV %:	PHF
EB	7.0%	0.91
WB	4.3%	0.83
NB	9.3%	0.90
SB	3.9%	0.94
TOTAL	5.3%	0.89

Two-Hour Count Summaries

Interval Start		Stevenson Blvd Eastbound				Stevenson Blvd Westbound				Albrae St Northbound				Balentine Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		1	1	108	19	2	40	170	46	0	6	3	10	0	55	12	2	475	0
7:15 AM		1	2	143	26	1	53	208	49	0	6	2	19	0	47	12	8	577	0
7:30 AM		2	2	141	23	1	79	232	68	0	7	2	28	0	55	21	8	669	0
7:45 AM		0	1	177	39	5	107	265	63	0	10	3	25	0	56	19	15	785	2,506
8:00 AM		**1**	**4**	**139**	**45**	**1**	**92**	**265**	**71**	**0**	**9**	**4**	**40**	**0**	**45**	**17**	**8**	**741**	2,772
8:15 AM		**6**	**5**	**153**	**55**	**4**	**102**	**271**	**89**	**0**	**10**	**4**	**35**	**0**	**42**	**24**	**9**	**809**	3,004
8:30 AM		**0**	**6**	**164**	**72**	**0**	**87**	**236**	**124**	**0**	**16**	**3**	**35**	**0**	**45**	**30**	**7**	**825**	3,160
8:45 AM		**1**	**5**	**171**	**56**	**0**	**105**	**322**	**148**	**0**	**12**	**4**	**22**	**0**	**55**	**20**	**6**	**927**	3,302
Count Total		12	26	1,196	335	14	665	1,969	658	0	76	25	214	0	400	155	63	5,808	0
Peak Hour	**All**	**8**	**20**	**627**	**228**	**5**	**386**	**1,094**	**432**	**0**	**47**	**15**	**132**	**0**	**187**	**91**	**30**	**3,302**	**0**
	HV	**0**	**1**	**56**	**5**	**0**	**18**	**58**	**6**	**0**	**4**	**1**	**13**	**0**	**6**	**3**	**3**	**174**	**0**
	HV%	**0%**	**5%**	**9%**	**2%**	**0%**	**5%**	**5%**	**1%**	**-**	**9%**	**7%**	**10%**	**-**	**3%**	**3%**	**10%**	**5%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	14	16	2	5	*37*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	20	11	3	2	*36*	0	1	0	0	*1*	0	6	3	0	*9*
7:30 AM	16	14	7	0	*37*	0	0	0	0	*0*	0	0	0	0	*0*
7:45 AM	15	19	4	1	*39*	0	1	0	1	*2*	0	0	1	0	*1*
8:00 AM	**13**	**21**	**6**	**3**	***43***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**20**	**15**	**4**	**5**	***44***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**2**	**0**	*2*
8:30 AM	**15**	**18**	**5**	**1**	***39***	**0**	**2**	**0**	**1**	***3***	**0**	**0**	**2**	**0**	*2*
8:45 AM	**14**	**28**	**3**	**3**	***48***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**2**	**0**	***4***
Count Total	127	142	34	20	*323*	0	5	0	2	*7*	0	8	10	0	*18*
Peak Hour	**62**	**82**	**18**	**12**	***174***	**0**	**3**	**0**	**1**	***4***	**0**	**2**	**6**	**0**	***8***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Stevenson Blvd Eastbound UT	LT	TH	RT	Stevenson Blvd Westbound UT	LT	TH	RT	Albrae St Northbound UT	LT	TH	RT	Balentine Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	12	2	0	3	10	3	0	1	0	1	0	5	0	0	37	0
7:15 AM	0	0	17	3	0	2	8	1	0	1	0	2	0	1	0	1	36	0
7:30 AM	0	0	15	1	0	3	11	0	0	1	0	6	0	0	0	0	37	0
7:45 AM	0	0	15	0	0	6	10	3	0	0	0	4	0	1	0	0	39	149
8:00 AM	**0**	**1**	**11**	**1**	**0**	**5**	**15**	**1**	**0**	**1**	**0**	**5**	**0**	**2**	**0**	**1**	**43**	155
8:15 AM	**0**	**0**	**19**	**1**	**0**	**3**	**11**	**1**	**0**	**1**	**0**	**3**	**0**	**3**	**1**	**1**	**44**	163
8:30 AM	**0**	**0**	**13**	**2**	**0**	**6**	**11**	**1**	**0**	**1**	**1**	**3**	**0**	**1**	**0**	**0**	**39**	165
8:45 AM	**0**	**0**	**13**	**1**	**0**	**4**	**21**	**3**	**0**	**1**	**0**	**2**	**0**	**0**	**2**	**1**	**48**	**174**
Count Total	0	1	115	11	0	32	97	13	0	7	1	26	0	13	3	4	323	0
Peak Hour	**0**	**1**	**56**	**5**	**0**	**18**	**58**	**6**	**0**	**4**	**1**	**13**	**0**	**6**	**3**	**3**	**174**	**0**

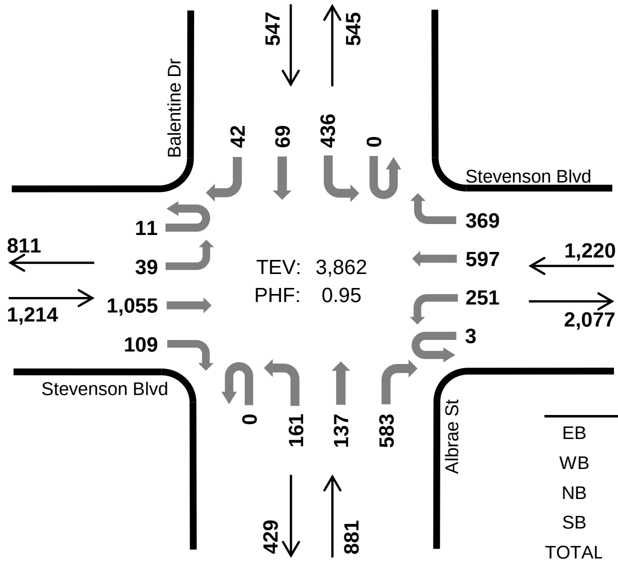
Two-Hour Count Summaries - Bikes

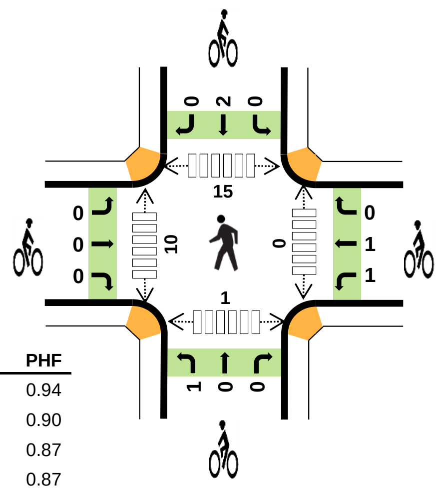
Interval Start	Stevenson Blvd Eastbound LT	TH	RT	Stevenson Blvd Westbound LT	TH	RT	Albrae St Northbound LT	TH	RT	Balentine Dr Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	2	3
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
8:15 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
8:30 AM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	6
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
Count Total	0	0	0	1	4	0	0	0	0	0	2	0	7	0
Peak Hour	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Albrae St
Stevenson Blvd

Date: 04-10-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	1.6%	0.94
WB	2.5%	0.90
NB	1.2%	0.87
SB	0.9%	0.87
TOTAL	1.7%	0.95

Two-Hour Count Summaries

Interval Start		Stevenson Blvd Eastbound UT	LT	TH	RT	Stevenson Blvd Westbound UT	LT	TH	RT	Albrae St Northbound UT	LT	TH	RT	Balentine Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		2	4	214	32	0	95	101	90	0	30	24	100	0	101	21	9	823	0
4:15 PM		3	9	224	24	0	59	158	95	0	36	7	108	0	73	15	7	818	0
4:30 PM		1	5	284	33	0	70	125	87	0	38	23	140	0	90	23	9	928	0
4:45 PM		1	7	269	27	0	59	123	94	0	37	23	111	0	83	20	6	860	3,429
5:00 PM		**3**	**10**	**281**	**25**	**2**	**62**	**134**	**81**	**0**	**46**	**33**	**173**	**0**	**87**	**22**	**10**	**969**	3,575
5:15 PM		**2**	**8**	**248**	**28**	**1**	**61**	**141**	**110**	**0**	**36**	**28**	**148**	**0**	**103**	**20**	**7**	**941**	3,698
5:30 PM		**2**	**15**	**275**	**31**	**0**	**74**	**163**	**101**	**0**	**42**	**33**	**134**	**0**	**117**	**13**	**11**	**1,011**	3,781
5:45 PM		**4**	**6**	**251**	**25**	**0**	**54**	**159**	**77**	**0**	**37**	**43**	**128**	**0**	**129**	**14**	**14**	**941**	**3,862**
Count Total		18	64	2,046	225	3	534	1,104	735	0	302	214	1,042	0	783	148	73	7,291	0
Peak Hour	**All**	**11**	**39**	**1,055**	**109**	**3**	**251**	**597**	**369**	**0**	**161**	**137**	**583**	**0**	**436**	**69**	**42**	**3,862**	**0**
	HV	**0**	**1**	**16**	**3**	**0**	**8**	**20**	**3**	**0**	**4**	**0**	**7**	**0**	**3**	**1**	**1**	**67**	**0**
	HV%	**0%**	**3%**	**2%**	**3%**	**0%**	**3%**	**3%**	**1%**	**-**	**2%**	**0%**	**1%**	**-**	**1%**	**1%**	**2%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	6	14	4	1	*25*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	12	19	4	2	*37*	0	1	0	0	*1*	0	1	3	0	*4*
4:30 PM	9	8	4	2	*23*	0	0	0	0	*0*	0	7	4	0	*11*
4:45 PM	9	13	7	1	*30*	0	0	1	0	*1*	0	0	3	1	*4*
5:00 PM	**5**	**8**	**3**	**3**	***19***	**0**	**1**	**0**	**1**	***2***	**0**	**1**	**2**	**0**	*3*
5:15 PM	**2**	**7**	**3**	**1**	***13***	**0**	**0**	**0**	**1**	***1***	**0**	**5**	**4**	**0**	*9*
5:30 PM	**9**	**11**	**4**	**0**	***24***	**0**	**0**	**1**	**0**	***1***	**0**	**2**	**4**	**0**	*6*
5:45 PM	**4**	**5**	**1**	**1**	***11***	**0**	**1**	**0**	**0**	***1***	**0**	**2**	**5**	**1**	***8***
Count Total	56	85	30	11	*182*	0	3	2	2	*7*	0	18	25	2	*45*
Peak Hour	**20**	**31**	**11**	**5**	***67***	**0**	**2**	**1**	**2**	***5***	**0**	**10**	**15**	**1**	***26***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Stevenson Blvd Eastbound				Stevenson Blvd Westbound				Albrae St Northbound				Balentine Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	5	1	0	5	8	1	0	1	1	2	0	1	0	0	25	0
4:15 PM	0	0	12	0	0	7	12	0	0	1	0	3	0	1	1	0	37	0
4:30 PM	0	0	7	2	0	1	6	1	0	1	0	3	0	2	0	0	23	0
4:45 PM	0	0	9	0	0	2	11	0	0	1	1	5	0	1	0	0	30	115
5:00 PM	**0**	**1**	**3**	**1**	**0**	**2**	**5**	**1**	**0**	**1**	**0**	**2**	**0**	**2**	**1**	**0**	**19**	109
5:15 PM	**0**	**0**	**2**	**0**	**0**	**0**	**6**	**1**	**0**	**1**	**0**	**2**	**0**	**1**	**0**	**0**	**13**	85
5:30 PM	**0**	**0**	**7**	**2**	**0**	**6**	**5**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**24**	86
5:45 PM	**0**	**0**	**4**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**11**	**67**
Count Total	0	1	49	6	0	23	57	5	0	8	2	20	0	8	2	1	182	0
Peak Hour	**0**	**1**	**16**	**3**	**0**	**8**	**20**	**3**	**0**	**4**	**0**	**7**	**0**	**3**	**1**	**1**	**67**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Stevenson Blvd Eastbound			Stevenson Blvd Westbound			Albrae St Northbound			Balentine Dr Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	2
5:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	4
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	4
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	5
5:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**
Count Total	0	0	0	2	1	0	1	1	0	0	2	0	7	0
Peak Hour	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**5**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix C – Existing Conditions Intersections Level of Service Worksheets

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	197	30	319	19	26	57	16	12	23
v/c Ratio	0.09	0.09	0.14	0.05	0.06	0.13	0.05	0.03	0.05
Control Delay	9.2	16.8	6.6	8.6	8.6	3.6	8.6	8.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	16.8	6.6	8.6	8.6	3.6	8.6	8.3	0.9
Queue Length 50th (ft)	5	3	10	2	3	0	2	1	0
Queue Length 95th (ft)	43	30	59	10	12	9	7	6	0
Internal Link Dist (ft)	738		859		952			648	
Turn Bay Length (ft)		160		100		100	110		110
Base Capacity (vph)	3107	1264	3106	1252	1669	1406	1235	1669	1424
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.02	0.10	0.02	0.02	0.04	0.01	0.01	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	126	20	25	235	33	13	18	40	9	7	13
Future Volume (vph)	0	126	20	25	235	33	13	18	40	9	7	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		3.5	4.5		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3466		1770	3465		1770	1863	1564	1770	1863	1583
Flt Permitted		1.00		0.95	1.00		0.75	1.00	1.00	0.74	1.00	1.00
Satd. Flow (perm)		3466		1770	3465		1397	1863	1564	1379	1863	1583
Peak-hour factor, PHF	0.74	0.74	0.74	0.84	0.84	0.84	0.70	0.70	0.70	0.57	0.57	0.57
Adj. Flow (vph)	0	170	27	30	280	39	19	26	57	16	12	23
RTOR Reduction (vph)	0	11	0	0	7	0	0	0	48	0	0	19
Lane Group Flow (vph)	0	186	0	30	312	0	19	26	9	16	12	4
Confl. Peds. (#/hr)						3			1			
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)		17.1		0.7	21.3		5.7	5.7	5.7	5.7	5.7	5.7
Effective Green, g (s)		17.1		0.7	21.3		5.7	5.7	5.7	5.7	5.7	5.7
Actuated g/C Ratio		0.47		0.02	0.58		0.16	0.16	0.16	0.16	0.16	0.16
Clearance Time (s)		4.5		3.5	4.5		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		2.5		2.0	2.5		2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		1623		33	2022		218	290	244	215	290	247
v/s Ratio Prot		0.05		c0.02	c0.09			c0.01			0.01	
v/s Ratio Perm							0.01		0.01	0.01		0.00
v/c Ratio		0.11		0.91	0.15		0.09	0.09	0.04	0.07	0.04	0.01
Uniform Delay, d1		5.4		17.9	3.5		13.2	13.2	13.1	13.1	13.1	13.0
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.0		116.4	0.0		0.1	0.0	0.0	0.1	0.0	0.0
Delay (s)		5.5		134.2	3.5		13.2	13.2	13.1	13.2	13.1	13.0
Level of Service		A		F	A		B	B	B	B	B	B
Approach Delay (s)		5.5			14.7			13.2			13.1	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	36.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	179	117	32	69	147	31	689	251	471	1318	520
v/c Ratio	0.30	0.37	0.09	0.35	0.14	0.20	0.56	0.44	0.65	0.54	0.52
Control Delay	28.0	31.2	0.5	43.5	5.8	44.4	27.9	6.8	37.3	20.0	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	31.2	0.5	43.5	5.8	44.4	27.9	6.8	37.3	20.0	5.6
Queue Length 50th (ft)	35	47	0	26	0	12	90	0	88	116	6
Queue Length 95th (ft)	78	116	0	100	28	56	215	65	#296	379	71
Internal Link Dist (ft)		859		691			896			779	
Turn Bay Length (ft)	280		190		320	205		215	230		300
Base Capacity (vph)	2169	1133	1080	681	1062	376	2702	958	729	2702	1055
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.10	0.03	0.10	0.14	0.08	0.25	0.26	0.65	0.49	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	91	30	47	15	132	28	627	228	391	1094	432
Future Volume (vph)	187	91	30	47	15	132	28	627	228	391	1094	432
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6		4.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Lane Util. Factor	0.91	0.91	1.00		1.00	0.88	1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3221	1681	1561		1795	2787	1770	5085	1583	3433	5085	1560
Flt Permitted	0.95	0.99	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3221	1681	1561		1795	2787	1770	5085	1583	3433	5085	1560
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.91	0.91	0.91	0.83	0.83	0.83
Adj. Flow (vph)	199	97	32	52	17	147	31	689	251	471	1318	520
RTOR Reduction (vph)	0	0	26	0	0	105	0	0	179	0	0	263
Lane Group Flow (vph)	179	117	6	0	69	42	31	689	72	471	1318	257
Confl. Peds. (#/hr)			2									2
Confl. Bikes (#/hr)			1									3
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3	1	5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	13.8	13.8	13.8		6.3	22.0	2.3	22.1	22.1	15.7	35.5	35.5
Effective Green, g (s)	13.8	13.8	13.8		6.3	22.0	2.3	22.1	22.1	15.7	35.5	35.5
Actuated g/C Ratio	0.18	0.18	0.18		0.08	0.28	0.03	0.29	0.29	0.20	0.46	0.46
Clearance Time (s)	4.6	4.6	4.6		4.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.5	2.0	1.5	1.5	2.5	2.0	2.0
Lane Grp Cap (vph)	575	300	278		146	793	52	1453	452	697	2335	716
v/s Ratio Prot	0.06	c0.07			c0.04	0.01	0.02	0.14		c0.14	c0.26	
v/s Ratio Perm			0.00			0.00			0.05			0.16
v/c Ratio	0.31	0.39	0.02		0.47	0.05	0.60	0.47	0.16	0.68	0.56	0.36
Uniform Delay, d1	27.6	28.0	26.2		33.9	20.1	37.0	22.8	20.6	28.4	15.3	13.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.0		0.9	0.0	11.6	0.1	0.1	2.4	0.2	0.1
Delay (s)	27.7	28.3	26.2		34.8	20.1	48.7	22.9	20.7	30.8	15.4	13.6
Level of Service	C	C	C		C	C	D	C	C	C	B	B
Approach Delay (s)		27.8			24.8			23.1			18.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	19.4
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	82	761	72	388	36	67	25	5	59
v/c Ratio	0.23	0.46	0.21	0.24	0.10	0.16	0.06	0.01	0.14
Control Delay	21.4	12.6	21.9	11.2	14.7	5.4	14.6	14.3	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	12.6	21.9	11.2	14.7	5.4	14.6	14.3	4.7
Queue Length 50th (ft)	13	56	11	25	6	0	4	1	0
Queue Length 95th (ft)	72	204	64	99	23	13	16	6	6
Internal Link Dist (ft)		1663		716	304			952	
Turn Bay Length (ft)	170		90			25	215		80
Base Capacity (vph)	1348	2940	1348	2906	1214	1229	1377	1447	1229
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.26	0.05	0.13	0.03	0.05	0.02	0.00	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	611	13	58	285	29	13	13	48	16	3	38
Future Volume (vph)	67	611	13	58	285	29	13	13	48	16	3	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3525		1770	3483			1817	1563	1770	1863	1563
Flt Permitted	0.95	1.00		0.95	1.00			0.84	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3525		1770	3483			1564	1563	1774	1863	1563
Peak-hour factor, PHF	0.82	0.82	0.82	0.81	0.81	0.81	0.72	0.72	0.72	0.64	0.64	0.64
Adj. Flow (vph)	82	745	16	72	352	36	18	18	67	25	5	59
RTOR Reduction (vph)	0	1	0	0	7	0	0	0	59	0	0	52
Lane Group Flow (vph)	82	760	0	72	381	0	0	36	8	25	5	7
Confl. Peds. (#/hr)			15			4			2			2
Confl. Bikes (#/hr)			4									
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Actuated Green, G (s)	2.9	13.6		2.7	13.4			4.2	4.2	4.2	4.2	4.2
Effective Green, g (s)	2.9	13.6		2.7	13.4			4.2	4.2	4.2	4.2	4.2
Actuated g/C Ratio	0.08	0.39		0.08	0.39			0.12	0.12	0.12	0.12	0.12
Clearance Time (s)	4.5	4.5		4.5	4.5			5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2		0.2	0.2			0.2	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)	148	1389		138	1352			190	190	215	226	190
v/s Ratio Prot	c0.05	c0.22		0.04	0.11						0.00	
v/s Ratio Perm								c0.02	0.01	0.01		0.00
v/c Ratio	0.55	0.55		0.52	0.28			0.19	0.04	0.12	0.02	0.04
Uniform Delay, d1	15.2	8.1		15.3	7.2			13.6	13.4	13.5	13.3	13.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.2		1.6	0.0			0.2	0.0	0.1	0.0	0.0
Delay (s)	17.7	8.3		16.9	7.3			13.8	13.4	13.6	13.4	13.4
Level of Service	B	A		B	A			B	B	B	B	B
Approach Delay (s)		9.2			8.8			13.5			13.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	34.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	218	422	171	270	297	292	9	57
v/c Ratio	0.61	0.57	0.52	0.40	0.63	0.29	0.05	0.26
Control Delay	42.8	34.7	42.7	33.5	38.5	7.0	39.5	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	34.7	42.7	33.5	38.5	7.0	39.5	25.2
Queue Length 50th (ft)	92	93	72	57	119	4	4	12
Queue Length 95th (ft)	266	220	174	116	134	0	18	39
Internal Link Dist (ft)		754		1663		634		570
Turn Bay Length (ft)	205		185		160			
Base Capacity (vph)	1109	2160	892	1703	743	1437	746	732
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.20	0.19	0.16	0.40	0.20	0.01	0.08

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	352	19	123	169	25	113	10	101	6	18	22
Future Volume (vph)	192	352	19	123	169	25	113	10	101	6	18	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.86		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3505		1770	3465		1770	3056		1770	1698	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3505		1770	3465		1770	3056		1770	1698	
Peak-hour factor, PHF	0.88	0.88	0.88	0.72	0.72	0.72	0.38	0.38	0.38	0.70	0.70	0.70
Adj. Flow (vph)	218	400	22	171	235	35	297	26	266	9	26	31
RTOR Reduction (vph)	0	2	0	0	7	0	0	194	0	0	28	0
Lane Group Flow (vph)	218	420	0	171	263	0	297	98	0	9	29	0
Confl. Peds. (#/hr)			6			1						2
Confl. Bikes (#/hr)			3									
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	16.7	17.5		15.2	16.0		22.0	22.0		7.5	7.5	
Effective Green, g (s)	16.7	17.5		15.2	16.0		22.0	22.0		7.5	7.5	
Actuated g/C Ratio	0.21	0.22		0.19	0.20		0.27	0.27		0.09	0.09	
Clearance Time (s)	4.5	4.5		4.5	4.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		3.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	364	755		331	682		479	827		163	156	
v/s Ratio Prot	c0.12	c0.12		0.10	0.08		c0.17	0.03		0.01	c0.02	
v/s Ratio Perm												
v/c Ratio	0.60	0.56		0.52	0.39		0.62	0.12		0.06	0.19	
Uniform Delay, d1	29.2	28.4		29.7	28.3		25.9	22.3		33.6	34.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.5		1.4	0.1		1.8	0.0		0.1	0.2	
Delay (s)	31.0	28.9		31.1	28.5		27.7	22.3		33.7	34.2	
Level of Service	C	C		C	C		C	C		C	C	
Approach Delay (s)		29.6			29.5			25.0			34.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	19.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	224	221	268	4	4	58	537	54	1010	125
v/c Ratio	0.58	0.57	0.48	0.03	0.02	0.30	0.29	0.28	0.58	0.15
Control Delay	32.7	32.3	6.6	39.0	0.0	38.7	14.1	38.7	18.6	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	32.3	6.6	39.0	0.0	38.7	14.1	38.7	18.6	6.6
Queue Length 50th (ft)	94	92	0	2	0	24	72	23	163	6
Queue Length 95th (ft)	187	184	50	7	0	69	171	70	387	50
Internal Link Dist (ft)		716		189			438		896	
Turn Bay Length (ft)	235				25	195		160		
Base Capacity (vph)	733	737	828	793	738	398	1855	398	1743	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.30	0.32	0.01	0.01	0.15	0.29	0.14	0.58	0.15

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	12	233	1	1	2	49	449	8	50	939	116
Future Volume (vph)	375	12	233	1	1	2	49	449	8	50	939	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.0		4.0	5.0	5.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1690	1555		1817	1583	1770	3529		1770	3539	1552
Flt Permitted	0.95	0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1690	1555		1817	1583	1770	3529		1770	3539	1552
Peak-hour factor, PHF	0.87	0.87	0.87	0.50	0.50	0.50	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	431	14	268	2	2	4	58	528	9	54	1010	125
RTOR Reduction (vph)	0	0	210	0	0	4	0	1	0	0	0	52
Lane Group Flow (vph)	224	221	58	0	4	0	58	536	0	54	1010	73
Confl. Peds. (#/hr)			6									7
Confl. Bikes (#/hr)			1						4			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	17.0	17.0	17.0		0.9	0.9	6.6	38.9		5.0	37.3	37.3
Effective Green, g (s)	17.0	17.0	17.0		0.9	0.9	6.6	38.9		5.0	37.3	37.3
Actuated g/C Ratio	0.22	0.22	0.22		0.01	0.01	0.08	0.49		0.06	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	362	364	335		20	18	148	1742		112	1675	734
v/s Ratio Prot	c0.13	0.13			c0.00		c0.03	0.15		0.03	c0.29	
v/s Ratio Perm			0.04			0.00						0.05
v/c Ratio	0.62	0.61	0.17		0.20	0.00	0.39	0.31		0.48	0.60	0.10
Uniform Delay, d1	28.0	27.9	25.2		38.6	38.5	34.2	11.9		35.6	15.3	11.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.1	2.9	0.2		4.9	0.1	1.7	0.1		3.2	0.6	0.1
Delay (s)	31.1	30.7	25.4		43.5	38.6	35.9	12.0		38.9	15.9	11.5
Level of Service	C	C	C		D	D	D	B		D	B	B
Approach Delay (s)		28.9			41.0			14.3			16.5	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	491	61	369	24	10	93	89	11	7
v/c Ratio	0.00	0.24	0.19	0.16	0.07	0.02	0.20	0.25	0.02	0.02
Control Delay	24.0	11.0	20.4	8.0	12.5	12.1	4.9	13.8	12.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	11.0	20.4	8.0	12.5	12.1	4.9	13.8	12.2	0.0
Queue Length 50th (ft)	0	21	7	15	2	1	0	9	1	0
Queue Length 95th (ft)	4	107	54	85	15	8	13	31	7	0
Internal Link Dist (ft)		738		859		952			648	
Turn Bay Length (ft)	125		160		100		100	110		110
Base Capacity (vph)	1097	2913	1097	2923	1163	1551	1317	1164	1551	1328
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.17	0.06	0.13	0.02	0.01	0.07	0.08	0.01	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	335	28	51	295	15	17	7	65	51	6	4
Future Volume (vph)	1	335	28	51	295	15	17	7	65	51	6	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		3.5	4.5		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3498		1770	3509		1770	1863	1564	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	1770	3498		1770	3509		1398	1863	1564	1399	1863	1583
Peak-hour factor, PHF	0.74	0.74	0.74	0.84	0.84	0.84	0.70	0.70	0.70	0.57	0.57	0.57
Adj. Flow (vph)	1	453	38	61	351	18	24	10	93	89	11	7
RTOR Reduction (vph)	0	5	0	0	3	0	0	0	78	0	0	6
Lane Group Flow (vph)	1	486	0	61	366	0	24	10	15	89	11	1
Confl. Peds. (#/hr)						3			1			
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	0.5	20.4		2.3	22.2		6.6	6.6	6.6	6.6	6.6	6.6
Effective Green, g (s)	0.5	20.4		2.3	22.2		6.6	6.6	6.6	6.6	6.6	6.6
Actuated g/C Ratio	0.01	0.48		0.05	0.52		0.16	0.16	0.16	0.16	0.16	0.16
Clearance Time (s)	3.5	4.5		3.5	4.5		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	20	1686		96	1841		218	290	244	218	290	246
v/s Ratio Prot	0.00	c0.14		c0.03	0.10			0.01			0.01	
v/s Ratio Perm							0.02		0.01	c0.06		0.00
v/c Ratio	0.05	0.29		0.64	0.20		0.11	0.03	0.06	0.41	0.04	0.00
Uniform Delay, d1	20.7	6.6		19.6	5.3		15.3	15.1	15.2	16.1	15.2	15.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1		9.7	0.0		0.1	0.0	0.0	0.5	0.0	0.0
Delay (s)	21.0	6.7		29.3	5.4		15.4	15.2	15.2	16.5	15.2	15.1
Level of Service	C	A		C	A		B	B	B	B	B	B
Approach Delay (s)		6.7			8.8			15.3			16.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	13.0
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	386	194	48	342	670	53	1122	116	282	663	410
v/c Ratio	0.62	0.61	0.13	0.80	0.56	0.41	0.84	0.24	0.67	0.39	0.52
Control Delay	44.1	48.1	0.7	56.8	23.6	62.4	45.0	11.9	56.5	30.7	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	48.1	0.7	56.8	23.6	62.4	45.0	11.9	56.5	30.7	6.0
Queue Length 50th (ft)	135	136	0	215	145	34	256	11	92	123	0
Queue Length 95th (ft)	187	216	0	#501	299	91	416	65	#199	227	87
Internal Link Dist (ft)		859		691			896			779	
Turn Bay Length (ft)	280		190		320	205		215	230		300
Base Capacity (vph)	1368	699	711	427	1231	234	1679	579	453	1733	792
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.28	0.07	0.80	0.54	0.23	0.67	0.20	0.62	0.38	0.52

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	436	69	42	161	137	583	50	1055	109	254	597	369
Future Volume (vph)	436	69	42	161	137	583	50	1055	109	254	597	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6		4.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Lane Util. Factor	0.91	0.91	1.00		1.00	0.88	1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3221	1646	1549		1814	2787	1770	5085	1563	3433	5085	1538
Flt Permitted	0.95	0.97	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3221	1646	1549		1814	2787	1770	5085	1563	3433	5085	1538
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	501	79	48	185	157	670	53	1122	116	282	663	410
RTOR Reduction (vph)	0	0	39	0	0	93	0	0	68	0	0	273
Lane Group Flow (vph)	386	194	9	0	342	577	53	1122	48	282	663	137
Confl. Peds. (#/hr)			10						1			15
Confl. Bikes (#/hr)			2									1
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3	1	5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	21.1	21.1	21.1		25.6	38.9	6.7	29.9	29.9	13.3	36.5	36.5
Effective Green, g (s)	21.1	21.1	21.1		25.6	38.9	6.7	29.9	29.9	13.3	36.5	36.5
Actuated g/C Ratio	0.19	0.19	0.19		0.23	0.36	0.06	0.27	0.27	0.12	0.33	0.33
Clearance Time (s)	4.6	4.6	4.6		4.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.5	2.0	1.5	1.5	2.5	2.0	2.0
Lane Grp Cap (vph)	621	317	299		424	991	108	1391	427	417	1698	513
v/s Ratio Prot	c0.12	0.12			c0.19	0.07	0.03	c0.22		c0.08	0.13	
v/s Ratio Perm			0.01			0.14			0.03			0.09
v/c Ratio	0.62	0.61	0.03		0.81	0.58	0.49	0.81	0.11	0.68	0.39	0.27
Uniform Delay, d1	40.4	40.4	35.8		39.5	28.6	49.6	37.0	29.7	45.9	27.9	26.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	2.5	0.0		10.1	0.7	1.3	3.3	0.0	3.9	0.1	0.1
Delay (s)	41.8	42.8	35.8		49.7	29.3	50.9	40.3	29.8	49.9	27.9	26.7
Level of Service	D	D	D		D	C	D	D	C	D	C	C
Approach Delay (s)		41.7			36.2			39.8			32.1	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	109.3	Sum of lost time (s)	19.4
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	37	377	70	455	14	21	20	30	86
v/c Ratio	0.11	0.32	0.18	0.32	0.03	0.05	0.04	0.06	0.18
Control Delay	20.6	11.3	19.0	9.0	11.8	0.2	11.7	11.6	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	11.3	19.0	9.0	11.8	0.2	11.7	11.6	4.7
Queue Length 50th (ft)	3	10	5	12	1	0	1	2	0
Queue Length 95th (ft)	40	96	61	109	11	0	12	16	10
Internal Link Dist (ft)		1663		716	304			952	
Turn Bay Length (ft)	170		90			25	215		80
Base Capacity (vph)	1487	3079	1487	3074	1423	1347	1594	1594	1349
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.12	0.05	0.15	0.01	0.02	0.01	0.02	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	292	17	57	342	27	8	2	15	13	19	55
Future Volume (vph)	30	292	17	57	342	27	8	2	15	13	19	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3503		1770	3495			1792	1563	1770	1863	1563
Flt Permitted	0.95	1.00		0.95	1.00			0.89	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	3503		1770	3495			1663	1563	1863	1863	1563
Peak-hour factor, PHF	0.82	0.82	0.82	0.81	0.81	0.81	0.72	0.72	0.72	0.64	0.64	0.64
Adj. Flow (vph)	37	356	21	70	422	33	11	3	21	20	30	86
RTOR Reduction (vph)	0	5	0	0	6	0	0	0	18	0	0	74
Lane Group Flow (vph)	37	372	0	70	449	0	0	14	3	20	30	12
Confl. Peds. (#/hr)			15			4			2			2
Confl. Bikes (#/hr)			4									
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Actuated Green, G (s)	0.5	8.6		1.6	9.7			4.0	4.0	4.0	4.0	4.0
Effective Green, g (s)	0.5	8.6		1.6	9.7			4.0	4.0	4.0	4.0	4.0
Actuated g/C Ratio	0.02	0.30		0.06	0.34			0.14	0.14	0.14	0.14	0.14
Clearance Time (s)	4.5	4.5		4.5	4.5			5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2		0.2	0.2			0.2	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)	31	1068		100	1202			235	221	264	264	221
v/s Ratio Prot	0.02	0.11		c0.04	c0.13						c0.02	
v/s Ratio Perm								0.01	0.00	0.01		0.01
v/c Ratio	1.19	0.35		0.70	0.37			0.06	0.01	0.08	0.11	0.06
Uniform Delay, d1	13.8	7.6		13.1	7.0			10.5	10.4	10.5	10.6	10.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	225.4	0.1		15.9	0.1			0.0	0.0	0.0	0.1	0.0
Delay (s)	239.3	7.7		28.9	7.0			10.5	10.4	10.5	10.6	10.5
Level of Service	F	A		C	A			B	B	B	B	B
Approach Delay (s)		28.4			10.0			10.5			10.5	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	28.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	59	315	14	386	28	23	24	80
v/c Ratio	0.15	0.16	0.03	0.25	0.08	0.02	0.07	0.21
Control Delay	23.6	8.5	25.1	12.8	25.3	0.0	25.5	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.6	8.5	25.1	12.8	25.3	0.0	25.5	9.9
Queue Length 50th (ft)	14	24	3	46	7	0	6	0
Queue Length 95th (ft)	56	64	22	82	21	0	27	28
Internal Link Dist (ft)		754		1663		634		570
Turn Bay Length (ft)	205		185		160			
Base Capacity (vph)	1599	3150	1421	2744	1302	2472	1302	1188
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.10	0.01	0.14	0.02	0.01	0.02	0.07

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	267	4	12	294	42	15	2	10	19	1	62
Future Volume (vph)	51	267	4	12	294	42	15	2	10	19	1	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.88		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3529		1770	3467		1770	3101		1770	1587	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3529		1770	3467		1770	3101		1770	1587	
Peak-hour factor, PHF	0.86	0.86	0.86	0.87	0.87	0.87	0.54	0.54	0.54	0.78	0.78	0.78
Adj. Flow (vph)	59	310	5	14	338	48	28	4	19	24	1	79
RTOR Reduction (vph)	0	1	0	0	6	0	0	22	0	0	71	0
Lane Group Flow (vph)	59	314	0	14	380	0	28	1	0	24	9	0
Confl. Peds. (#/hr)			5			2						
Confl. Bikes (#/hr)						2						
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	3.3	18.6		0.8	16.1		2.7	2.7		4.4	4.4	
Effective Green, g (s)	3.3	18.6		0.8	16.1		2.7	2.7		4.4	4.4	
Actuated g/C Ratio	0.07	0.41		0.02	0.35		0.06	0.06		0.10	0.10	
Clearance Time (s)	4.5	4.5		4.5	4.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		3.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	128	1442		31	1226		105	184		171	153	
v/s Ratio Prot	c0.03	0.09		0.01	c0.11		c0.02	0.00		c0.01	0.01	
v/s Ratio Perm												
v/c Ratio	0.46	0.22		0.45	0.31		0.27	0.01		0.14	0.06	
Uniform Delay, d1	20.2	8.7		22.1	10.7		20.5	20.1		18.8	18.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.0		10.1	0.1		0.5	0.0		0.1	0.1	
Delay (s)	21.2	8.8		32.2	10.7		21.0	20.1		19.0	18.7	
Level of Service	C	A		C	B		C	C		B	B	
Approach Delay (s)		10.7			11.5			20.6			18.8	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	146	144	121	17	95	291	993	4	408	329
v/c Ratio	0.44	0.43	0.30	0.09	0.40	0.68	0.54	0.03	0.47	0.53
Control Delay	29.6	29.5	7.3	35.8	14.3	38.1	15.8	37.8	26.3	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	29.5	7.3	35.8	14.3	38.1	15.8	37.8	26.3	6.8
Queue Length 50th (ft)	55	55	0	6	0	105	123	2	74	0
Queue Length 95th (ft)	126	126	40	26	30	#336	350	13	158	67
Internal Link Dist (ft)		716		189			438		896	
Turn Bay Length (ft)	235				25	195		160		
Base Capacity (vph)	786	789	790	860	781	427	1886	427	1869	969
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.18	0.15	0.02	0.12	0.68	0.53	0.01	0.22	0.34

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	4	110	3	10	72	253	862	2	4	392	316
Future Volume (vph)	260	4	110	3	10	72	253	862	2	4	392	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.0		4.0	5.0	5.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1688	1558		1841	1559	1770	3538		1770	3539	1551
Flt Permitted	0.95	0.95	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1688	1558		1841	1559	1770	3538		1770	3539	1551
Peak-hour factor, PHF	0.91	0.91	0.91	0.76	0.76	0.76	0.87	0.87	0.87	0.96	0.96	0.96
Adj. Flow (vph)	286	4	121	4	13	95	291	991	2	4	408	329
RTOR Reduction (vph)	0	0	98	0	0	88	0	0	0	0	0	237
Lane Group Flow (vph)	146	144	23	0	17	7	291	993	0	4	408	92
Confl. Peds. (#/hr)			6						3			9
Confl. Bikes (#/hr)						1			1			
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	13.7	13.7	13.7		5.3	5.3	16.7	36.3		0.9	20.5	20.5
Effective Green, g (s)	13.7	13.7	13.7		5.3	5.3	16.7	36.3		0.9	20.5	20.5
Actuated g/C Ratio	0.19	0.19	0.19		0.07	0.07	0.23	0.50		0.01	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	314	315	291		133	112	403	1754		21	991	434
v/s Ratio Prot	c0.09	0.09			c0.01		c0.16	c0.28		0.00	0.12	
v/s Ratio Perm			0.01			0.00						0.06
v/c Ratio	0.46	0.46	0.08		0.13	0.06	0.72	0.57		0.19	0.41	0.21
Uniform Delay, d1	26.5	26.4	24.5		31.8	31.6	26.1	12.9		35.8	21.4	20.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	1.1	0.1		0.4	0.2	6.3	0.4		4.4	0.3	0.2
Delay (s)	27.6	27.5	24.7		32.2	31.9	32.4	13.4		40.2	21.7	20.4
Level of Service	C	C	C		C	C	C	B		D	C	C
Approach Delay (s)		26.7			31.9			17.7			21.2	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Appendix D – Existing plus Project Conditions Intersections Level of Service Worksheets

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	212	30	351	27	26	57	35	12	23
v/c Ratio	0.10	0.09	0.16	0.08	0.05	0.13	0.10	0.02	0.05
Control Delay	9.4	16.8	6.6	8.7	8.4	3.6	8.9	8.1	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	16.8	6.6	8.7	8.4	3.6	8.9	8.1	0.9
Queue Length 50th (ft)	6	3	11	3	3	0	4	1	0
Queue Length 95th (ft)	46	30	64	13	12	9	12	6	0
Internal Link Dist (ft)	269		859		952			148	
Turn Bay Length (ft)		160		100		100	110		110
Base Capacity (vph)	3113	1262	3085	1252	1669	1406	1235	1669	1424
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.02	0.11	0.02	0.02	0.04	0.03	0.01	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	137	20	25	248	47	19	18	40	20	7	13
Future Volume (vph)	0	137	20	25	248	47	19	18	40	20	7	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		3.5	4.5		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3472		1770	3442		1770	1863	1564	1770	1863	1583
Flt Permitted		1.00		0.95	1.00		0.75	1.00	1.00	0.74	1.00	1.00
Satd. Flow (perm)		3472		1770	3442		1397	1863	1564	1379	1863	1583
Peak-hour factor, PHF	0.74	0.74	0.74	0.84	0.84	0.84	0.70	0.70	0.70	0.57	0.57	0.57
Adj. Flow (vph)	0	185	27	30	295	56	27	26	57	35	12	23
RTOR Reduction (vph)	0	10	0	0	11	0	0	0	48	0	0	19
Lane Group Flow (vph)	0	202	0	30	340	0	27	26	9	35	12	4
Confl. Peds. (#/hr)						3			1			
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)		16.8		0.7	21.0		6.0	6.0	6.0	6.0	6.0	6.0
Effective Green, g (s)		16.8		0.7	21.0		6.0	6.0	6.0	6.0	6.0	6.0
Actuated g/C Ratio		0.46		0.02	0.58		0.16	0.16	0.16	0.16	0.16	0.16
Clearance Time (s)		4.5		3.5	4.5		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		2.5		2.0	2.5		2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		1598		33	1980		229	306	257	226	306	260
v/s Ratio Prot		0.06		c0.02	c0.10			0.01			0.01	
v/s Ratio Perm							0.02		0.01	c0.03		0.00
v/c Ratio		0.13		0.91	0.17		0.12	0.08	0.04	0.15	0.04	0.01
Uniform Delay, d1		5.6		17.9	3.7		13.0	12.9	12.8	13.1	12.8	12.8
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.0		116.4	0.0		0.1	0.0	0.0	0.1	0.0	0.0
Delay (s)		5.7		134.2	3.7		13.1	13.0	12.8	13.2	12.8	12.8
Level of Service		A		F	A		B	B	B	B	B	B
Approach Delay (s)		5.7			14.0			12.9			13.0	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	36.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	196	119	36	69	147	31	689	251	471	1318	553
v/c Ratio	0.32	0.38	0.10	0.36	0.14	0.20	0.55	0.44	0.65	0.54	0.54
Control Delay	28.4	31.4	0.5	43.8	5.8	44.6	27.8	6.8	37.6	20.0	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	31.4	0.5	43.8	5.8	44.6	27.8	6.8	37.6	20.0	5.7
Queue Length 50th (ft)	40	49	0	26	0	12	91	0	90	116	6
Queue Length 95th (ft)	85	117	0	100	28	56	215	65	#296	379	73
Internal Link Dist (ft)		859		691			896			779	
Turn Bay Length (ft)	280		190		320	205		215	230		300
Base Capacity (vph)	2159	1126	1076	676	1056	373	2682	953	724	2682	1065
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.11	0.03	0.10	0.14	0.08	0.26	0.26	0.65	0.49	0.52

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	91	34	47	15	132	28	627	228	391	1094	459
Future Volume (vph)	205	91	34	47	15	132	28	627	228	391	1094	459
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6		4.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Lane Util. Factor	0.91	0.91	1.00		1.00	0.88	1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3221	1680	1561		1795	2787	1770	5085	1583	3433	5085	1560
Flt Permitted	0.95	0.99	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3221	1680	1561		1795	2787	1770	5085	1583	3433	5085	1560
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.91	0.91	0.91	0.83	0.83	0.83
Adj. Flow (vph)	218	97	36	52	17	147	31	689	251	471	1318	553
RTOR Reduction (vph)	0	0	30	0	0	105	0	0	179	0	0	280
Lane Group Flow (vph)	196	119	6	0	69	42	31	689	72	471	1318	273
Confl. Peds. (#/hr)			2									2
Confl. Bikes (#/hr)			1									3
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3	1	5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	14.0	14.0	14.0		6.3	22.0	2.3	22.4	22.4	15.7	35.8	35.8
Effective Green, g (s)	14.0	14.0	14.0		6.3	22.0	2.3	22.4	22.4	15.7	35.8	35.8
Actuated g/C Ratio	0.18	0.18	0.18		0.08	0.28	0.03	0.29	0.29	0.20	0.46	0.46
Clearance Time (s)	4.6	4.6	4.6		4.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.5	2.0	1.5	1.5	2.5	2.0	2.0
Lane Grp Cap (vph)	579	302	280		145	788	52	1464	455	692	2339	717
v/s Ratio Prot	0.06	c0.07			c0.04	0.01	0.02	0.14		c0.14	c0.26	
v/s Ratio Perm			0.00			0.00			0.05			0.18
v/c Ratio	0.34	0.39	0.02		0.48	0.05	0.60	0.47	0.16	0.68	0.56	0.38
Uniform Delay, d1	27.9	28.2	26.3		34.2	20.3	37.3	22.8	20.7	28.7	15.3	13.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.0		0.9	0.0	11.6	0.1	0.1	2.5	0.2	0.1
Delay (s)	28.0	28.5	26.3		35.1	20.3	48.9	22.9	20.7	31.3	15.5	13.9
Level of Service	C	C	C		D	C	D	C	C	C	B	B
Approach Delay (s)		28.0			25.0			23.2			18.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	19.4
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	82	761	72	395	36	67	25	5	59
v/c Ratio	0.23	0.46	0.21	0.24	0.10	0.16	0.06	0.01	0.14
Control Delay	21.4	12.6	21.9	11.2	14.7	5.4	14.6	14.3	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	12.6	21.9	11.2	14.7	5.4	14.6	14.3	4.7
Queue Length 50th (ft)	13	56	11	25	6	0	4	1	0
Queue Length 95th (ft)	72	204	64	100	23	13	16	6	6
Internal Link Dist (ft)		1663		716	304			952	
Turn Bay Length (ft)	170		90			25	215		80
Base Capacity (vph)	1348	2940	1348	2899	1214	1229	1377	1447	1229
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.26	0.05	0.14	0.03	0.05	0.02	0.00	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	611	13	58	285	35	13	13	48	16	3	38
Future Volume (vph)	67	611	13	58	285	35	13	13	48	16	3	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3525		1770	3473			1817	1563	1770	1863	1563
Flt Permitted	0.95	1.00		0.95	1.00			0.84	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3525		1770	3473			1564	1563	1774	1863	1563
Peak-hour factor, PHF	0.82	0.82	0.82	0.81	0.81	0.81	0.72	0.72	0.72	0.64	0.64	0.64
Adj. Flow (vph)	82	745	16	72	352	43	18	18	67	25	5	59
RTOR Reduction (vph)	0	1	0	0	9	0	0	0	59	0	0	52
Lane Group Flow (vph)	82	760	0	72	386	0	0	36	8	25	5	7
Confl. Peds. (#/hr)			15			4			2			2
Confl. Bikes (#/hr)			4									
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Actuated Green, G (s)	2.9	13.6		2.7	13.4			4.2	4.2	4.2	4.2	4.2
Effective Green, g (s)	2.9	13.6		2.7	13.4			4.2	4.2	4.2	4.2	4.2
Actuated g/C Ratio	0.08	0.39		0.08	0.39			0.12	0.12	0.12	0.12	0.12
Clearance Time (s)	4.5	4.5		4.5	4.5			5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2		0.2	0.2			0.2	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)	148	1389		138	1348			190	190	215	226	190
v/s Ratio Prot	c0.05	c0.22		0.04	0.11						0.00	
v/s Ratio Perm								c0.02	0.01	0.01		0.00
v/c Ratio	0.55	0.55		0.52	0.29			0.19	0.04	0.12	0.02	0.04
Uniform Delay, d1	15.2	8.1		15.3	7.3			13.6	13.4	13.5	13.3	13.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.2		1.6	0.0			0.2	0.0	0.1	0.0	0.0
Delay (s)	17.7	8.3		16.9	7.3			13.8	13.4	13.6	13.4	13.4
Level of Service	B	A		B	A			B	B	B	B	B
Approach Delay (s)		9.2			8.8			13.5			13.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	34.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	223	422	171	270	297	292	9	62
v/c Ratio	0.61	0.57	0.52	0.40	0.63	0.29	0.05	0.28
Control Delay	42.8	34.7	42.8	33.7	38.5	7.0	39.5	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	34.7	42.8	33.7	38.5	7.0	39.5	24.4
Queue Length 50th (ft)	94	93	72	57	119	4	4	12
Queue Length 95th (ft)	271	220	174	116	135	0	18	40
Internal Link Dist (ft)		754		1663		634		570
Turn Bay Length (ft)	205		185		160			
Base Capacity (vph)	1108	2159	891	1702	743	1437	745	731
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.20	0.19	0.16	0.40	0.20	0.01	0.08

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	352	19	123	169	25	113	10	101	6	18	25
Future Volume (vph)	196	352	19	123	169	25	113	10	101	6	18	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3505		1770	3465		1770	3056		1770	1687	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3505		1770	3465		1770	3056		1770	1687	
Peak-hour factor, PHF	0.88	0.88	0.88	0.72	0.72	0.72	0.38	0.38	0.38	0.70	0.70	0.70
Adj. Flow (vph)	223	400	22	171	235	35	297	26	266	9	26	36
RTOR Reduction (vph)	0	2	0	0	7	0	0	194	0	0	33	0
Lane Group Flow (vph)	223	420	0	171	263	0	297	98	0	9	29	0
Confl. Peds. (#/hr)			6			1						2
Confl. Bikes (#/hr)			3									
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	16.9	17.4		15.3	15.8		22.0	22.0		7.5	7.5	
Effective Green, g (s)	16.9	17.4		15.3	15.8		22.0	22.0		7.5	7.5	
Actuated g/C Ratio	0.21	0.21		0.19	0.19		0.27	0.27		0.09	0.09	
Clearance Time (s)	4.5	4.5		4.5	4.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		3.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	368	751		333	674		479	827		163	155	
v/s Ratio Prot	c0.13	c0.12		0.10	0.08		c0.17	0.03		0.01	c0.02	
v/s Ratio Perm												
v/c Ratio	0.61	0.56		0.51	0.39		0.62	0.12		0.06	0.19	
Uniform Delay, d1	29.1	28.5		29.6	28.5		25.9	22.3		33.6	34.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.5		1.3	0.1		1.8	0.0		0.1	0.2	
Delay (s)	31.1	29.0		30.9	28.6		27.7	22.3		33.7	34.3	
Level of Service	C	C		C	C		C	C		C	C	
Approach Delay (s)		29.7			29.5			25.0			34.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	19.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	224	221	268	4	4	65	537	54	1014	125
v/c Ratio	0.58	0.57	0.48	0.03	0.02	0.32	0.29	0.28	0.58	0.15
Control Delay	33.0	32.6	6.6	39.5	0.0	38.9	14.1	38.9	19.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	32.6	6.6	39.5	0.0	38.9	14.1	38.9	19.0	6.6
Queue Length 50th (ft)	94	93	0	2	0	28	72	23	166	6
Queue Length 95th (ft)	188	185	50	7	0	75	170	70	392	51
Internal Link Dist (ft)		716		189			438		896	
Turn Bay Length (ft)	235				25	195		160		
Base Capacity (vph)	730	734	825	790	735	396	1861	396	1736	807
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.30	0.32	0.01	0.01	0.16	0.29	0.14	0.58	0.15

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	12	233	1	1	2	55	449	8	50	943	116
Future Volume (vph)	375	12	233	1	1	2	55	449	8	50	943	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.0		4.0	5.0	5.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1690	1555		1817	1583	1770	3529		1770	3539	1552
Flt Permitted	0.95	0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1690	1555		1817	1583	1770	3529		1770	3539	1552
Peak-hour factor, PHF	0.87	0.87	0.87	0.50	0.50	0.50	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	431	14	268	2	2	4	65	528	9	54	1014	125
RTOR Reduction (vph)	0	0	210	0	0	4	0	1	0	0	0	52
Lane Group Flow (vph)	224	221	58	0	4	0	65	536	0	54	1014	73
Confl. Peds. (#/hr)			6									7
Confl. Bikes (#/hr)			1						4			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	17.0	17.0	17.0		0.9	0.9	6.9	39.3		5.0	37.4	37.4
Effective Green, g (s)	17.0	17.0	17.0		0.9	0.9	6.9	39.3		5.0	37.4	37.4
Actuated g/C Ratio	0.21	0.21	0.21		0.01	0.01	0.09	0.50		0.06	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	360	362	333		20	17	154	1751		111	1671	732
v/s Ratio Prot	c0.13	0.13			c0.00		c0.04	0.15		0.03	c0.29	
v/s Ratio Perm			0.04			0.00						0.05
v/c Ratio	0.62	0.61	0.17		0.20	0.00	0.42	0.31		0.49	0.61	0.10
Uniform Delay, d1	28.2	28.1	25.4		38.8	38.7	34.3	11.9		35.9	15.5	11.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.3	3.0	0.2		4.9	0.1	1.9	0.1		3.3	0.6	0.1
Delay (s)	31.5	31.1	25.6		43.7	38.8	36.1	12.0		39.2	16.1	11.6
Level of Service	C	C	C		D	D	D	B		D	B	B
Approach Delay (s)		29.2			41.2			14.6			16.7	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	11	14	51	29	0
Future Volume (Veh/h)	0	11	14	51	29	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	12	15	55	32	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)				228		
pX, platoon unblocked						
vC, conflicting volume	117	32	32			
vC1, stage 1 conf vol	32					
vC2, stage 2 conf vol	85					
vCu, unblocked vol	117	32	32			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	899	1042	1580			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	12	70	32
Volume Left	0	15	0
Volume Right	12	0	0
cSH	1042	1580	1700
Volume to Capacity	0.01	0.01	0.02
Queue Length 95th (ft)	1	1	0
Control Delay (s)	8.5	1.6	0.0
Lane LOS	A	A	
Approach Delay (s)	8.5	1.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	146	261	19	11	3
Future Volume (Veh/h)	4	146	261	19	11	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	159	284	21	12	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			349			
pX, platoon unblocked						
vC, conflicting volume	305				382	152
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305				382	152
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1253				591	866

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	4	80	80	189	116	15
Volume Left	4	0	0	0	0	12
Volume Right	0	0	0	0	21	3
cSH	1253	1700	1700	1700	1700	631
Volume to Capacity	0.00	0.05	0.05	0.11	0.07	0.02
Queue Length 95th (ft)	0	0	0	0	0	2
Control Delay (s)	7.9	0.0	0.0	0.0	0.0	10.8
Lane LOS	A					B
Approach Delay (s)	0.2			0.0		10.8
Approach LOS						B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	506	61	380	27	10	93	109	11	7
v/c Ratio	0.00	0.29	0.20	0.20	0.07	0.02	0.20	0.30	0.02	0.02
Control Delay	25.0	12.1	21.0	8.8	12.5	12.0	4.8	14.6	12.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	12.1	21.0	8.8	12.5	12.0	4.8	14.6	12.0	0.0
Queue Length 50th (ft)	0	23	7	17	3	1	0	11	1	0
Queue Length 95th (ft)	4	110	54	88	16	8	13	36	7	0
Internal Link Dist (ft)		559		859		952			156	
Turn Bay Length (ft)	125		160		100		100	110		110
Base Capacity (vph)	1032	2873	1032	2874	1146	1528	1299	1148	1528	1309
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.18	0.06	0.13	0.02	0.01	0.07	0.09	0.01	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	346	28	51	300	19	19	7	65	62	6	4
Future Volume (vph)	1	346	28	51	300	19	19	7	65	62	6	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		3.5	4.5		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3499		1770	3502		1770	1863	1564	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	1770	3499		1770	3502		1398	1863	1564	1399	1863	1583
Peak-hour factor, PHF	0.74	0.74	0.74	0.84	0.84	0.84	0.70	0.70	0.70	0.57	0.57	0.57
Adj. Flow (vph)	1	468	38	61	357	23	27	10	93	109	11	7
RTOR Reduction (vph)	0	6	0	0	4	0	0	0	74	0	0	6
Lane Group Flow (vph)	1	500	0	61	376	0	27	10	19	109	11	1
Confl. Peds. (#/hr)						3			1			
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	0.5	18.5		2.3	20.3		8.8	8.8	8.8	8.8	8.8	8.8
Effective Green, g (s)	0.5	18.5		2.3	20.3		8.8	8.8	8.8	8.8	8.8	8.8
Actuated g/C Ratio	0.01	0.43		0.05	0.48		0.21	0.21	0.21	0.21	0.21	0.21
Clearance Time (s)	3.5	4.5		3.5	4.5		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	20	1519		95	1668		288	384	323	288	384	327
v/s Ratio Prot	0.00	c0.14		c0.03	0.11			0.01			0.01	
v/s Ratio Perm							0.02		0.01	c0.08		0.00
v/c Ratio	0.05	0.33		0.64	0.23		0.09	0.03	0.06	0.38	0.03	0.00
Uniform Delay, d1	20.8	8.0		19.7	6.5		13.7	13.5	13.6	14.5	13.5	13.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1		10.6	0.1		0.1	0.0	0.0	0.3	0.0	0.0
Delay (s)	21.2	8.0		30.3	6.6		13.7	13.5	13.6	14.9	13.5	13.4
Level of Service	C	A		C	A		B	B	B	B	B	B
Approach Delay (s)		8.1			9.9			13.6			14.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	42.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	397	204	53	342	670	53	1122	116	282	663	420
v/c Ratio	0.62	0.63	0.14	0.81	0.56	0.42	0.84	0.24	0.68	0.39	0.53
Control Delay	44.1	48.7	1.7	57.8	24.6	63.1	45.3	11.9	57.1	30.9	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	48.7	1.7	57.8	24.6	63.1	45.3	11.9	57.1	30.9	6.1
Queue Length 50th (ft)	141	145	0	221	155	35	261	11	95	126	0
Queue Length 95th (ft)	192	227	4	#501	306	91	416	65	#199	227	88
Internal Link Dist (ft)		859		691			896			779	
Turn Bay Length (ft)	280		190		320	205		215	230		300
Base Capacity (vph)	1357	692	706	424	1215	232	1666	575	450	1728	797
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.29	0.08	0.81	0.55	0.23	0.67	0.20	0.63	0.38	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	454	69	46	161	137	583	50	1055	109	254	597	378
Future Volume (vph)	454	69	46	161	137	583	50	1055	109	254	597	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6		4.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Lane Util. Factor	0.91	0.91	1.00		1.00	0.88	1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3221	1645	1549		1814	2787	1770	5085	1563	3433	5085	1538
Flt Permitted	0.95	0.97	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3221	1645	1549		1814	2787	1770	5085	1563	3433	5085	1538
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	522	79	53	185	157	670	53	1122	116	282	663	420
RTOR Reduction (vph)	0	0	43	0	0	85	0	0	68	0	0	280
Lane Group Flow (vph)	397	204	10	0	342	585	53	1122	48	282	663	140
Confl. Peds. (#/hr)			10						1			15
Confl. Bikes (#/hr)			2									1
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3	1	5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	21.7	21.7	21.7		25.6	38.9	6.7	30.1	30.1	13.3	36.7	36.7
Effective Green, g (s)	21.7	21.7	21.7		25.6	38.9	6.7	30.1	30.1	13.3	36.7	36.7
Actuated g/C Ratio	0.20	0.20	0.20		0.23	0.35	0.06	0.27	0.27	0.12	0.33	0.33
Clearance Time (s)	4.6	4.6	4.6		4.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.5	2.0	1.5	1.5	2.5	2.0	2.0
Lane Grp Cap (vph)	634	324	305		421	984	107	1390	427	414	1695	512
v/s Ratio Prot	0.12	c0.12			c0.19	0.07	0.03	c0.22		c0.08	0.13	
v/s Ratio Perm			0.01			0.14			0.03			0.09
v/c Ratio	0.63	0.63	0.03		0.81	0.59	0.50	0.81	0.11	0.68	0.39	0.27
Uniform Delay, d1	40.5	40.5	35.7		40.0	29.1	50.1	37.3	30.0	46.4	28.1	26.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	2.8	0.0		10.8	0.8	1.3	3.3	0.0	4.2	0.1	0.1
Delay (s)	41.9	43.3	35.7		50.8	30.0	51.4	40.6	30.0	50.6	28.2	27.0
Level of Service	D	D	D		D	C	D	D	C	D	C	C
Approach Delay (s)		41.8			37.0			40.1			32.5	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	110.1	Sum of lost time (s)	19.4
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	37	377	70	458	14	21	20	30	86
v/c Ratio	0.11	0.32	0.18	0.32	0.03	0.05	0.04	0.06	0.18
Control Delay	20.6	11.3	19.0	9.0	11.8	0.2	11.7	11.6	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	11.3	19.0	9.0	11.8	0.2	11.7	11.6	4.7
Queue Length 50th (ft)	3	10	5	12	1	0	1	2	0
Queue Length 95th (ft)	40	96	61	110	11	0	12	16	10
Internal Link Dist (ft)		1663		716	304			952	
Turn Bay Length (ft)	170		90			25	215		80
Base Capacity (vph)	1487	3079	1487	3070	1423	1347	1594	1594	1349
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.12	0.05	0.15	0.01	0.02	0.01	0.02	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	292	17	57	342	29	8	2	15	13	19	55
Future Volume (vph)	30	292	17	57	342	29	8	2	15	13	19	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3503		1770	3491			1792	1563	1770	1863	1563
Flt Permitted	0.95	1.00		0.95	1.00			0.89	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	3503		1770	3491			1663	1563	1863	1863	1563
Peak-hour factor, PHF	0.82	0.82	0.82	0.81	0.81	0.81	0.72	0.72	0.72	0.64	0.64	0.64
Adj. Flow (vph)	37	356	21	70	422	36	11	3	21	20	30	86
RTOR Reduction (vph)	0	5	0	0	7	0	0	0	18	0	0	74
Lane Group Flow (vph)	37	372	0	70	451	0	0	14	3	20	30	12
Confl. Peds. (#/hr)			15			4			2			2
Confl. Bikes (#/hr)			4									
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Actuated Green, G (s)	0.5	8.6		1.6	9.7			4.0	4.0	4.0	4.0	4.0
Effective Green, g (s)	0.5	8.6		1.6	9.7			4.0	4.0	4.0	4.0	4.0
Actuated g/C Ratio	0.02	0.30		0.06	0.34			0.14	0.14	0.14	0.14	0.14
Clearance Time (s)	4.5	4.5		4.5	4.5			5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2		0.2	0.2			0.2	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)	31	1068		100	1200			235	221	264	264	221
v/s Ratio Prot	0.02	0.11		c0.04	c0.13						c0.02	
v/s Ratio Perm								0.01	0.00	0.01		0.01
v/c Ratio	1.19	0.35		0.70	0.38			0.06	0.01	0.08	0.11	0.06
Uniform Delay, d1	13.8	7.6		13.1	7.0			10.5	10.4	10.5	10.6	10.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	225.4	0.1		15.9	0.1			0.0	0.0	0.0	0.1	0.0
Delay (s)	239.3	7.7		28.9	7.0			10.5	10.4	10.5	10.6	10.5
Level of Service	F	A		C	A			B	B	B	B	B
Approach Delay (s)		28.4			9.9			10.5			10.5	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	28.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	315	14	386	28	23	24	84
v/c Ratio	0.15	0.16	0.04	0.25	0.08	0.02	0.07	0.22
Control Delay	23.7	8.5	25.2	12.9	25.4	0.0	25.5	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.7	8.5	25.2	12.9	25.4	0.0	25.5	9.8
Queue Length 50th (ft)	14	24	3	46	7	0	6	0
Queue Length 95th (ft)	57	64	22	82	21	0	27	28
Internal Link Dist (ft)		754		1663		634		570
Turn Bay Length (ft)	205		185		160			
Base Capacity (vph)	1597	3146	1419	2741	1300	2470	1300	1188
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.10	0.01	0.14	0.02	0.01	0.02	0.07

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	267	4	12	294	42	15	2	10	19	1	65
Future Volume (vph)	52	267	4	12	294	42	15	2	10	19	1	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.88		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3529		1770	3467		1770	3101		1770	1587	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3529		1770	3467		1770	3101		1770	1587	
Peak-hour factor, PHF	0.86	0.86	0.86	0.87	0.87	0.87	0.54	0.54	0.54	0.78	0.78	0.78
Adj. Flow (vph)	60	310	5	14	338	48	28	4	19	24	1	83
RTOR Reduction (vph)	0	1	0	0	6	0	0	22	0	0	75	0
Lane Group Flow (vph)	60	314	0	14	380	0	28	1	0	24	9	0
Confl. Peds. (#/hr)			5			2						
Confl. Bikes (#/hr)						2						
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	3.3	18.7		0.8	16.2		2.7	2.7		4.4	4.4	
Effective Green, g (s)	3.3	18.7		0.8	16.2		2.7	2.7		4.4	4.4	
Actuated g/C Ratio	0.07	0.41		0.02	0.36		0.06	0.06		0.10	0.10	
Clearance Time (s)	4.5	4.5		4.5	4.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		3.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	128	1447		31	1231		104	183		170	153	
v/s Ratio Prot	c0.03	0.09		0.01	c0.11		c0.02	0.00		c0.01	0.01	
v/s Ratio Perm												
v/c Ratio	0.47	0.22		0.45	0.31		0.27	0.01		0.14	0.06	
Uniform Delay, d1	20.3	8.7		22.2	10.6		20.5	20.2		18.9	18.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.0		10.1	0.1		0.5	0.0		0.1	0.1	
Delay (s)	21.3	8.7		32.3	10.7		21.0	20.2		19.0	18.8	
Level of Service	C	A		C	B		C	C		B	B	
Approach Delay (s)		10.7			11.5			20.6			18.8	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	19.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	146	144	121	17	95	293	993	4	413	329
v/c Ratio	0.44	0.43	0.30	0.09	0.40	0.69	0.54	0.03	0.48	0.53
Control Delay	29.7	29.5	7.3	35.8	14.3	38.4	15.8	37.8	26.4	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	29.5	7.3	35.8	14.3	38.4	15.8	37.8	26.4	6.8
Queue Length 50th (ft)	55	55	0	6	0	106	123	2	75	0
Queue Length 95th (ft)	126	126	40	26	30	#339	350	13	160	67
Internal Link Dist (ft)		716		189			438		896	
Turn Bay Length (ft)	235				25	195		160		
Base Capacity (vph)	785	789	789	859	781	427	1885	427	1867	968
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.18	0.15	0.02	0.12	0.69	0.53	0.01	0.22	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	4	110	3	10	72	255	862	2	4	396	316
Future Volume (vph)	260	4	110	3	10	72	255	862	2	4	396	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.0		4.0	5.0	5.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1688	1558		1841	1559	1770	3538		1770	3539	1551
Flt Permitted	0.95	0.95	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1688	1558		1841	1559	1770	3538		1770	3539	1551
Peak-hour factor, PHF	0.91	0.91	0.91	0.76	0.76	0.76	0.87	0.87	0.87	0.96	0.96	0.96
Adj. Flow (vph)	286	4	121	4	13	95	293	991	2	4	412	329
RTOR Reduction (vph)	0	0	98	0	0	88	0	0	0	0	0	237
Lane Group Flow (vph)	146	144	23	0	17	7	293	993	0	4	413	92
Confl. Peds. (#/hr)			6						3			9
Confl. Bikes (#/hr)						1			1			
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	13.7	13.7	13.7		5.3	5.3	16.7	36.4		0.9	20.6	20.6
Effective Green, g (s)	13.7	13.7	13.7		5.3	5.3	16.7	36.4		0.9	20.6	20.6
Actuated g/C Ratio	0.19	0.19	0.19		0.07	0.07	0.23	0.50		0.01	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	314	315	291		133	112	403	1756		21	994	435
v/s Ratio Prot	c0.09	0.09			c0.01		c0.17	c0.28		0.00	0.12	
v/s Ratio Perm			0.01			0.00						0.06
v/c Ratio	0.46	0.46	0.08		0.13	0.06	0.73	0.57		0.19	0.42	0.21
Uniform Delay, d1	26.5	26.5	24.6		31.8	31.7	26.2	12.9		35.8	21.4	20.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	1.1	0.1		0.4	0.2	6.4	0.4		4.4	0.3	0.2
Delay (s)	27.6	27.5	24.7		32.3	31.9	32.6	13.3		40.2	21.7	20.4
Level of Service	C	C	C		C	C	C	B		D	C	C
Approach Delay (s)		26.7			32.0			17.7			21.2	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	17.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	11	4	23	61	0
Future Volume (Veh/h)	0	11	4	23	61	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	12	4	25	66	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)				236		
pX, platoon unblocked						
vC, conflicting volume	99	66	66			
vC1, stage 1 conf vol	66					
vC2, stage 2 conf vol	33					
vCu, unblocked vol	99	66	66			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	922	998	1536			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	12	29	66
Volume Left	0	4	0
Volume Right	12	0	0
cSH	998	1536	1700
Volume to Capacity	0.01	0.00	0.04
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.7	1.0	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	1.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	14.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	364	316	7	11	3
Future Volume (Veh/h)	1	364	316	7	11	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	396	343	8	12	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			639			
pX, platoon unblocked						
vC, conflicting volume	351				547	176
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	351				547	176
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1204				467	837

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	1	198	198	229	122	15
Volume Left	1	0	0	0	0	12
Volume Right	0	0	0	0	8	3
cSH	1204	1700	1700	1700	1700	512
Volume to Capacity	0.00	0.12	0.12	0.13	0.07	0.03
Queue Length 95th (ft)	0	0	0	0	0	2
Control Delay (s)	8.0	0.0	0.0	0.0	0.0	12.2
Lane LOS	A					B
Approach Delay (s)	0.0			0.0		12.2
Approach LOS						B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix C

Noise Data

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Desc Site Prep -100

---- Receptor #1 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40		77.6	100	0
Compactor (ground)	No	20		83.2	100	0
Excavator	No	40		80.7	100	0
Front End Loader	No	40		79.1	100	0
Tractor	No	40	84		100	0
Slurry Trenching Mac	No	50		80.4	100	0
Scraper	No	40		83.6	100	0
Roller	No	20		80	100	0

			Results					
	Calculated (dBA)			Noise Limits (dBA)				
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	71.5	67.6	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	77.2	70.2	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	78	74	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Mac	74.3	71.3	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A
Roller	74	67	N/A	N/A	N/A	N/A	N/A	N/A
Total	78	80.1	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Noise Limit Exceedance (dBA)					
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descı Demolition -100

---- Receptor #1 ----

		Baselines (dBA)		
Descriptioı	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	100	0
Compactor (ground)	No	20		83.2	100	0
Excavator	No	40		80.7	100	0
Pickup Truck	No	40		75	100	0
Front End Loader	No	40		79.1	100	0
Tractor	No	40	84		100	0
Slurry Trenching Mac	No	50		80.4	100	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	71.5	67.6	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	77.2	70.2	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	69	65	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	78	74	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Mac	74.3	71.3	N/A	N/A	N/A	N/A	N/A	N/A
Total	78	78.9	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

	Noise Limit Exceedance (dBA)				
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descı Grading -100

---- Receptor #1 ----

		Baselines (dBA)		
Descriptioı	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	100	0
Compactor (ground)	No	20		83.2	100	0
Excavator	No	40		80.7	100	0
Pickup Truck	No	40		75	100	0
Slurry Trenching Mac	No	50		80.4	100	0
Scraper	No	40		83.6	100	0
Roller	No	20		80	100	0
Grader	No	40	85		100	0
Paver	No	50		77.2	100	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	71.5	67.6	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	77.2	70.2	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	69	65	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Mac	74.3	71.3	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A
Roller	74	67	N/A	N/A	N/A	N/A	N/A	N/A
Grader	79	75	N/A	N/A	N/A	N/A	N/A	N/A
Paver	71.2	68.2	N/A	N/A	N/A	N/A	N/A	N/A
Total	79	80.4	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Noise Limit Exceedance (dBA)					
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descı Building Construction -100

---- Receptor #1 ----

		Baselines (dBA)		
Descriptioı	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40		77.6	100	0
Compactor (ground)	No	20		83.2	100	0
Excavator	No	40		80.7	100	0
Front End Loader	No	40		79.1	100	0
Slurry Trenching Mac	No	50		80.4	100	0
Man Lift	No	20		74.7	100	0

			Results					
	Calculated (dBA)			Noise Limits (dBA)				
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	71.5	67.6	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	77.2	70.2	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Mac	74.3	71.3	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	68.7	61.7	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.2	77.1	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

	Noise Limit Exceedance (dBA)				
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descı Paving -100

---- Receptor #1 ----

		Baselines (dBA)		
Descriptioı	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

			Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Description	Impact Device	Usage(%)				
Compressor (air)	No	40		77.7	100	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	71.6	67.7	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.6	67.7	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

	Noise Limit Exceedance (dBA)				
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Desc Paving -100

---- Receptor #1 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	100	0
Compactor (ground)	No	20		83.2	100	0
Roller	No	20		80	100	0
Paver	No	50		77.2	100	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	71.5	67.6	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	77.2	70.2	N/A	N/A	N/A	N/A	N/A	N/A
Roller	74	67	N/A	N/A	N/A	N/A	N/A	N/A
Paver	71.2	68.2	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.2	74.4	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

	Noise Limit Exceedance (dBA)				
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 2/2/2021
Case Descı Site Prep - 150

---- Receptor #1 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40		77.6	150	0
Compactor (ground)	No	20		83.2	150	0
Excavator	No	40		80.7	150	0
Front End Loader	No	40		79.1	150	0
Tractor	No	40	84		150	0
Slurry Trenching Mac	No	50		80.4	150	0
Scraper	No	40		83.6	150	0
Roller	No	20		80	150	0
Paver	No	50		77.2	150	0

			Results					
	Calculated (dBA)			Noise Limits (dBA)				
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	73.7	66.7	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	71.2	67.2	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	74.5	70.5	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Mac	70.8	67.8	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	74	70.1	N/A	N/A	N/A	N/A	N/A	N/A
Roller	70.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A
Paver	67.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A
Total	74.5	76.9	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Noise Limit Exceedance (dBA)					
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 2/2/2021
Case Descı Demo - 150

---- Receptor #1 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	150	0
Compactor (ground)	No	20		83.2	150	0
Excavator	No	40		80.7	150	0
Pickup Truck	No	40		75	150	0
Front End Loader	No	40		79.1	150	0
Tractor	No	40	84		150	0
Slurry Trenching Mac	No	50		80.4	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	73.7	66.7	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	71.2	67.2	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	65.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	74.5	70.5	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Mac	70.8	67.8	N/A	N/A	N/A	N/A	N/A	N/A
Total	74.5	75.4	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

	Noise Limit Exceedance (dBA)				
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 2/2/2021
Case Desc Grading - 150

---- Receptor #1 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	150	0
Compactor (ground)	No	20		83.2	150	0
Excavator	No	40		80.7	150	0
Pickup Truck	No	40		75	150	0
Front End Loader	No	40		79.1	150	0
Tractor	No	40	84		150	0
Slurry Trenching Mac	No	50		80.4	150	0
Scraper	No	40		83.6	150	0
Roller	No	20		80	150	0
Grader	No	40	85		150	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	73.7	66.7	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	71.2	67.2	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	65.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	74.5	70.5	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Mac	70.8	67.8	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	74	70.1	N/A	N/A	N/A	N/A	N/A	N/A
Roller	70.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A
Grader	75.5	71.5	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.5	77.9	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

	Noise Limit Exceedance (dBA)				
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 2/2/2021
Case Desc Building Construction - 150

---- Receptor #1 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	150	0
Compactor (ground)	No	20		83.2	150	0
Excavator	No	40		80.7	150	0
Front End Loader	No	40		79.1	150	0
Slurry Trenching Mac	No	50		80.4	150	0
Man Lift	No	20		74.7	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	73.7	66.7	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	71.2	67.2	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Mac	70.8	67.8	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	65.2	58.2	N/A	N/A	N/A	N/A	N/A	N/A
Total	73.7	73.6	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Noise Limit Exceedance (dBA)					
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 2/2/2021
Case Desc Paving - 600

---- Receptor #1 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	150	0

			Results					
	Calculated (dBA)			Noise Limits (dBA)				
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	68.1	64.1	N/A	N/A	N/A	N/A	N/A	N/A
Total	68.1	64.1	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

	Noise Limit Exceedance (dBA)				
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 2/2/2021
Case Descı Paving - 150

---- Receptor #1 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Property L	Residentia	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	150	0
Compactor (ground)	No	20		83.2	150	0
Roller	No	20		80	150	0
Paver	No	50		77.2	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	73.7	66.7	N/A	N/A	N/A	N/A	N/A	N/A
Roller	70.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A
Paver	67.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A
Total	73.7	70.9	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

	Noise Limit Exceedance (dBA)				
Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Appendix D

Air Quality Study

39888 Balentine Drive Hotel Project

Air Quality Study

prepared for

City of Newark
Community Development Department
37101 Newark Boulevard
Newark, California 94560

prepared by

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July 2022

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
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1 Project Description and Impact Summary

1.1 Introduction

This study analyzes the potential air quality impacts of the proposed 39888 Balentine Drive Hotel Project in the City of Newark, California (herein referred to as "proposed project" or "project"). Rincon Consultants, Inc. (Rincon) prepared this study under contract to the City of Newark to use in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the project's air quality impacts related to both temporary construction activity and long-term operation of the project. The conclusions of this study are summarized in Table 1.

Table 1 Summary of Impacts

Impact Statement	Proposed Project's Level of Significance
Would the project conflict with or obstruct implementation of the applicable air quality plan?	No Impact
Would the project 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?	Less than significant impact
Would the project expose sensitive receptors to substantial pollutant concentrations?	Less than significant impact
Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than significant impact

1.2 Project Summary

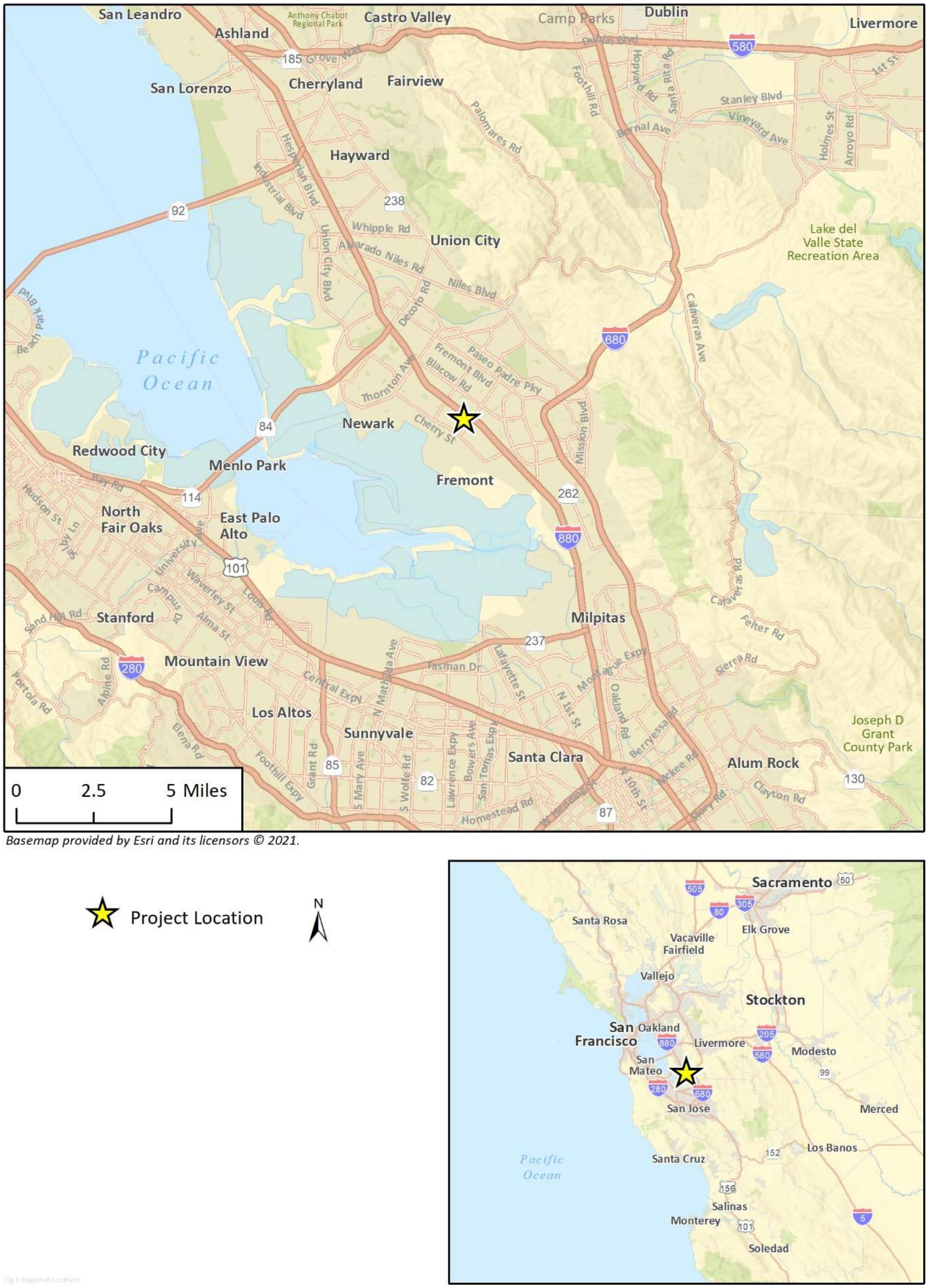
Project Location

The project site encompasses 1.66 acres (72,389.75 square feet) and one parcel parcels at 39888 Balentine Drive (Alameda County Assessor's Parcel Number 901-0195-010) in the City of Newark. The site is bounded by Balentine Drive to the south, Mowry School Road to the east, and a paved access easement to the north and west. See Figure 1 and Figure 2 for the project site location in a regional context and local context, respectively.

Project Description

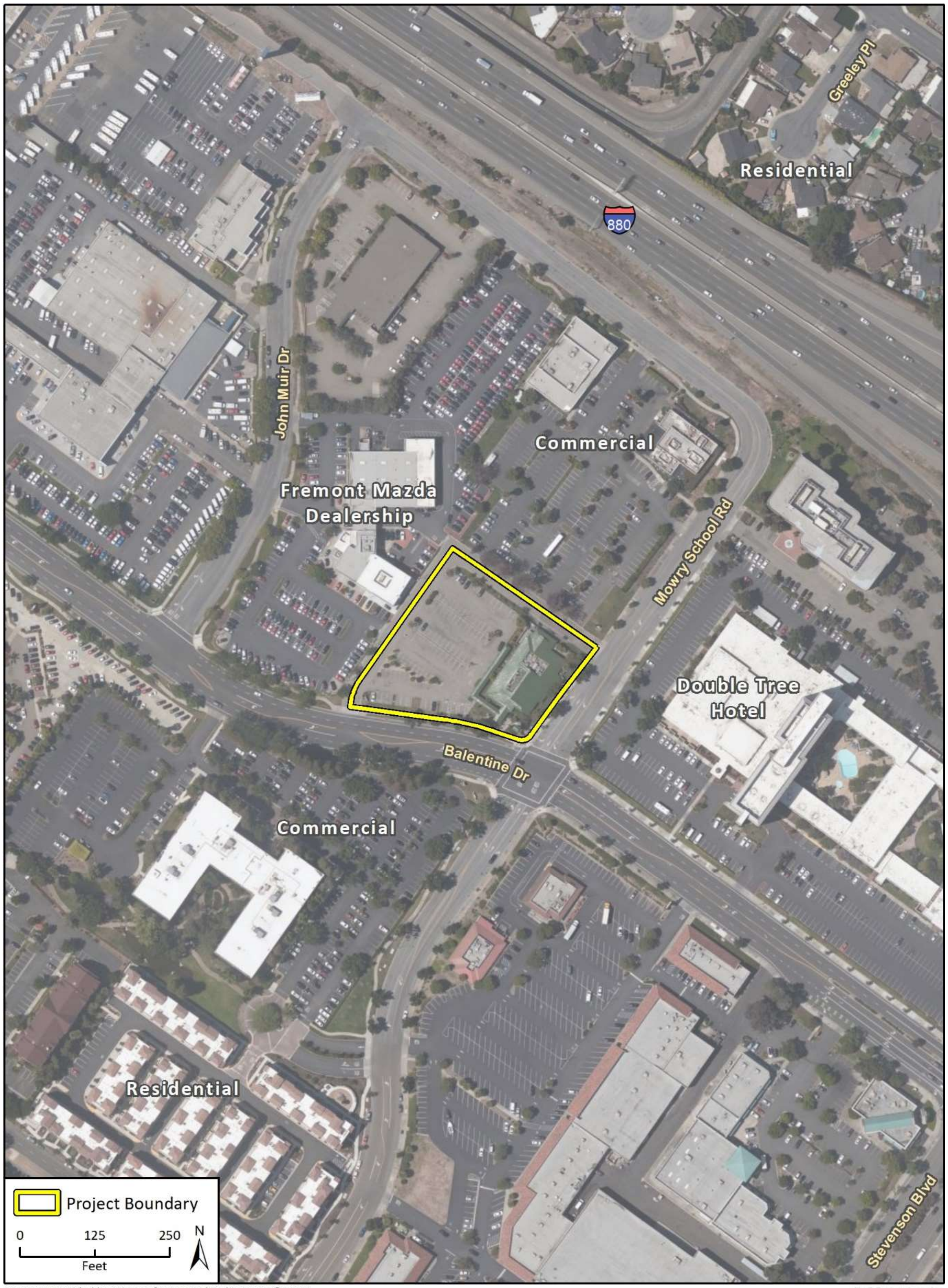
The proposed project would involve demolition of the existing 9,553 square-foot building at 39888 Balentine Drive and construction of a new hotel. The new building would be approximately 75,704 square feet, five stories above ground, and 64 feet in height and would consist of 132 guest rooms and guest amenities including ballrooms. The project would also involve construction of a surface parking lot with 96 vehicle parking spaces.

Figure 1 Regional Location Map



Basemap provided by Esri and its licensors © 2021.

Figure 2 Project Site Location



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The proposed five-story hotel building would be located at the western portion of the project site. The hotel guest rooms would be distributed within the second through fifth floors, with access from central double-loaded corridors. The first floor would include space for recreation and guest services, including a main lobby, two ballrooms, a bar and dining area, a gym, indoor pool, and mechanical and staff office and laundry rooms. The bar and seating area would also provide access to an outdoor patio with seating at the northeastern corner of the building. Two elevators would be located near the center of the building, and staircases would be located at the northwestern and southeastern corners of the building. The building would be wood frame and feature a contemporary exterior aesthetic with stucco and aluminum cladding. The project would include zones for the future installation of a rooftop solar PV system, which would expand the production of low-carbon, renewable energy.

Vehicles would access the site via two existing driveways along Balentine Drive and Mowry School Road, which lead to the existing access easement along the northern boundaries of the site. A porte-cochère would be located at the northern elevation of the proposed hotel building, and the 96-space surface parking lot would be located at the southern portion of the site.

Construction

Project construction is expected to commence in September 2022 and occur over a period of 18 months. Construction would be completed by March 2024. To complete the construction of the project grading would take place over most of project site, and approximately 450 cubic yards of soil would be exported. New building foundations would be designed and installed without the use of pile drivers.

2 Environmental and Regulatory Setting

2.1 Local Climate and Meteorology

The Southwest area is located in the "Southwestern Alameda County" climatological subregion of the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). This subregion encompasses the southeast side of San Francisco Bay, from Dublin Canyon to north of Milpitas. The subregion is bordered on the east by the East Bay hills and on the west by the bay Temperatures are moderated by the subregion's proximity to the Bay and to the sea breeze. Temperatures are slightly cooler in the winter and slightly warmer in the summer than East Bay cities to the north. During the summer months, average maximum temperatures are in the mid 70 degrees Fahrenheit (°F). Average maximum winter temperatures are in the high-50's to low-60's. Average minimum temperatures are in the low 40 °F in winter and mid-50 °F in the summer (BAAQMD 2017a).

Air quality in the SFBAAB is affected by the emission sources located in the region and by natural factors. Air pollutant emissions in the SFBAAB are generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include sources such as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

Atmospheric conditions such as wind speed and direction, air temperature gradients, and local and regional topography influence air quality. Complex topographical features, the location of the Pacific high-pressure system, and varying circulation patterns associated with temperature gradients affect the speed and direction of local winds, which play a major role in the dispersion of pollutants. Strong winds can carry pollutants far from their source, but a lack of wind will allow pollutants to concentrate in an area. Air dispersion also affects pollutant concentrations. As altitude increases, air temperature normally decreases. However, inversions can occur when colder air becomes trapped below warmer air, restricting the air masses' ability to mix. Pollutants also become trapped, which promotes the production of secondary pollutants. Subsidence inversions, which can occur during the summer in the SFBAAB, result from high-pressure cells that cause the local air mass to sink, compress, and become warmer than the air closer to the earth. Pollutants accumulate as this stagnating air mass remains in place for one or more days (BAAQMD 2017a).

The air pollution potential of the Southwestern Alameda County subregion is relatively high during the summer and fall. During these months, high pressure dominates, and pollutants from other cities can be carried by low winds to this area. The polluted air is then pushed up against the East Bay hills. In the wintertime, the air pollution potential in the subregion is moderate. Pollution sources in this subregion include light and heavy industry and motor vehicles. Moreover, increasing vehicle traffic in the area may continue to cause increases in pollution. (BAAQMD 2017a).

2.2 Air Pollutants of Primary Concern

The federal and State Clean Air Acts (CAA) mandate the control and reduction of certain air pollutants. Under these laws, the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established ambient air quality standards (AAQS) for "criteria pollutants" and other air pollutants. Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere and include carbon monoxide, volatile organic compounds (VOC)/reactive organic gases (ROG),[1] nitrogen oxides (NO_X), fine particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide, and lead. Secondary criteria pollutants are created by atmospheric chemical and photochemical reactions primarily between ROG and NO_X. Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog). The characteristics, sources and effects of criteria pollutants are discussed in the following subsections.

Ozone

Ozone is produced by a photochemical reaction (triggered by sunlight) between NO_X and ROG. ROG are composed of non-methane hydrocarbons (with some specific exclusions), and NO_X is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and nitrogen dioxide. NO_X are formed during the combustion of fuels, while ROG are formed during combustion and evaporation of organic solvents. As a highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and NO_X levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant. In addition, because ozone requires sunlight to form, it mostly occurs in concentrations considered serious between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans, including respiratory and eye irritation, aggravation of respiratory diseases such as asthma and bronchitis, possible changes in lung functions, and permanent damage to lung tissue (BAAQMD 2017a). Groups most sensitive to ozone include children, the elderly, persons with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide

Carbon monoxide is a localized pollutant that is found in high concentrations only near its source. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is the incomplete combustion of petroleum fuels by automobile traffic. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. Other sources of carbon monoxide include the incomplete combustion of petroleum fuels at power plants and fuel combustion from wood stoves and fireplaces during the winter. The health effects of carbon monoxide are related to its affinity for hemoglobin in the blood. Carbon monoxide causes a number of health problems including fatigue, headache, confusion, and dizziness. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity, and impaired mental abilities (BAAQMD 2017a). Carbon monoxide tends to dissipate rapidly into the atmosphere; consequently, violations of AAQS for carbon monoxide are generally

[1] CARB defines VOC and ROG similarly as, "any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this report.

associated with localized carbon monoxide "hotspots" that can occur at major roadway intersections during heavy peak-hour traffic conditions.

Nitrogen Dioxide

Nitrogen dioxide is a by-product of fuel combustion; the primary sources are motor vehicles and industrial boilers and furnaces. The principal form of NO_X produced by combustion is nitric oxide, but nitric oxide reacts rapidly to form nitrogen dioxide, creating the mixture of nitric oxide and nitrogen dioxide commonly called NO_X. Nitrogen dioxide is an acute irritant that can aggravate respiratory illnesses and increase the risk of acute and chronic respiratory diseases (BAAQMD 2017a). A relationship between nitrogen dioxide and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. Nitrogen dioxide absorbs blue light, gives a reddish-brown cast to the atmosphere, and reduces visibility (BAAQMD 2017a). It can also contribute to the formation of PM_{10} and acid rain.

Sulfur Dioxide

Sulfur dioxide is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. When SO_2 oxidizes in the atmosphere, it forms sulfur trioxide. Collectively, these pollutants are referred to as sulfur oxides (SO_X). In humid atmospheres, SO_2 can also form sulfuric acid mist, which can eventually react to produce sulfate particulates that can inhibit visibility. Combustion of high sulfur-content fuels is the major source of SO_2, while chemical plants, sulfur recovery plants, and metal processing are minor contributors. At sufficiently high concentrations, SO_2 irritates the upper respiratory tract. At lower concentrations, when in conjunction with particulates, SO_2 appears to do still greater harm by injuring lung tissues. This compound also constricts the breathing passages, especially in people with asthma and people involved in moderate to heavy exercise. Sulfur dioxide is linked with a number of adverse effects on the respiratory system, including irritation of lung tissue, aggravation of respiratory diseases, increased risk of acute and chronic respiratory diseases, and reduced lung function (BAAQMD 2017a). Sulfur oxides, in combination with moisture and oxygen, can yellow leaves on plants, dissolve marble, and eat away iron and steel.

Suspended Particulates

Atmospheric particulate matter is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. The particulates that are of particular concern are PM_{10} (small particulate matter that measures no more than 10 microns in diameter) and $PM_{2.5}$ (fine particulate matter that measures no more than 2.5 microns in diameter). The characteristics, sources, and potential health effects associated with PM_{10} and $PM_{2.5}$ can be different. Major man-made sources of PM_{10} are agricultural operations, industrial processes, combustion of fossil fuels, construction, demolition operations, and entrainment of road dust into the atmosphere. Natural sources include windblown dust, wildfire smoke, and sea spray salt. The finer $PM_{2.5}$ particulates are generally associated with combustion processes as well as formation in the atmosphere as a secondary pollutant through chemical reactions. $PM_{2.5}$ is more likely to penetrate deeply into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems (CARB 2020). More than half of the small and fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance (South Coast Air Quality Management District

2005). Suspended particulates can also reduce lung function, aggravate respiratory and cardiovascular diseases, increase mortality rates, and reduce lung function growth in children (BAAQMD 2017a).

Lead

Lead is a metal found naturally in the environment, as well as in manufacturing products. The major sources of lead emissions historically have been mobile and industrial sources. However, as a result of the U.S. EPA's regulatory efforts to remove lead from gasoline, atmospheric lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior to 1990 due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least in part as a result of national emissions standards for hazardous air pollutants (U.S. EPA 2013). As a result of phasing out leaded gasoline, metal processing currently is the primary source of lead emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. The health impacts of lead include behavioral and hearing disabilities in children and nervous system impairment (BAAQMD 2017a).

Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as diesel particulate matter (DPM). More than 90 percent of DPM is less than one micron in diameter (about 1/70th the diameter of a human hair) and thus is a subset of $PM_{2.5}$. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2020). Particulate matter emitted from diesel engines contributes more than 85 percent of the cancer risk within the SFBAAB, and cancer risk from TACs is highest near major diesel PM sources (BAAQMD 2014).

TACs are different than criteria pollutants because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects, and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

2.3 Air Quality Regulation

Federal and California Clean Air Acts

The federal CAA governs air quality in the United States and is administered by the U.S. EPA at the federal level. Air quality in California is also governed by regulations under the California CAA, which is administered by the CARB at the state level. At the regional and local levels, local air districts such as the BAAQMD typically administer the federal and California CAA. As part of implementing the federal and California CAA, the U.S. EPA and the CARB have established ambient air quality standards for major pollutants at thresholds intended to protect public health. Table 2 summarizes the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS). The CAAQS are more restrictive than the NAAQS for several pollutants, including the one-hour standard for carbon monoxide, the 24-hour standard for sulfur dioxide, and the 24-hour standard for PM_{10}.

Table 2 Ambient Air Quality Standards & Basin Attainment Status

		California Ambient Air Quality Standards		National Ambient Air Quality Standards	
Pollutant	**Averaging Time**	**Concentration**	**Attainment Status**	**Concentration**	**Attainment Status**
Ozone	8-Hour	0.070 ppm	N	0.070 ppm	N
	1-Hour	0.09 ppm	N	–	–
Carbon Monoxide	8-Hour	9.0 ppm	A	9 ppm	A
	1-Hour	20 ppm	A	35 ppm	A
Nitrogen Dioxide	1-Hour	0.18 ppm	A	0.100 ppm	U
	Annual Arithmetic Mean	0.030 ppm		0.053 ppm	A
Sulfur Dioxide	24-Hour	0.04 ppm	A	0.14 ppm	U
	1-Hour	0.25 ppm	A	0.075 ppm	U
	Annual Arithmetic Mean	–	–	0.030 ppm	U
Particulate Matter – Small (PM_{10})	Annual Arithmetic Mean	20 µg/m³	N	–	–
	24-Hour	50 µg/m³	N	150 µg/m³	U
Particulate Matter - Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m³	N	12 µg/m³	U/A
	24-Hour	–	–	35 µg/m³	N
Sulfates	24-Hour	25 µg/m³	A	–	–

Pollutant	Averaging Time	California Ambient Air Quality Standards: Concentration	California Ambient Air Quality Standards: Attainment Status	National Ambient Air Quality Standards: Concentration	National Ambient Air Quality Standards: Attainment Status
Lead	Calendar Quarter	–	–	1.5 µg/m^3	A
	Rolling 3-Month Average	–	–	0.15 µg/m^3	U
	30-Day Average	1.5 µg/m^3	A	–	–
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	U	–	–
Vinyl Chloride (Chloroethene)	24-Hour	0.010 ppm (26 µg/m^3)	No information available	–	–
Visibility Reducing Particles	8-Hour (10:00 to 18:00 PST)	–	U	–	–

A = attainment; N = nonattainment; U = unclassified; ppm=parts per million; µg/m^3=micrograms per cubic meter; PST = Pacific Standard Time

Source: BAAQMD 2017b and U.S. EPA 2022

Depending on whether the standards are met or exceeded, the local air basin is classified as in "attainment" or "non-attainment." Some areas are unclassified, which means insufficient monitoring data are available; unclassified areas are considered to be in attainment. Table 2 presents the attainment status of the SFBAAB for each of the CAAQS and NAAQS. As shown therein, the SFBAAB is designated nonattainment for the NAAQS for ozone and $PM_{2.5}$ and the CAAQS for ozone, PM_{10}, and $PM_{2.5}$.

Regional

As the local air quality management agency, the BAAQMD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards. Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the region is in non-compliance.

The BAAQMD 2017 Clean Air Plan (2017 Plan; titled *Spare the Air: Cool the Climate – A Blueprint for Clean Air and Climate Protection in the Bay Area*) provides a plan to improve Bay Area air quality and protect public health as well as the climate. The legal impetus for the 2017 Clean Air Plan is to update the most recent ozone plan, the 2010 Clean Air Plan, to comply with state air quality planning requirements as codified in the California Health and Safety Code. Although steady progress has been made toward reducing ozone levels in the Bay Area, the region continues to be designated as non-attainment for both the one-hour and eight-hour state ozone standards. In addition, emissions of ozone precursors in the Bay Area contribute to air quality problems in neighboring air basins. The 2017 Plan, which focuses on protecting public health and the climate, defines an integrated, multi-pollutant control strategy that includes all feasible measures to reduce emissions of ozone precursors (including transport of ozone and its precursors to neighboring air basins), PM, and TACs. To protect public health, the control strategy will decrease population exposure to PM and TACs in communities that are most impacted by air pollution with the goal of eliminating disparities in exposure to air pollution between communities. The control strategy will also protect the climate by reducing greenhouse gas (GHG) emissions and developing a long-range vision of how the Bay Area could look and function in a post-carbon economy in 2050 (BAAQMD 2017c).

Local

The purpose of the City of Newark Health and Wellness Element of the General Plan is to promote and sustain the health of Newark residents, including through goals, policies and actions related to improving air quality (City of Newark 2013). The general plan consists of the following goal applicable to air quality:

GOAL HW-1 Air quality that meets state and federal standards and provides improved respiratory health for Newark residents.

Policy HW-1.2 Land Use, Transportation, and Air Quality. Make land use and transportation decisions that reduce tailpipe emissions, including promotion of walking and bicycling, improvements to public transportation, and a jobs-housing balance that reduces vehicle commute miles. Higher density development and mixed commercial and residential uses should be permitted near the proposed Dumbarton Rail Station, and in other areas where high-frequency transit service is proposed.

Policy HW-1.3 Reducing Exposure to Air Pollution in New Development. Use site planning and architectural design to reduce potential exposure of sensitive uses to major air pollution sources, including freeways and industrial activities.

Policy HW-1.4 Evaluation of Air Quality Impacts. Evaluate air quality impacts during the local development review process. Development should be located and regulated to minimize significant air quality related health risks.

Policy HW-1.7 Odors. Reduce the emission of undesirable odors from manufacturing and commercial activities.

2.4 Current Air Quality

The BAAQMD operates a network of air quality monitoring stations throughout the SFBAAB. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and to determine whether ambient air quality meets the California and federal standards. Table 3 indicates the number of days that each of the federal and state standards has been exceeded at the monitoring stations nearest to the project site in each of the last three years. The data indicate the one-hour ozone CAAQS and NAAQS and the eight-hour ozone CAAQS were exceeded in 2019. In addition, the CAAQS and NAAQS for PM_{10} were exceeded in 2018 and 2020. The NAAQS for PM_{10} was also exceeded in 2020, and The NAAQS for $PM_{2.5}$ was exceeded in 2018 and 2020. No other state or federal standards were exceeded at the nearest monitoring stations.

Table 3 Annual Ambient Air Quality Data

Pollutant	2018	2019	2020
Ozone (ppm), Worst 1-Hour[1]	0.061	0.098	0.090
Number of days above CAAQS (>0.09 ppm)	0	1	0
Number of days above NAAQS (>0.12 ppm)	0	0	0
Ozone (ppm), Worst 8-Hour Average[1]	0.052	0.073	0.066
Number of days above CAAQS (>0.070 ppm)	0	2	0
Number of days above NAAQS (>0.070 ppm)	0	2	0
Carbon Monoxide (ppm), Highest 8-Hour Average[2]	2.4	1.1	1.7
Number of days above CAAQS or NAAQS (>9.0 ppm)	0	0	0
Nitrogen Dioxide (ppm), Worst 1-Hour[1]	0.073	0.062	0.059
Number of days above CAAQS (>0.180 ppm)	0	0	0
Number of days above NAAQS (>0.100 ppm)	0	0	0
Sulfur Dioxide (ppm), Worst Hour[3]	0.012	0.019	0.015
Number of days above CAAQS (>0.25 ppm)	0	0	0
Number of days above NAAQS (>0.075 ppm)	0	0	0
Particulate Matter <10 microns ($\mu g/m^3$), Worst 24 Hours[4]	99	34	165
Number of days above CAAQS (>50 $\mu g/m^3$)	1	0	1
Number of days above NAAQS (>150 $\mu g/m^3$)	0	0	1
Particulate Matter <2.5 microns ($\mu g/m^3$), Worst 24 Hours[1]	172.1	24.7	167.7
Number of days above NAAQS (>35 $\mu g/m^3$)	13	0	11
Lead ($\mu g/m^3$), 3-Month Average[5]	0.006	0.012	0.010
Number of days above NAAQS (>0.15 $\mu g/m^3$)	0	0	0

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard

[1] Data sourced from the CARB and the U.S. EPA at the nearest monitoring station with available data at the 9925 International Boulevard station in Oakland.

[2] Data sourced from the U.S. EPA at the nearest monitoring station with available data at the 9925 International Boulevard station in Oakland.

[3] Data sourced from the U.S. EPA at the nearest monitoring station with available data at the 1100 21st Street station in Oakland.

[4] Data sourced from the U.S. EPA at the nearest monitoring station with available data at the 2956-A Treat Boulevard station in Concord.

[5] Data sourced from the U.S. EPA at the nearest monitoring station in the SFBAAB with available data at the 158 Jackson Street station in San José

Source: CARB 2022 and U.S. EPA 2022

2.5 Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with a margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65; people engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. Therefore, the majority of sensitive receptor locations are schools, hospitals, and residences. Sensitive receptors in the project vicinity include a multi-family residential development approximately 600 feet to the south, and a single-family residential neighborhood approximately 800 feet to the north on the other side of I-880.

3 Impact Analysis

3.1 Methodology

Criteria Air Pollutant Emissions

The analysis of air quality impacts considers the effects of both temporary construction-related air quality impacts and long-term air quality impacts associated with operation of the project. The project's construction-related air pollutant emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod uses project-specific information, including the project's land uses, square footages for different uses (e.g., hotel, parking lot), and location, to estimate a project's construction emissions. As discussed further under *Project Impacts*, operational emissions were screened out from further analysis using the BAAQMD screening criteria; therefore, operational air pollutant emissions were not modeled. Complete CalEEMod results and assumptions are provided in Appendix A.

Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. The construction schedule, list of construction equipment, soil export volume, and demolition square footage were based on applicant-provided data. In addition, it was assumed that project construction would comply with all applicable regulatory standards, including BAAQMD Regulation 8, Rule 3 (Architectural Coatings), which restricts the volatile organic compound content of flat and traffic marking coatings to 100 grams per liter and non-flat coatings to 150 grams per liter.

3.2 Significance Thresholds

To determine whether a project would result in a significant impact to air quality, Appendix G of the CEQA Guidelines recommends consideration of whether a project would:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. 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;
3. Expose sensitive receptors to substantial pollutant concentrations; or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

This analysis uses the numeric thresholds in the May 2017 *BAAQMD CEQA Air Quality Guidelines* to determine whether the impacts of the project exceed the thresholds identified in Appendix G of the CEQA Guidelines. The BAAQMD has developed screening criteria to provide lead agencies and project applicants with a conservative indication of whether a project could result in potentially significant air quality impacts. If all the screening criteria are met by a project, the lead agency or applicant does not need to perform a detailed air quality assessment of the project's air pollutant emissions, and air quality impacts would be considered less than significant. These screening levels are generally representative of new development on greenfield sites without any form of mitigation measures taken into consideration. For infill projects such as the proposed project, emissions would be less than the greenfield-type project on which the screening criteria are based; therefore, use of the screening criteria is a conservative approach (BAAQMD 2017a). The BAAQMD's screening level sizes for hotel developments are 554 guest rooms for construction-related criteria pollutant emissions and 489 guest rooms for operational criteria pollutant emissions (BAAQMD 2017a).

In addition, for construction-related emissions to be considered less than significant, projects must meet the following criteria in addition to being below the applicable screening level (BAAQMD 2017a):

1. All Basic Construction Mitigation Measures would be included in the project design and implemented during construction; and
2. Construction-related activities would not include any of the following:
   - Demolition;
   - Simultaneous occurrence of more than two construction phases (e.g., paving and building construction would not occur simultaneously);
   - Simultaneous construction of more than one land use type (e.g., project would develop residential and commercial uses on the same site) (not applicable to high-density infill development);
   - Extensive site preparation (i.e., greater than default assumptions used by the Urban Land Use Emissions Model [URBEMIS] for grading, cut/fill, or earth movement); or
   - Extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity.

The project meets the criteria for use of the operational screening size for criteria pollutant emissions; therefore, this analysis utilizes the screening size process to evaluate the significance of the project's operational criteria pollutant emissions. However, the project does not include implementation of all Basic Construction Mitigation Measures and would involve demolition of the existing land uses. Therefore, the project does not meet all of the screening criteria for construction emissions. For projects that do not meet the screening criteria, BAAQMD provides numeric significance thresholds. Table 4 presents the BAAQMD quantitative significance thresholds for construction-related criteria air pollutant and precursor emissions. These thresholds represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. The proposed project would result in a significant impact if construction emissions would exceed any of the thresholds shown in Table 4.

Table 4 Air Quality Thresholds of Significance

Pollutant	Average Daily Emissions (lbs/day)
ROG	54
NO_X	54
PM_{10}	82 (exhaust)
$PM_{2.5}$	54 (exhaust)
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices

ROG = reactive organic gases, NO_X = nitrogen oxides, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; lbs/day = pounds per day, BAAQMD = Bay Area Air Quality Management District

Source: BAAQMD 2017a

The BAAQMD also provides a preliminary screening methodology to conservatively determine whether a proposed project would potentially result in a significant impact related to localized CO concentrations. If the following criteria are met, a project would result in a less-than-significant impact:

1. Project is consistent with an applicable congestion management program (CMP) established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
2. Project-related traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
3. Project-related traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The BAAQMD has established the following thresholds of significance for local community risks and hazards associated with toxic air contaminants (TACs) and $PM_{2.5}$ for assessing individual project-level impacts at a local level (BAAQMD 2017a):

- Not to exceed an increased cancer risk of >10 in one million
- Not to exceed increased non-cancer (i.e., Chronic or Acute) risk of >1.0 Hazard Index
- Not to exceed ambient $PM_{2.5}$ concentration increase of >0.3 micrograms per cubic meter ($\mu g/m^3$) annual average

A project would have a cumulatively considerable impact related to local community risks and hazards associated with TACs and $PM_{2.5}$ if the aggregate total of current and proposed TAC sources within a 1,000 feet radius of the project fence line in addition to the proposed project would exceed the following thresholds of significance (BAAQMD 2017a):

- Not to exceed an increased cancer risk of >100 in one million
- Not to exceed increased non-cancer (i.e., Chronic or Acute) risk of >10 Hazard Index
- Not to exceed ambient $PM_{2.5}$ concentration increase >0.8 $\mu g/m^3$ annual average

3.3 Project Impacts

Threshold 1	Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact AQ-1 THE PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE 2017 CLEAN AIR PLAN. NO IMPACT WOULD OCCUR.

The California Clean Air Act requires air districts to create a Clean Air Plan that describes how the jurisdiction will meet air quality standards. These plans must be updated every three years. The most recently adopted air quality plan for the SFBAAB is the 2017 Clean Air Plan. To fulfill State ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors (ROG and NO_X) and reduce the transport of ozone and its precursors to neighboring air basins. In addition, the 2017 Clean Air Plan builds upon and enhances BAAQMD's efforts to reduce emissions of $PM_{2.5}$ and toxic air contaminants (TACs). The 2017 Clean Air Plan does not include control measures that apply directly to individual development projects. Instead, the control strategy includes measures related to stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-greenhouse gas pollutants (BAAQMD 2017c).

The 2017 Clean Air Plan focuses on two paramount goals (BAAQMD 2017c):

- Protect air quality and health at the regional and local scale by attaining all state and national air quality standards and eliminating disparities among Bay Area communities in cancer health risk from TACs; and
- Protect the climate by reducing Bay Area greenhouse gas emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050

Under BAAQMD's methodology, a determination of consistency with the 2017 Clean Air Plan should demonstrate that a project (BAAQMD 2017a):

- Supports the primary goals of the 2017 Clean Air Plan;
- Includes applicable control measures from the 2017 Clean Air Plan; and
- Would not disrupt or hinder implementation of any control measures in the 2017 Clean Air Plan.

A project that would not support the 2017 Clean Air Plan's goals would not be considered consistent with the plan. On an individual project basis, consistency with BAAQMD's quantitative thresholds is interpreted as demonstrating support for the 2017 Clean Air Plan's goals. As shown in the later discussions under Impact AQ-2 and AQ-3, the project would not result in exceedances of BAAQMD's thresholds for criteria air pollutants and thus would not conflict with the 2017 Clean Air Plan's goal to attain air quality standards. Furthermore, as shown in Table 5, the proposed project would include applicable control measures from the 2017 Clean Air Plan and would not disrupt or hinder implementation of such control measures. Therefore, the proposed project would result in no impact related to consistency with the 2017 Clean Air Plan.

Table 5 Project Consistency with Applicable Control Strategies of 2017 Clean Air Plan

Control Strategy	Evaluation
Direct new development to areas that are well served by transit, and conducive to bicycling and walking.	**Consistent**. The project would be an infill redevelopment project located in an area served by several existing transit facilities. Bus stops for AC Transit Route 216 are within 10 minutes of walking (approximately 0.2 mile) from the project site. Route 216 provides daily shuttle service connecting Silliman Recreation Center to the Union City Bay Area Rapid Transit (BART) Station via Stevenson Boulevard, Fremont BART, and Niles Boulevard. Route 200 and 232 are accessible from the NewPark Mall bus stop that is 20 minutes walking distance (approximately 0.8 mile) from the sites. These routes also connect to Union City and Fremont BART stations through various residential neighborhoods in north Newark. In addition, the site is near several bicycle paths, including a Class II Bike lane along Balentine Drive between Stevenson Boulevard and Cedar Boulevard. The project would also be within walking and bicycling distance of several commercial, retail, restaurants, and entertainment opportunities in the surrounding neighborhood. Therefore, the project would be located in an area that is well served by transit and conducive to bicycling and walking.
Accelerate the widespread adoption of electric vehicles.	**Consistent.** The project would be consistent with 2019 CALGreen, which requires that new construction include “EV Capable” parking spaces, which are equipped to support future installation of charging stations.
Expand the production of low-carbon, renewable energy by promoting on-site technologies such as rooftop solar, wind and ground-source heat pumps.	**Consistent**. The project would include zones for the future installation of rooftop solar PV system, which would expand the production of low-carbon, renewable energy.
Promote energy and water efficiency in both new and existing buildings.	**Consistent.** The project would involve the replacement of an existing restaurant with a new hotel development that would be required to comply with 2019 CALGreen standards, which include measures for energy and water efficiency.

Source: BAAQMD 2017c

Threshold 2 Would the project 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?

Impact AQ-2 PROJECT CONSTRUCTION AND OPERATION WOULD GENERATE CRITERIA AIR POLLUTANTS, WHICH WOULD AFFECT REGIONAL AND LOCAL AIR QUALITY. HOWEVER, CONSTRUCTION-RELATED EMISSIONS OF CRITERIA AIR POLLUTANTS WOULD NOT EXCEED BAAQMD THRESHOLDS, AND THE PROJECT WOULD FALL BELOW THE BAAQMD OPERATIONAL SCREENING SIZE. THEREFORE, THE 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. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction Emissions

Project construction would generate temporary air pollutant emissions associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction equipment and construction vehicles in addition to ROG emissions that would be released during the drying phase of architectural coating. Construction would occur over approximately 18 months, and approximately 450 cubic yards of material would be exported off site. Table 6 summarizes the estimated maximum daily emissions of pollutants during project construction. As shown therein, construction-related emissions would not exceed BAAQMD thresholds. Therefore, project construction 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. Impacts would be less than significant.

Table 6 Estimated Daily Construction Emissions

	ROG	NO_X	CO	SO_2	Exhaust PM_{10}	Exhaust $PM_{2.5}$
Maximum Construction Emissions (lbs/day)	25	35	31	0.1	2	1
BAAQMD Thresholds[1]	54	54	N/A	N/A	82	54
Threshold Exceeded?	**No**	**No**	**N/A**	**N/A**	**No**	**No**

ROG = reactive organic gases, NO_X = nitrogen oxides, CO = carbon monoxide, SO_2 = sulfur dioxide, PM_{10} = particulate matter measuring 10 microns in diameter or less, $PM_{2.5}$ = particulate matter measuring 2.5 microns or less in diameter; lbs/day = pounds per day, BAAQMD = Bay Area Air Quality Management District; N/A = Not available. The BAAQMD has not established recommended quantitative thresholds for construction-related emissions of CO and SO_2.

[1] The BAAQMD thresholds are in terms of average daily emissions while the project's emissions are presented in terms of maximum daily emissions, thereby providing a conservative estimate of project impacts because the project's average daily emissions would be lower than the maximum daily emissions presented in this table.

Notes: All emissions modeling was completed using CalEEMod in accordance with applicant-provided data. Some numbers may not add up due to rounding. Emissions presented are the highest of the winter and summer modeled emissions.

See Appendix A for model output results.

Although project emissions would not exceed the significance thresholds, the BAAQMD recommends implementing the following Basic Construction Mitigation Measures to reduce emissions of fugitive dust during construction activities (BAAQMD 2017a):

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) should be watered two times daily.
- All haul trucks transporting soil, sand, or other loose material off-site should be covered.
- All visible mud or dirt track-out onto adjacent public roads should be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads should be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved should be completed as soon as possible.
- Idling times should be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage should be provided for construction workers at all access points.
- All construction equipment should be maintained and properly tuned in accordance with manufacturer's specifications. All equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly-visible sign with the telephone number and person to contact at the City of Los Altos regarding dust complaints should be posted. This person should respond and take corrective action within 48 hours. The BAAQMD's phone number should also be visible to ensure compliance with applicable regulations.

Operational Emissions

The BAAQMD operational screening level size for a hotel project is 489 guest rooms. The proposed project would include 132 guest rooms and therefore is well below the screening size. As a result, per BAAQMD guidance, a detailed air quality assessment of the project's operational criteria air pollutant emissions is not necessary, and project operation 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. Impacts would be less than significant.

Threshold 3	Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-3 THE PROPOSED PROJECT WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL CONCENTRATIONS OF CO OR TACS. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Certain population groups, such as children, the elderly, and people with health problems, are particularly sensitive to air pollution. Therefore, the majority of sensitive receptor locations are schools, hospitals, and residences. The nearest sensitive receptors in the project vicinity include a multi-family residential development with several three-story buildings approximately 600 feet to the south, and a single-family residential neighborhood approximately 800 feet to the north on the other side of Interstate 880. Localized air quality impacts to sensitive receptors typically result from CO hotspots and TACs, which are discussed in the following subsections.

Carbon Monoxide Hotspots

As stated in the BAAQMD 2017 CEQA Air Quality Guidelines, the proposed project would result in a less than significant impact related to local CO concentrations if the project is consistent with an applicable CMP; would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The nearest CMP roadway segments are I-880 between Dixon Landing Road and Alvarado-Niles Road (approximately 0.1 mile to the north), which currently operates at Level of Service (LOS) F during both peak hours. The CMP's LOS standards are LOS F for this segment of I-880 (Alameda County Transportation Commission 2018). According to the project's Traffic Impact Study Report prepared by TJKM (2020; Appendix TRA), the project would have a minimal impact on the surrounding roadway network; therefore, the addition of project traffic to this intersection would not cause nearby CMP intersections to operate at worse LOS than under existing conditions. Accordingly, the project would have a minimal impact on the CMP network and would therefore be consistent with the applicable CMP.

The project would include 132 hotel guest rooms. As described in the Traffic Impact Study prepared for the proposed project, to determine existing traffic volumes along area roadways, a traffic count was taken along Balentine Road and Mowry School Road over a two-hour interval during AM peak hours. During a one-hour interval, 296 vehicles were counted. Therefore, existing traffic volumes at the intersections that would be affected by these new trips are lower than the 44,000 vehicles per hour screening threshold above. Moreover, based on the Traffic Impact Study, the project would result in a net increase of about 62 vehicle trips during the AM peak hour and 37 trips during the PM peak hour (TJKM 2022). Therefore, the increase in project trip generation would not exceed the 44,000 vehicles per hour screening threshold listed above. Therefore, the impact of localized CO emissions would be less than significant.

Toxic Air Contaminants

TACs are defined by California law as air pollutants that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. The following subsections discuss the project's potential to result in impacts related to TAC emissions during construction and operation.

Construction

Construction-related activities would result in temporary project-generated emissions of diesel particulate matter (DPM) exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, grading, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of DPM (discussed in the following paragraphs) outweighs the potential non-cancer health impacts (CARB 2020) and is therefore the focus of this analysis.

Generation of DPM from construction projects typically occurs in a single area for a short period. Construction of the proposed project would occur over approximately 18 months. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the California Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the duration of proposed construction activities (i.e., 18 months) is approximately five percent of the total exposure period used for 30-year health risk calculations. Current models and methodologies for conducting health-risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities, resulting in difficulties in producing accurate estimates of health risk (BAAQMD 2017a).

The maximum PM_{10} and $PM_{2.5}$ emissions would occur during demolition, site preparation and grading activities. These activities would last for approximately 50 days. PM emissions would decrease for the remaining construction period because construction activities such as building construction and architectural coating would require less intensive construction equipment. While the maximum DPM emissions associated with demolition, site preparation, and grading activities would only occur for a portion of the overall construction period, these activities represent the worst-case condition for the total construction period. This would represent less than one percent of the total 30-year exposure period for health risk calculation. In addition, the nearest sensitive receptors are residential buildings located approximately 600 feet away from the project site and therefore would be affected even less by DPM emissions generated during project construction as these emissions would dissipate and reduce in concentration over distance. Given the aforementioned discussion, DPM generated by project construction would not create conditions where the probability is greater than one in one million of contracting cancer for the Maximally

Exposed Individual or to generate ground-level concentrations of non-carcinogenic TACs that exceed a Hazard Index greater than one for the Maximally Exposed Individual. Therefore, project construction would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant.

Operation

Sources of TACs include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities (BAAQMD 2017a). The proposed project does not involve any of these uses. Therefore, project operation would not expose sensitive receptors to elevated concentrations of TAC emissions, and no impact would occur.

Threshold 4	Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact AQ-4 **THE PROPOSED PROJECT WOULD NOT RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE. NO IMPACT WOULD OCCUR.**

During construction activities, heavy equipment and vehicles would emit odors associated with vehicle and engine exhaust and during idling. However, these odors would be intermittent and temporary and would cease upon completion. Overall, project construction would not generate objectionable odors affecting a substantial number of people. Construction-related odor impacts would be less than significant.

Table 3-3 in the BAAQMD 2017 *CEQA Air Quality Guidelines* provides screening distances for land uses that have the potential to generate substantial odor complaints. The uses in the table include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants (BAAQMD 2017a). Hotels are not included in this list, and operation of the project would not generate objectionable odors that would affect a substantial number of people. No operational odor impacts would occur.

3.4 Cumulative Impacts

The geographic scope for the cumulative air quality impact analysis is the SFBAAB. Because the SFBAAB is designated non-attainment for the state and federal ozone standards, the state and federal $PM_{2.5}$ standards, and the state PM_{10} standard, there are existing significant cumulative air quality impacts related to these pollutants. As discussed in the BAAQMD 2017 *CEQA Air Quality Guidelines*, “by its very nature, air pollution is largely a cumulative impact…if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region’s existing air quality conditions” (BAAQMD 2017a). As discussed under Impact AQ-1 through Impact AQ-4, air pollutant emissions generated by the proposed project would not exceed the BAAQMD’s thresholds of significance. Therefore, the project’s contribution to significant cumulative air quality impacts in the SFBAAB would not be cumulatively considerable.

4 Conclusions

All air quality impacts related to project construction and operation would be less than significant. The project would not conflict with the 2017 Clean Air Plan's goal to attain air quality standards, would include applicable control measures from the 2017 Clean Air Plan, and would not disrupt or hinder implementation of such control measures; therefore, the project would be consistent with the 2017 Clean Air Plan. Project construction and operation would not 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. Project construction and operation would not expose sensitive receptors to substantial pollutant concentrations from CO hotspots and TACs. The project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

5 References

Alameda County Transportation Commission. 2018. 2018 Level of Service Monitoring, on the Congestion Management Program Roadway Network. https://www.alamedactc.org/wp-content/uploads/2019/02/Rpt_2018_LOS_Monitoring_Final_20190214-1.pdf (accessed January 2021).

Bay Area Air Quality Management District (BAAQMD). 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf (accessed November 2020).

____. 2014. Improving Air Quality & Health in Bay area Communities. April 2014. https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program/documents (accessed November 2020).

____. 2017a. California Environmental Quality Act Air Quality Guidelines. San Francisco, CA. May 2017. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en (accessed October 2020).

____. 2017b. Air Quality Standards and Attainment Status. http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status (accessed October 2020).

____. 2017c. Spare the Air Cool Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. Final 2017 Clean Air Plan. Adopted April 19, 2017. http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en (accessed October 2020).

California Air Resources Board (CARB). 2020. “Overview: Diesel Exhaust & Health.” https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health (accessed October 2020).

____. 2022. Top 4 Summary: Select Pollutant, Years, & Area. https://www.arb.ca.gov/adam/topfour/topfour1.php (accessed June 2022).

Newark, City of. 2013. City of Newark General Plan. Accessible at: https://www.newark.org/home/showpublisheddocument?id=76 (accessed January 2021).

South Coast Air Quality Management District. 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. May 6, 2005. http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf (accessed September 2020).

United States Environmental Protection Agency (U.S. EPA). 2013. Policy Assessment for the Review of the Lead National Ambient Air Quality Standards, External Review Draft. https://www3.epa.gov/ttn/naaqs/standards/pb/data/010913_pb-draft-pa.pdf (accessed November 2020).

____. 2020. “Nonattainment Area for Criteria Pollutants (Green Book).” Last modified: August 31, 2020. https://www.epa.gov/green-book (accessed November 2020).

____. 2022. Outdoor Air Quality Data – Monitor Values Report.” https://www.epa.gov/outdoor-air-quality-data/monitor-values-report (accessed June 2022).

Appendix E

Air Quality Modeling Results

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

39888 Balentine Drive Hotel Project

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	96.00	Space	0.86	38,400.00	0
Hotel	132.00	Room	0.80	75,704.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2024
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy intensity not relevant for AQ

Land Use - per applicant provided site plan

Construction Phase - Applicant indicated shortened construction schedule from 24 months to 18 months. Phases adjusted accordingly based on applicant provided data request (proportional).

Off-road Equipment - per data request

Off-road Equipment - per data request

Off-road Equipment - per data request

Off-road Equipment - per data request

Off-road Equipment - per data request

Off-road Equipment - per data request

Trips and VMT - default

Demolition - per project description

Grading -

Construction Off-road Equipment Mitigation - per BAAQMD Reg 6: PM Rule

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	32.00
tblConstructionPhase	NumDays	2.00	9.00
tblConstructionPhase	NumDays	4.00	9.00
tblConstructionPhase	NumDays	200.00	294.00
tblConstructionPhase	NumDays	10.00	17.00
tblConstructionPhase	NumDays	10.00	32.00
tblLandUse	LandUseSquareFeet	191,664.00	75,704.00
tblLandUse	LotAcreage	4.40	0.80
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6697	34.7815	31.0182	0.0732	1.8372	1.5125	3.3497	0.2371	1.3923	1.6294	0.0000	7,081.4402	7,081.4402	2.2163	0.0729	7,138.5140
2023	1.0950	9.8106	13.0590	0.0242	0.5230	0.5042	1.0272	0.1416	0.4648	0.6065	0.0000	2,388.6805	2,388.6805	0.5355	0.0694	2,422.7427
2024	25.1977	7.3049	11.3743	0.0177	0.1232	0.3471	0.4703	0.0327	0.3201	0.3528	0.0000	1,702.8419	1,702.8419	0.5112	2.4200e-003	1,716.3417
Maximum	**25.1977**	**34.7815**	**31.0182**	**0.0732**	**1.8372**	**1.5125**	**3.3497**	**0.2371**	**1.3923**	**1.6294**	**0.0000**	**7,081.4402**	**7,081.4402**	**2.2163**	**0.0729**	**7,138.5140**

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					
2022	3.6697	34.7815	31.0182	0.0732	0.9623	1.5125	2.4748	0.1427	1.3923	1.5349	0.0000	7,081.4402	7,081.4402	2.2163	0.0729	7,138.5140
2023	1.0950	9.8106	13.0590	0.0242	0.5230	0.5042	1.0272	0.1416	0.4648	0.6065	0.0000	2,388.6805	2,388.6805	0.5355	0.0694	2,422.7427
2024	25.1977	7.3049	11.3743	0.0177	0.1232	0.3471	0.4703	0.0327	0.3201	0.3528	0.0000	1,702.8419	1,702.8419	0.5112	2.4200e-003	1,716.3417
Maximum	**25.1977**	**34.7815**	**31.0182**	**0.0732**	**0.9623**	**1.5125**	**2.4748**	**0.1427**	**1.3923**	**1.5349**	**0.0000**	**7,081.4402**	**7,081.4402**	**2.2163**	**0.0729**	**7,138.5140**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	35.23	0.00	18.05	22.96	0.00	3.65	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	1.8565	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532
Energy	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550
Mobile	2.6188	2.2587	20.0523	0.0420	4.4129	0.0303	4.4431	1.1753	0.0282	1.2035		4,345.5208	4,345.5208	0.2747	0.1990	4,411.6948
Total	**4.5563**	**2.9954**	**20.6942**	**0.0464**	**4.4129**	**0.0863**	**4.4992**	**1.1753**	**0.0842**	**1.2596**		**5,229.3737**	**5,229.3737**	**0.2918**	**0.2152**	**5,300.8029**

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	1.8565	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532
Energy	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550
Mobile	2.6188	2.2587	20.0523	0.0420	4.4129	0.0303	4.4431	1.1753	0.0282	1.2035		4,345.5208	4,345.5208	0.2747	0.1990	4,411.6948
Total	**4.5563**	**2.9954**	**20.6942**	**0.0464**	**4.4129**	**0.0863**	**4.4992**	**1.1753**	**0.0842**	**1.2596**		**5,229.3737**	**5,229.3737**	**0.2918**	**0.2152**	**5,300.8029**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2022	10/14/2022	5	32	
2	Site Preparation	Site Preparation	10/15/2022	10/27/2022	5	9	
3	Grading	Grading	10/28/2022	11/9/2022	5	9	
4	Building Construction	Building Construction	11/10/2022	12/26/2023	5	294	
5	Paving	Paving	12/27/2023	1/18/2024	5	17	
6	Architectural Coating	Architectural Coating	1/19/2024	3/4/2024	5	32	

Acres of Grading (Site Preparation Phase): 9

Acres of Grading (Grading Phase): 13.5

Acres of Paving: 0.86

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 113,556; Non-Residential Outdoor: 37,852; Striped Parking Area: 2,304 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	1	8.00	158	0.38
Demolition	Off-Highway Trucks	1	8.00	402	0.38
Demolition	Plate Compactors	1	8.00	8	0.43
Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Demolition	Trenchers		1	8.00	78	0.50
Site Preparation	Excavators		1	8.00	158	0.38
Site Preparation	Plate Compactors		1	7.00	8	0.43
Site Preparation	Rollers		1	8.00	80	0.38
Site Preparation	Scrapers		1	8.00	367	0.48
Site Preparation	Skid Steer Loaders		1	7.00	65	0.37
Site Preparation	Surfacing Equipment		1	8.00	263	0.30
Site Preparation	Tractors/Loaders/Backhoes		2	8.00	97	0.37
Site Preparation	Trenchers		1	8.00	78	0.50
Grading	Excavators		1	8.00	158	0.38
Grading	Graders		1	8.00	187	0.41
Grading	Off-Highway Trucks		2	8.00	402	0.38
Grading	Paving Equipment		1	8.00	132	0.36
Grading	Plate Compactors		1	8.00	8	0.43
Grading	Rollers		1	8.00	80	0.38
Grading	Scrapers		1	8.00	367	0.48
Grading	Skid Steer Loaders		1	6.00	65	0.37
Grading	Tractors/Loaders/Backhoes		2	7.00	97	0.37
Grading	Trenchers		1	8.00	78	0.50
Building Construction	Excavators		1	8.00	158	0.38
Building Construction	Forklifts		1	6.00	89	0.20
Building Construction	Plate Compactors		1	8.00	8	0.43
Building Construction	Skid Steer Loaders		1	8.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes		2	6.00	97	0.37
Building Construction	Trenchers		1	8.00	78	0.50
Paving	Pavers		1	6.00	130	0.42
Paving	Paving Equipment		1	8.00	132	0.36
Paving	Plate Compactors		1	8.00	8	0.43
Paving	Rollers		1	7.00	80	0.38

Paving	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Architectural Coating	Air Compressors	0	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
Demolition	7	18.00	0.00	45.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	48.00	19.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 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					
Fugitive Dust					0.3062	0.0000	0.3062	0.0464	0.0000	0.0464			0.0000			0.0000
Off-Road	1.5338	13.7015	15.2864	0.0305		0.6959	0.6959		0.6410	0.6410		2,943.2985	2,943.2985	0.9444		2,966.9073
Total	**1.5338**	**13.7015**	**15.2864**	**0.0305**	**0.3062**	**0.6959**	**1.0020**	**0.0464**	**0.6410**	**0.6873**		**2,943.2985**	**2,943.2985**	**0.9444**		**2,966.9073**

3.2 Demolition - 2022

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	6.6200e-003	0.2335	0.0512	8.9000e-004	0.0246	2.1700e-003	0.0268	6.7400e-003	2.0800e-003	8.8200e-003		97.1553	97.1553	3.2000e-003	0.0154	101.8209
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0524	0.0316	0.4653	1.3200e-003	0.1479	7.7000e-004	0.1486	0.0392	7.1000e-004	0.0399		134.6513	134.6513	3.6700e-003	3.3600e-003	135.7437
Total	**0.0590**	**0.2650**	**0.5165**	**2.2100e-003**	**0.1725**	**2.9400e-003**	**0.1754**	**0.0460**	**2.7900e-003**	**0.0488**		**231.8066**	**231.8066**	**6.8700e-003**	**0.0188**	**237.5646**

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					0.1378	0.0000	0.1378	0.0209	0.0000	0.0209			0.0000			0.0000
Off-Road	1.5338	13.7015	15.2864	0.0305		0.6959	0.6959		0.6410	0.6410	0.0000	2,943.2985	2,943.2985	0.9444		2,966.9073
Total	**1.5338**	**13.7015**	**15.2864**	**0.0305**	**0.1378**	**0.6959**	**0.8336**	**0.0209**	**0.6410**	**0.6618**	**0.0000**	**2,943.2985**	**2,943.2985**	**0.9444**		**2,966.9073**

3.2 Demolition - 2022

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	6.6200e-003	0.2335	0.0512	8.9000e-004	0.0246	2.1700e-003	0.0268	6.7400e-003	2.0800e-003	8.8200e-003		97.1553	97.1553	3.2000e-003	0.0154	101.8209
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0524	0.0316	0.4653	1.3200e-003	0.1479	7.7000e-004	0.1486	0.0392	7.1000e-004	0.0399		134.6513	134.6513	3.6700e-003	3.3600e-003	135.7437
Total	**0.0590**	**0.2650**	**0.5165**	**2.2100e-003**	**0.1725**	**2.9400e-003**	**0.1754**	**0.0460**	**2.7900e-003**	**0.0488**		**231.8066**	**231.8066**	**6.8700e-003**	**0.0188**	**237.5646**

3.3 Site Preparation - 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					
Fugitive Dust					1.0605	0.0000	1.0605	0.1145	0.0000	0.1145			0.0000			0.0000
Off-Road	2.1613	22.3768	21.5790	0.0416		1.0729	1.0729		0.9877	0.9877		4,014.1146	4,014.1146	1.2916		4,046.4052
Total	**2.1613**	**22.3768**	**21.5790**	**0.0416**	**1.0605**	**1.0729**	**2.1334**	**0.1145**	**0.9877**	**1.1023**		**4,014.1146**	**4,014.1146**	**1.2916**		**4,046.4052**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0669	0.0403	0.5946	1.6900e-003	0.1889	9.9000e-004	0.1899	0.0501	9.1000e-004	0.0510		172.0545	172.0545	4.6900e-003	4.2900e-003	173.4502
Total	**0.0669**	**0.0403**	**0.5946**	**1.6900e-003**	**0.1889**	**9.9000e-004**	**0.1899**	**0.0501**	**9.1000e-004**	**0.0510**		**172.0545**	**172.0545**	**4.6900e-003**	**4.2900e-003**	**173.4502**

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					0.4772	0.0000	0.4772	0.0515	0.0000	0.0515			0.0000			0.0000
Off-Road	2.1613	22.3768	21.5790	0.0416		1.0729	1.0729		0.9877	0.9877	0.0000	4,014.1146	4,014.1146	1.2916		4,046.4052
Total	**2.1613**	**22.3768**	**21.5790**	**0.0416**	**0.4772**	**1.0729**	**1.5501**	**0.0515**	**0.9877**	**1.0393**	**0.0000**	**4,014.1146**	**4,014.1146**	**1.2916**		**4,046.4052**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0669	0.0403	0.5946	1.6900e-003	0.1889	9.9000e-004	0.1899	0.0501	9.1000e-004	0.0510		172.0545	172.0545	4.6900e-003	4.2900e-003	173.4502
Total	**0.0669**	**0.0403**	**0.5946**	**1.6900e-003**	**0.1889**	**9.9000e-004**	**0.1899**	**0.0501**	**9.1000e-004**	**0.0510**		**172.0545**	**172.0545**	**4.6900e-003**	**4.2900e-003**	**173.4502**

3.4 Grading - 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					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	3.5824	34.7288	30.2427	0.0710		1.5112	1.5112		1.3911	1.3911		6,857.0213	6,857.0213	2.2101		6,912.2745
Total	**3.5824**	**34.7288**	**30.2427**	**0.0710**	**1.5908**	**1.5112**	**3.1020**	**0.1718**	**1.3911**	**1.5629**		**6,857.0213**	**6,857.0213**	**2.2101**		**6,912.2745**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0873	0.0526	0.7755	2.2100e-003	0.2464	1.2900e-003	0.2477	0.0654	1.1900e-003	0.0666		224.4189	224.4189	6.1200e-003	5.6000e-003	226.2394
Total	**0.0873**	**0.0526**	**0.7755**	**2.2100e-003**	**0.2464**	**1.2900e-003**	**0.2477**	**0.0654**	**1.1900e-003**	**0.0666**		**224.4189**	**224.4189**	**6.1200e-003**	**5.6000e-003**	**226.2394**

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					0.7158	0.0000	0.7158	0.0773	0.0000	0.0773			0.0000			0.0000
Off-Road	3.5824	34.7288	30.2427	0.0710		1.5112	1.5112		1.3911	1.3911	0.0000	6,857.0213	6,857.0213	2.2101		6,912.2745
Total	**3.5824**	**34.7288**	**30.2427**	**0.0710**	**0.7158**	**1.5112**	**2.2271**	**0.0773**	**1.3911**	**1.4684**	**0.0000**	**6,857.0213**	**6,857.0213**	**2.2101**		**6,912.2745**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0873	0.0526	0.7755	2.2100e-003	0.2464	1.2900e-003	0.2477	0.0654	1.1900e-003	0.0666		224.4189	224.4189	6.1200e-003	5.6000e-003	226.2394
Total	**0.0873**	**0.0526**	**0.7755**	**2.2100e-003**	**0.2464**	**1.2900e-003**	**0.2477**	**0.0654**	**1.1900e-003**	**0.0666**		**224.4189**	**224.4189**	**6.1200e-003**	**5.6000e-003**	**226.2394**

3.5 Building Construction - 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					
Off-Road	1.0083	9.6412	11.6740	0.0169		0.5573	0.5573		0.5135	0.5135		1,624.7169	1,624.7169	0.5179		1,637.6643
Total	**1.0083**	**9.6412**	**11.6740**	**0.0169**		**0.5573**	**0.5573**		**0.5135**	**0.5135**		**1,624.7169**	**1,624.7169**	**0.5179**		**1,637.6643**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0410	1.0250	0.3044	4.0200e-003	0.1287	0.0109	0.1396	0.0370	0.0104	0.0475		431.2731	431.2731	9.3900e-003	0.0639	450.5511
Worker	0.1396	0.0842	1.2409	3.5300e-003	0.3943	2.0600e-003	0.3964	0.1046	1.9000e-003	0.1065		359.0702	359.0702	9.7900e-003	8.9500e-003	361.9831
Total	**0.1806**	**1.1092**	**1.5453**	**7.5500e-003**	**0.5230**	**0.0130**	**0.5360**	**0.1416**	**0.0123**	**0.1540**		**790.3433**	**790.3433**	**0.0192**	**0.0729**	**812.5342**

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	1.0083	9.6412	11.6740	0.0169		0.5573	0.5573		0.5135	0.5135	0.0000	1,624.7169	1,624.7169	0.5179		1,637.6643
Total	**1.0083**	**9.6412**	**11.6740**	**0.0169**		**0.5573**	**0.5573**		**0.5135**	**0.5135**	**0.0000**	**1,624.7169**	**1,624.7169**	**0.5179**		**1,637.6643**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0410	1.0250	0.3044	4.0200e-003	0.1287	0.0109	0.1396	0.0370	0.0104	0.0475		431.2731	431.2731	9.3900e-003	0.0639	450.5511
Worker	0.1396	0.0842	1.2409	3.5300e-003	0.3943	2.0600e-003	0.3964	0.1046	1.9000e-003	0.1065		359.0702	359.0702	9.7900e-003	8.9500e-003	361.9831
Total	**0.1806**	**1.1092**	**1.5453**	**7.5500e-003**	**0.5230**	**0.0130**	**0.5360**	**0.1416**	**0.0123**	**0.1540**		**790.3433**	**790.3433**	**0.0192**	**0.0729**	**812.5342**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9445	8.9211	11.6513	0.0169		0.4973	0.4973		0.4583	0.4583		1,625.6590	1,625.6590	0.5182		1,638.6140
Total	**0.9445**	**8.9211**	**11.6513**	**0.0169**		**0.4973**	**0.4973**		**0.4583**	**0.4583**		**1,625.6590**	**1,625.6590**	**0.5182**		**1,638.6140**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0207	0.8149	0.2603	3.8500e-003	0.1287	4.9300e-003	0.1336	0.0371	4.7200e-003	0.0418		413.1759	413.1759	8.4600e-003	0.0611	431.5893
Worker	0.1298	0.0746	1.1475	3.4200e-003	0.3943	1.9600e-003	0.3963	0.1046	1.8000e-003	0.1064		349.8456	349.8456	8.8200e-003	8.3000e-003	352.5395
Total	**0.1505**	**0.8895**	**1.4077**	**7.2700e-003**	**0.5230**	**6.8900e-003**	**0.5299**	**0.1416**	**6.5200e-003**	**0.1482**		**763.0215**	**763.0215**	**0.0173**	**0.0694**	**784.1288**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9445	8.9211	11.6513	0.0169		0.4973	0.4973		0.4583	0.4583	0.0000	1,625.6590	1,625.6590	0.5182		1,638.6140
Total	**0.9445**	**8.9211**	**11.6513**	**0.0169**		**0.4973**	**0.4973**		**0.4583**	**0.4583**	**0.0000**	**1,625.6590**	**1,625.6590**	**0.5182**		**1,638.6140**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0207	0.8149	0.2603	3.8500e-003	0.1287	4.9300e-003	0.1336	0.0371	4.7200e-003	0.0418		413.1759	413.1759	8.4600e-003	0.0611	431.5893
Worker	0.1298	0.0746	1.1475	3.4200e-003	0.3943	1.9600e-003	0.3963	0.1046	1.8000e-003	0.1064		349.8456	349.8456	8.8200e-003	8.3000e-003	352.5395
Total	**0.1505**	**0.8895**	**1.4077**	**7.2700e-003**	**0.5230**	**6.8900e-003**	**0.5299**	**0.1416**	**6.5200e-003**	**0.1482**		**763.0215**	**763.0215**	**0.0173**	**0.0694**	**784.1288**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7920	7.7465	11.0129	0.0166		0.3833	0.3833		0.3534	0.3534		1,595.8567	1,595.8567	0.5086		1,608.5707
Paving	0.1325					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9245**	**7.7465**	**11.0129**	**0.0166**		**0.3833**	**0.3833**		**0.3534**	**0.3534**		**1,595.8567**	**1,595.8567**	**0.5086**		**1,608.5707**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0406	0.0233	0.3586	1.0700e-003	0.1232	6.1000e-004	0.1238	0.0327	5.6000e-004	0.0333		109.3267	109.3267	2.7600e-003	2.5900e-003	110.1686
Total	**0.0406**	**0.0233**	**0.3586**	**1.0700e-003**	**0.1232**	**6.1000e-004**	**0.1238**	**0.0327**	**5.6000e-004**	**0.0333**		**109.3267**	**109.3267**	**2.7600e-003**	**2.5900e-003**	**110.1686**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7920	7.7465	11.0129	0.0166		0.3833	0.3833		0.3534	0.3534	0.0000	1,595.8567	1,595.8567	0.5086		1,608.5707
Paving	0.1325					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9245**	**7.7465**	**11.0129**	**0.0166**		**0.3833**	**0.3833**		**0.3534**	**0.3534**	**0.0000**	**1,595.8567**	**1,595.8567**	**0.5086**		**1,608.5707**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0406	0.0233	0.3586	1.0700e-003	0.1232	6.1000e-004	0.1238	0.0327	5.6000e-004	0.0333		109.3267	109.3267	2.7600e-003	2.5900e-003	110.1686
Total	**0.0406**	**0.0233**	**0.3586**	**1.0700e-003**	**0.1232**	**6.1000e-004**	**0.1238**	**0.0327**	**5.6000e-004**	**0.0333**		**109.3267**	**109.3267**	**2.7600e-003**	**2.5900e-003**	**110.1686**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7579	7.2841	11.0401	0.0166		0.3465	0.3465		0.3196	0.3196		1,596.2277	1,596.2277	0.5087		1,608.9447
Paving	0.1325					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8905**	**7.2841**	**11.0401**	**0.0166**		**0.3465**	**0.3465**		**0.3196**	**0.3196**		**1,596.2277**	**1,596.2277**	**0.5087**		**1,608.9447**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0379	0.0208	0.3342	1.0300e-003	0.1232	5.8000e-004	0.1238	0.0327	5.4000e-004	0.0332		106.6142	106.6142	2.4900e-003	2.4200e-003	107.3970
Total	**0.0379**	**0.0208**	**0.3342**	**1.0300e-003**	**0.1232**	**5.8000e-004**	**0.1238**	**0.0327**	**5.4000e-004**	**0.0332**		**106.6142**	**106.6142**	**2.4900e-003**	**2.4200e-003**	**107.3970**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7579	7.2841	11.0401	0.0166		0.3465	0.3465		0.3196	0.3196	0.0000	1,596.2277	1,596.2277	0.5087		1,608.9447
Paving	0.1325					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8905**	**7.2841**	**11.0401**	**0.0166**		**0.3465**	**0.3465**		**0.3196**	**0.3196**	**0.0000**	**1,596.2277**	**1,596.2277**	**0.5087**		**1,608.9447**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0379	0.0208	0.3342	1.0300e-003	0.1232	5.8000e-004	0.1238	0.0327	5.4000e-004	0.0332		106.6142	106.6142	2.4900e-003	2.4200e-003	107.3970
Total	**0.0379**	**0.0208**	**0.3342**	**1.0300e-003**	**0.1232**	**5.8000e-004**	**0.1238**	**0.0327**	**5.4000e-004**	**0.0332**		**106.6142**	**106.6142**	**2.4900e-003**	**2.4200e-003**	**107.3970**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	25.1724					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	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	**25.1724**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0253	0.0139	0.2228	6.9000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		71.0761	71.0761	1.6600e-003	1.6100e-003	71.5980
Total	**0.0253**	**0.0139**	**0.2228**	**6.9000e-004**	**0.0822**	**3.9000e-004**	**0.0825**	**0.0218**	**3.6000e-004**	**0.0222**		**71.0761**	**71.0761**	**1.6600e-003**	**1.6100e-003**	**71.5980**

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	25.1724					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	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	**25.1724**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0253	0.0139	0.2228	6.9000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		71.0761	71.0761	1.6600e-003	1.6100e-003	71.5980
Total	**0.0253**	**0.0139**	**0.2228**	**6.9000e-004**	**0.0822**	**3.9000e-004**	**0.0825**	**0.0218**	**3.6000e-004**	**0.0222**		**71.0761**	**71.0761**	**1.6600e-003**	**1.6100e-003**	**71.5980**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6188	2.2587	20.0523	0.0420	4.4129	0.0303	4.4431	1.1753	0.0282	1.2035		4,345.5208	4,345.5208	0.2747	0.1990	4,411.6948
Unmitigated	2.6188	2.2587	20.0523	0.0420	4.4129	0.0303	4.4431	1.1753	0.0282	1.2035		4,345.5208	4,345.5208	0.2747	0.1990	4,411.6948

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,103.52	1,081.08	785.40	2,004,177	2,004,177
Parking Lot	0.00	0.00	0.00		
Total	1,103.52	1,081.08	785.40	2,004,177	2,004,177

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
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Parking Lot	9.50	7.30	7.30	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
Hotel	0.553342	0.058522	0.188738	0.121080	0.023016	0.005623	0.010412	0.007562	0.000987	0.000568	0.026444	0.000834	0.002871
Parking Lot	0.553342	0.058522	0.188738	0.121080	0.023016	0.005623	0.010412	0.007562	0.000987	0.000568	0.026444	0.000834	0.002871

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550
NaturalGas Unmitigated	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550

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					
Hotel	7512.33	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0810**	**0.7365**	**0.6187**	**4.4200e-003**		**0.0560**	**0.0560**		**0.0560**	**0.0560**		**883.8030**	**883.8030**	**0.0169**	**0.0162**	**889.0550**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	7.51233	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0810**	**0.7365**	**0.6187**	**4.4200e-003**		**0.0560**	**0.0560**		**0.0560**	**0.0560**		**883.8030**	**883.8030**	**0.0169**	**0.0162**	**889.0550**

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	1.8565	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532
Unmitigated	1.8565	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532

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	0.2207					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6337					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1500e-003	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532
Total	**1.8565**	**2.1000e-004**	**0.0232**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**0.0499**	**0.0499**	**1.3000e-004**		**0.0532**

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	0.2207					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6337					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1500e-003	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532
Total	**1.8565**	**2.1000e-004**	**0.0232**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**0.0499**	**0.0499**	**1.3000e-004**		**0.0532**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

39888 Balentine Drive Hotel Project

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	96.00	Space	0.86	38,400.00	0
Hotel	132.00	Room	0.80	75,704.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2024
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy intensity not relevant for AQ

Land Use - per applicant provided site plan

Construction Phase - Applicant indicated shortened construction schedule from 24 months to 18 months. Phases adjusted accordingly based on applicant provided data request (proportional).

Off-road Equipment - per data request

Off-road Equipment - per data request

Off-road Equipment - per data request

Off-road Equipment - per data request

Off-road Equipment - per data request

Off-road Equipment - per data request

Trips and VMT - default

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition - per project description

Grading -

Construction Off-road Equipment Mitigation - per BAAQMD Reg 6: PM Rule

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	32.00
tblConstructionPhase	NumDays	2.00	9.00
tblConstructionPhase	NumDays	4.00	9.00
tblConstructionPhase	NumDays	200.00	294.00
tblConstructionPhase	NumDays	10.00	17.00
tblConstructionPhase	NumDays	10.00	32.00
tblLandUse	LandUseSquareFeet	191,664.00	75,704.00
tblLandUse	LotAcreage	4.40	0.80
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

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					
2022	3.6715	34.7938	30.9824	0.0730	1.8372	1.5125	3.3497	0.2371	1.3923	1.6294	0.0000	7,065.4930	7,065.4930	2.2171	0.0743	7,122.8399
2023	1.0976	9.8754	13.0194	0.0240	0.5230	0.5042	1.0272	0.1416	0.4649	0.6065	0.0000	2,364.4738	2,364.4738	0.5366	0.0708	2,398.9848
2024	25.1984	7.3098	11.3613	0.0176	0.1232	0.3471	0.4703	0.0327	0.3201	0.3528	0.0000	1,695.3008	1,695.3008	0.5115	2.7800e-003	1,708.9179
Maximum	**25.1984**	**34.7938**	**30.9824**	**0.0730**	**1.8372**	**1.5125**	**3.3497**	**0.2371**	**1.3923**	**1.6294**	**0.0000**	**7,065.4930**	**7,065.4930**	**2.2171**	**0.0743**	**7,122.8399**

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					
2022	3.6715	34.7938	30.9824	0.0730	0.9623	1.5125	2.4748	0.1427	1.3923	1.5349	0.0000	7,065.4930	7,065.4930	2.2171	0.0743	7,122.8399
2023	1.0976	9.8754	13.0194	0.0240	0.5230	0.5042	1.0272	0.1416	0.4649	0.6065	0.0000	2,364.4738	2,364.4738	0.5366	0.0708	2,398.9848
2024	25.1984	7.3098	11.3613	0.0176	0.1232	0.3471	0.4703	0.0327	0.3201	0.3528	0.0000	1,695.3008	1,695.3008	0.5115	2.7800e-003	1,708.9179
Maximum	**25.1984**	**34.7938**	**30.9824**	**0.0730**	**0.9623**	**1.5125**	**2.4748**	**0.1427**	**1.3923**	**1.5349**	**0.0000**	**7,065.4930**	**7,065.4930**	**2.2171**	**0.0743**	**7,122.8399**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	35.23	0.00	18.05	22.96	0.00	3.65	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	1.8565	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532
Energy	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550
Mobile	2.3269	2.6022	21.8446	0.0397	4.4129	0.0303	4.4432	1.1753	0.0282	1.2035		4,105.8837	4,105.8837	0.3160	0.2188	4,178.9858
Total	**4.2645**	**3.3389**	**22.4865**	**0.0441**	**4.4129**	**0.0863**	**4.4992**	**1.1753**	**0.0843**	**1.2596**		**4,989.7366**	**4,989.7366**	**0.3331**	**0.2350**	**5,068.0940**

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	1.8565	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532
Energy	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550
Mobile	2.3269	2.6022	21.8446	0.0397	4.4129	0.0303	4.4432	1.1753	0.0282	1.2035		4,105.8837	4,105.8837	0.3160	0.2188	4,178.9858
Total	**4.2645**	**3.3389**	**22.4865**	**0.0441**	**4.4129**	**0.0863**	**4.4992**	**1.1753**	**0.0843**	**1.2596**		**4,989.7366**	**4,989.7366**	**0.3331**	**0.2350**	**5,068.0940**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2022	10/14/2022	5	32	
2	Site Preparation	Site Preparation	10/15/2022	10/27/2022	5	9	
3	Grading	Grading	10/28/2022	11/9/2022	5	9	
4	Building Construction	Building Construction	11/10/2022	12/26/2023	5	294	
5	Paving	Paving	12/27/2023	1/18/2024	5	17	
6	Architectural Coating	Architectural Coating	1/19/2024	3/4/2024	5	32	

Acres of Grading (Site Preparation Phase): 9

Acres of Grading (Grading Phase): 13.5

Acres of Paving: 0.86

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 113,556; Non-Residential Outdoor: 37,852; Striped Parking Area: 2,304 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	1	8.00	158	0.38
Demolition	Off-Highway Trucks	1	8.00	402	0.38
Demolition	Plate Compactors	1	8.00	8	0.43
Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Demolition	Trenchers	1	8.00	78	0.50
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Plate Compactors	1	7.00	8	0.43
Site Preparation	Rollers	1	8.00	80	0.38
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Skid Steer Loaders	1	7.00	65	0.37
Site Preparation	Surfacing Equipment	1	8.00	263	0.30
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Trenchers	1	8.00	78	0.50
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Off-Highway Trucks	2	8.00	402	0.38
Grading	Paving Equipment	1	8.00	132	0.36
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rollers	1	8.00	80	0.38
Grading	Scrapers	1	8.00	367	0.48
Grading	Skid Steer Loaders	1	6.00	65	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Plate Compactors	1	8.00	8	0.43
Building Construction	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Trenchers	1	8.00	78	0.50
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Rollers	1	7.00	80	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Architectural Coating	Air Compressors	0	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
Demolition	7	18.00	0.00	45.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	48.00	19.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 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					
Fugitive Dust					0.3062	0.0000	0.3062	0.0464	0.0000	0.0464			0.0000			0.0000
Off-Road	1.5338	13.7015	15.2864	0.0305		0.6959	0.6959		0.6410	0.6410		2,943.2985	2,943.2985	0.9444		2,966.9073
Total	**1.5338**	**13.7015**	**15.2864**	**0.0305**	**0.3062**	**0.6959**	**1.0020**	**0.0464**	**0.6410**	**0.6873**		**2,943.2985**	**2,943.2985**	**0.9444**		**2,966.9073**

3.2 Demolition - 2022

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	6.4700e-003	0.2463	0.0520	8.9000e-004	0.0246	2.1700e-003	0.0268	6.7400e-003	2.0800e-003	8.8200e-003		97.1869	97.1869	3.2000e-003	0.0154	101.8541
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0535	0.0390	0.4438	1.2300e-003	0.1479	7.7000e-004	0.1486	0.0392	7.1000e-004	0.0399		125.0830	125.0830	4.1600e-003	3.8700e-003	126.3392
Total	**0.0600**	**0.2853**	**0.4958**	**2.1200e-003**	**0.1725**	**2.9400e-003**	**0.1754**	**0.0460**	**2.7900e-003**	**0.0488**		**222.2698**	**222.2698**	**7.3600e-003**	**0.0193**	**228.1933**

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					0.1378	0.0000	0.1378	0.0209	0.0000	0.0209			0.0000			0.0000
Off-Road	1.5338	13.7015	15.2864	0.0305		0.6959	0.6959		0.6410	0.6410	0.0000	2,943.2985	2,943.2985	0.9444		2,966.9073
Total	**1.5338**	**13.7015**	**15.2864**	**0.0305**	**0.1378**	**0.6959**	**0.8336**	**0.0209**	**0.6410**	**0.6618**	**0.0000**	**2,943.2985**	**2,943.2985**	**0.9444**		**2,966.9073**

3.2 Demolition - 2022

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	6.4700e-003	0.2463	0.0520	8.9000e-004	0.0246	2.1700e-003	0.0268	6.7400e-003	2.0800e-003	8.8200e-003		97.1869	97.1869	3.2000e-003	0.0154	101.8541
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0535	0.0390	0.4438	1.2300e-003	0.1479	7.7000e-004	0.1486	0.0392	7.1000e-004	0.0399		125.0830	125.0830	4.1600e-003	3.8700e-003	126.3392
Total	**0.0600**	**0.2853**	**0.4958**	**2.1200e-003**	**0.1725**	**2.9400e-003**	**0.1754**	**0.0460**	**2.7900e-003**	**0.0488**		**222.2698**	**222.2698**	**7.3600e-003**	**0.0193**	**228.1933**

3.3 Site Preparation - 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					
Fugitive Dust					1.0605	0.0000	1.0605	0.1145	0.0000	0.1145			0.0000			0.0000
Off-Road	2.1613	22.3768	21.5790	0.0416		1.0729	1.0729		0.9877	0.9877		4,014.1146	4,014.1146	1.2916		4,046.4052
Total	**2.1613**	**22.3768**	**21.5790**	**0.0416**	**1.0605**	**1.0729**	**2.1334**	**0.1145**	**0.9877**	**1.1023**		**4,014.1146**	**4,014.1146**	**1.2916**		**4,046.4052**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0684	0.0498	0.5671	1.5700e-003	0.1889	9.9000e-004	0.1899	0.0501	9.1000e-004	0.0510		159.8282	159.8282	5.3100e-003	4.9400e-003	161.4334
Total	**0.0684**	**0.0498**	**0.5671**	**1.5700e-003**	**0.1889**	**9.9000e-004**	**0.1899**	**0.0501**	**9.1000e-004**	**0.0510**		**159.8282**	**159.8282**	**5.3100e-003**	**4.9400e-003**	**161.4334**

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					0.4772	0.0000	0.4772	0.0515	0.0000	0.0515			0.0000			0.0000
Off-Road	2.1613	22.3768	21.5790	0.0416		1.0729	1.0729		0.9877	0.9877	0.0000	4,014.1146	4,014.1146	1.2916		4,046.4052
Total	**2.1613**	**22.3768**	**21.5790**	**0.0416**	**0.4772**	**1.0729**	**1.5501**	**0.0515**	**0.9877**	**1.0393**	**0.0000**	**4,014.1146**	**4,014.1146**	**1.2916**		**4,046.4052**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0684	0.0498	0.5671	1.5700e-003	0.1889	9.9000e-004	0.1899	0.0501	9.1000e-004	0.0510		159.8282	159.8282	5.3100e-003	4.9400e-003	161.4334
Total	**0.0684**	**0.0498**	**0.5671**	**1.5700e-003**	**0.1889**	**9.9000e-004**	**0.1899**	**0.0501**	**9.1000e-004**	**0.0510**		**159.8282**	**159.8282**	**5.3100e-003**	**4.9400e-003**	**161.4334**

3.4 Grading - 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					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	3.5824	34.7288	30.2427	0.0710		1.5112	1.5112		1.3911	1.3911		6,857.0213	6,857.0213	2.2101		6,912.2745
Total	**3.5824**	**34.7288**	**30.2427**	**0.0710**	**1.5908**	**1.5112**	**3.1020**	**0.1718**	**1.3911**	**1.5629**		**6,857.0213**	**6,857.0213**	**2.2101**		**6,912.2745**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0892	0.0650	0.7397	2.0500e-003	0.2464	1.2900e-003	0.2477	0.0654	1.1900e-003	0.0666		208.4716	208.4716	6.9300e-003	6.4400e-003	210.5654
Total	**0.0892**	**0.0650**	**0.7397**	**2.0500e-003**	**0.2464**	**1.2900e-003**	**0.2477**	**0.0654**	**1.1900e-003**	**0.0666**		**208.4716**	**208.4716**	**6.9300e-003**	**6.4400e-003**	**210.5654**

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					0.7158	0.0000	0.7158	0.0773	0.0000	0.0773			0.0000			0.0000
Off-Road	3.5824	34.7288	30.2427	0.0710		1.5112	1.5112		1.3911	1.3911	0.0000	6,857.0213	6,857.0213	2.2101		6,912.2745
Total	**3.5824**	**34.7288**	**30.2427**	**0.0710**	**0.7158**	**1.5112**	**2.2271**	**0.0773**	**1.3911**	**1.4684**	**0.0000**	**6,857.0213**	**6,857.0213**	**2.2101**		**6,912.2745**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0892	0.0650	0.7397	2.0500e-003	0.2464	1.2900e-003	0.2477	0.0654	1.1900e-003	0.0666		208.4716	208.4716	6.9300e-003	6.4400e-003	210.5654
Total	**0.0892**	**0.0650**	**0.7397**	**2.0500e-003**	**0.2464**	**1.2900e-003**	**0.2477**	**0.0654**	**1.1900e-003**	**0.0666**		**208.4716**	**208.4716**	**6.9300e-003**	**6.4400e-003**	**210.5654**

3.5 Building Construction - 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					
Off-Road	1.0083	9.6412	11.6740	0.0169		0.5573	0.5573		0.5135	0.5135		1,624.7169	1,624.7169	0.5179		1,637.6643
Total	**1.0083**	**9.6412**	**11.6740**	**0.0169**		**0.5573**	**0.5573**		**0.5135**	**0.5135**		**1,624.7169**	**1,624.7169**	**0.5179**		**1,637.6643**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0406	1.0810	0.3151	4.0200e-003	0.1287	0.0110	0.1396	0.0370	0.0105	0.0475		431.4478	431.4478	9.3500e-003	0.0640	450.7536
Worker	0.1426	0.1039	1.1836	3.2800e-003	0.3943	2.0600e-003	0.3964	0.1046	1.9000e-003	0.1065		333.5546	333.5546	0.0111	0.0103	336.9046
Total	**0.1832**	**1.1849**	**1.4986**	**7.3000e-003**	**0.5230**	**0.0130**	**0.5360**	**0.1416**	**0.0124**	**0.1540**		**765.0024**	**765.0024**	**0.0204**	**0.0743**	**787.6582**

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	1.0083	9.6412	11.6740	0.0169		0.5573	0.5573		0.5135	0.5135	0.0000	1,624.716 9	1,624.716 9	0.5179		1,637.664 3
Total	**1.0083**	**9.6412**	**11.6740**	**0.0169**		**0.5573**	**0.5573**		**0.5135**	**0.5135**	**0.0000**	**1,624.716 9**	**1,624.716 9**	**0.5179**		**1,637.664 3**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0406	1.0810	0.3151	4.0200e-003	0.1287	0.0110	0.1396	0.0370	0.0105	0.0475		431.4478	431.4478	9.3500e-003	0.0640	450.7536
Worker	0.1426	0.1039	1.1836	3.2800e-003	0.3943	2.0600e-003	0.3964	0.1046	1.9000e-003	0.1065		333.5546	333.5546	0.0111	0.0103	336.9046
Total	**0.1832**	**1.1849**	**1.4986**	**7.3000e-003**	**0.5230**	**0.0130**	**0.5360**	**0.1416**	**0.0124**	**0.1540**		**765.0024**	**765.0024**	**0.0204**	**0.0743**	**787.6582**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9445	8.9211	11.6513	0.0169		0.4973	0.4973		0.4583	0.4583		1,625.6590	1,625.6590	0.5182		1,638.6140
Total	**0.9445**	**8.9211**	**11.6513**	**0.0169**		**0.4973**	**0.4973**		**0.4583**	**0.4583**		**1,625.6590**	**1,625.6590**	**0.5182**		**1,638.6140**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0200	0.8623	0.2691	3.8600e-003	0.1287	4.9500e-003	0.1336	0.0371	4.7400e-003	0.0418		413.7669	413.7669	8.4000e-003	0.0612	432.2253
Worker	0.1332	0.0920	1.0990	3.1800e-003	0.3943	1.9600e-003	0.3963	0.1046	1.8000e-003	0.1064		325.0479	325.0479	0.0100	9.5500e-003	328.1456
Total	**0.1531**	**0.9544**	**1.3681**	**7.0400e-003**	**0.5230**	**6.9100e-003**	**0.5299**	**0.1416**	**6.5400e-003**	**0.1482**		**738.8148**	**738.8148**	**0.0184**	**0.0708**	**760.3709**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9445	8.9211	11.6513	0.0169		0.4973	0.4973		0.4583	0.4583	0.0000	1,625.6590	1,625.6590	0.5182		1,638.6140
Total	**0.9445**	**8.9211**	**11.6513**	**0.0169**		**0.4973**	**0.4973**		**0.4583**	**0.4583**	**0.0000**	**1,625.6590**	**1,625.6590**	**0.5182**		**1,638.6140**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0200	0.8623	0.2691	3.8600e-003	0.1287	4.9500e-003	0.1336	0.0371	4.7400e-003	0.0418		413.7669	413.7669	8.4000e-003	0.0612	432.2253
Worker	0.1332	0.0920	1.0990	3.1800e-003	0.3943	1.9600e-003	0.3963	0.1046	1.8000e-003	0.1064		325.0479	325.0479	0.0100	9.5500e-003	328.1456
Total	**0.1531**	**0.9544**	**1.3681**	**7.0400e-003**	**0.5230**	**6.9100e-003**	**0.5299**	**0.1416**	**6.5400e-003**	**0.1482**		**738.8148**	**738.8148**	**0.0184**	**0.0708**	**760.3709**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7920	7.7465	11.0129	0.0166		0.3833	0.3833		0.3534	0.3534		1,595.8567	1,595.8567	0.5086		1,608.5707
Paving	0.1325					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9245**	**7.7465**	**11.0129**	**0.0166**		**0.3833**	**0.3833**		**0.3534**	**0.3534**		**1,595.8567**	**1,595.8567**	**0.5086**		**1,608.5707**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0416	0.0288	0.3434	9.9000e-004	0.1232	6.1000e-004	0.1238	0.0327	5.6000e-004	0.0333		101.5775	101.5775	3.1300e-003	2.9900e-003	102.5455
Total	**0.0416**	**0.0288**	**0.3434**	**9.9000e-004**	**0.1232**	**6.1000e-004**	**0.1238**	**0.0327**	**5.6000e-004**	**0.0333**		**101.5775**	**101.5775**	**3.1300e-003**	**2.9900e-003**	**102.5455**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7920	7.7465	11.0129	0.0166		0.3833	0.3833		0.3534	0.3534	0.0000	1,595.8567	1,595.8567	0.5086		1,608.5707
Paving	0.1325					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9245**	**7.7465**	**11.0129**	**0.0166**		**0.3833**	**0.3833**		**0.3534**	**0.3534**	**0.0000**	**1,595.8567**	**1,595.8567**	**0.5086**		**1,608.5707**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0416	0.0288	0.3434	9.9000e-004	0.1232	6.1000e-004	0.1238	0.0327	5.6000e-004	0.0333		101.5775	101.5775	3.1300e-003	2.9900e-003	102.5455
Total	**0.0416**	**0.0288**	**0.3434**	**9.9000e-004**	**0.1232**	**6.1000e-004**	**0.1238**	**0.0327**	**5.6000e-004**	**0.0333**		**101.5775**	**101.5775**	**3.1300e-003**	**2.9900e-003**	**102.5455**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7579	7.2841	11.0401	0.0166		0.3465	0.3465		0.3196	0.3196		1,596.2277	1,596.2277	0.5087		1,608.9447
Paving	0.1325					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8905**	**7.2841**	**11.0401**	**0.0166**		**0.3465**	**0.3465**		**0.3196**	**0.3196**		**1,596.2277**	**1,596.2277**	**0.5087**		**1,608.9447**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0390	0.0257	0.3212	9.6000e-004	0.1232	5.8000e-004	0.1238	0.0327	5.4000e-004	0.0332		99.0731	99.0731	2.8400e-003	2.7800e-003	99.9731
Total	**0.0390**	**0.0257**	**0.3212**	**9.6000e-004**	**0.1232**	**5.8000e-004**	**0.1238**	**0.0327**	**5.4000e-004**	**0.0332**		**99.0731**	**99.0731**	**2.8400e-003**	**2.7800e-003**	**99.9731**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7579	7.2841	11.0401	0.0166		0.3465	0.3465		0.3196	0.3196	0.0000	1,596.2277	1,596.2277	0.5087		1,608.9447
Paving	0.1325					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8905**	**7.2841**	**11.0401**	**0.0166**		**0.3465**	**0.3465**		**0.3196**	**0.3196**	**0.0000**	**1,596.2277**	**1,596.2277**	**0.5087**		**1,608.9447**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0390	0.0257	0.3212	9.6000e-004	0.1232	5.8000e-004	0.1238	0.0327	5.4000e-004	0.0332		99.0731	99.0731	2.8400e-003	2.7800e-003	99.9731
Total	**0.0390**	**0.0257**	**0.3212**	**9.6000e-004**	**0.1232**	**5.8000e-004**	**0.1238**	**0.0327**	**5.4000e-004**	**0.0332**		**99.0731**	**99.0731**	**2.8400e-003**	**2.7800e-003**	**99.9731**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	25.1724					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	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	**25.1724**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0260	0.0171	0.2141	6.4000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		66.0487	66.0487	1.9000e-003	1.8500e-003	66.6488
Total	**0.0260**	**0.0171**	**0.2141**	**6.4000e-004**	**0.0822**	**3.9000e-004**	**0.0825**	**0.0218**	**3.6000e-004**	**0.0222**		**66.0487**	**66.0487**	**1.9000e-003**	**1.8500e-003**	**66.6488**

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	25.1724					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	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	**25.1724**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0260	0.0171	0.2141	6.4000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		66.0487	66.0487	1.9000e-003	1.8500e-003	66.6488
Total	**0.0260**	**0.0171**	**0.2141**	**6.4000e-004**	**0.0822**	**3.9000e-004**	**0.0825**	**0.0218**	**3.6000e-004**	**0.0222**		**66.0487**	**66.0487**	**1.9000e-003**	**1.8500e-003**	**66.6488**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.3269	2.6022	21.8446	0.0397	4.4129	0.0303	4.4432	1.1753	0.0282	1.2035		4,105.8837	4,105.8837	0.3160	0.2188	4,178.9858
Unmitigated	2.3269	2.6022	21.8446	0.0397	4.4129	0.0303	4.4432	1.1753	0.0282	1.2035		4,105.8837	4,105.8837	0.3160	0.2188	4,178.9858

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,103.52	1,081.08	785.40	2,004,177	2,004,177
Parking Lot	0.00	0.00	0.00		
Total	1,103.52	1,081.08	785.40	2,004,177	2,004,177

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
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Parking Lot	9.50	7.30	7.30	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
Hotel	0.553342	0.058522	0.188738	0.121080	0.023016	0.005623	0.010412	0.007562	0.000987	0.000568	0.026444	0.000834	0.002871
Parking Lot	0.553342	0.058522	0.188738	0.121080	0.023016	0.005623	0.010412	0.007562	0.000987	0.000568	0.026444	0.000834	0.002871

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550
NaturalGas Unmitigated	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	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					
Hotel	7512.33	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0810**	**0.7365**	**0.6187**	**4.4200e-003**		**0.0560**	**0.0560**		**0.0560**	**0.0560**		**883.8030**	**883.8030**	**0.0169**	**0.0162**	**889.0550**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	7.51233	0.0810	0.7365	0.6187	4.4200e-003		0.0560	0.0560		0.0560	0.0560		883.8030	883.8030	0.0169	0.0162	889.0550
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0810**	**0.7365**	**0.6187**	**4.4200e-003**		**0.0560**	**0.0560**		**0.0560**	**0.0560**		**883.8030**	**883.8030**	**0.0169**	**0.0162**	**889.0550**

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	1.8565	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532
Unmitigated	1.8565	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532

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	0.2207					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6337					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1500e-003	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532
Total	**1.8565**	**2.1000e-004**	**0.0232**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**0.0499**	**0.0499**	**1.3000e-004**		**0.0532**

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	0.2207					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6337					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1500e-003	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0499	0.0499	1.3000e-004		0.0532
Total	**1.8565**	**2.1000e-004**	**0.0232**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**0.0499**	**0.0499**	**1.3000e-004**		**0.0532**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix F

Cultural Resources Assessment

Rincon Consultants, Inc.

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Oakland, California 94612

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July 1, 2022
Project No: 20-10103

Carmelisa Lopez, Senior Planner
City of Newark
37101 Newark Boulevard
Newark, California 94560
Via email: Carmelisa.Lopez@newark.org

Subject: Cultural Resources Assessment for the 39888 Balentine Drive Hotel Project, Newark, Alameda County, California

Dear Ms. Lopez:

The City of Newark (City) retained Rincon Consultants, Inc. (Rincon) to prepare a cultural resources study in support of a Categorical Exemption Report for the 39888 Balentine Drive Hotel Project (project). The project is located at 39888 Balentine Drive, Newark, Alameda County, California and includes Assessor's Parcel Number 901-0195-010. The project would consist of the demolition of a one-story commercial building and construction of a new five-story hotel. The County of Alameda is the lead agency and the project is anticipated to be completed under a California Environmental Quality Act (CEQA) Categorical Exemption.

Under CEQA, a Categorical Exemption cannot be used if a proposed project would cause a substantial adverse change in the significance of a historical resource. For the purposes of CEQA, a property generally must be 50 years of age or older to qualify as a historical resource. A review of historical aerial photographs of the project site indicated the existing building was constructed sometime between 1982 and 1987 and is at most 39 years of age. The property therefore does not meet the 50-year threshold to qualify as a historical resource for the purposes of CEQA (NETROnline 1982; 1987). The effort to identify cultural resources in and in close proximity to the project site also included a records search of the California Historical Resources Information Center (CHRIS) at the Northwest Information Center (NWIC) and a Sacred Lands File (SLF) search of the Native American Heritage Council (NAHC). The CHRIS records search identified no previously recorded cultural resources or previously conducted cultural resources studies within or adjacent to the project site, and the SLF search produced negative results for site-specific information pertaining to Native American cultural resources. Based on the results of background research, the CHRIS records search, and the SLF search, there are no historical resources on or in the immediate vicinity of the project site. Therefore, the project does not have the potential to cause a substantial adverse change in the significance of a historical resource. The results of the CHRIS records search and SLF search are discussed in more detail below.

Rincon Senior Architectural Historian Steven Treffers, MHP, provided management oversight for this cultural resources study. Architectural Historian James Williams, MA, conducted background research and served as a contributing author of this report. Mr. Treffers and Mr. Williams meet the Secretary of the Interior's Professional Qualifications Standards for History and Architectural History (National Park

Service 1983). Geographic Information Systems Analyst Allysen Valencia prepared the figure found in this report. Principal Shannon Carmack reviewed this report for quality control.

Cultural Resources Records Search

A search of the CHRIS at the NWIC located at Sonoma State University was completed on February 15, 2021. The search was performed to identify all previously recorded cultural resources, as well as previously conducted cultural resources studies within the project site and a 0.5-mile radius surrounding it. The CHRIS search included a review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the Office of Historic Preservation Built Environment Resources Directory, and the Archaeological Determinations of Eligibility list.

The NWIC records search identified 18 studies previously conducted within a 0.5-mile radius of the project site, none of which were conducted within or adjacent to the project site (Table 1). No previously recorded resources were identified within the 0.5-mile radius. A summary of the records search results is included in Attachment A.

Table 1 Previous Cultural Resources Studies within 0.5 mile of the Project Site

Report Number	Author	Year	Title	Relationship to Project Site
S-000814	Banks, Peter and David A. Fredrickson	1977	*An Archaeological Investigation of Project #3, Zone 5 and Zone 6 of the Alameda County Flood Control and Water Conservation District*	Outside
S-010430	Pape, Janet L.	1989	*Archaeological Survey Report, proposed construction of sound walls along northbound I-880 in the Cities of Fremont and Newark, 04-ALA-880, P.M. 4.7/8.3 04183-233390*	Outside
S-011771	Holman, Miley Paul	1989	*Archaeological Field Inspection of the 6000 Stevenson Project, Fremont, Alameda County, California (letter report)*	Outside
S-029556	Pastron, Allen G.and R.Keith Brown	1998	*Historical Cultural Resources Assessment, Telecommunications Facility, Newark-B, Site No. PL-054-03, 5600 Mowry School Road, Newark, California.*	Outside
S-046399	Leach-Palm, Laura and Chandra Miller	2015	*Historic Property Survey Report for the MTC Interstate 880 Express Lane Phase I Project, Alameda and Santa Clara Counties, California: State Route 84 04-ALA-84 PM R3.0-R6.1, State Route 92 04-ALA-92 PM R2.5-R6.5, Interstate 880, 04-SCL-880 PM 7.5-10.5, 04-ALA-880 PM R0.0-26.4, EA 04-3G920*	Outside

Report Number	Author	Year	Title	Relationship to Project Site
S-046399a	Leach-Palm, Laura and Philip Kaijankonski	2015	*Archaeological Survey Report for the MTC Interstate 880 Express Lane Phase I Project, Alameda and Santa Clara Counties, California: State Route 84, 04-ALA-84 PM R3.0-R6.1, State Route 92, 04-ALA-92 PM R2.5-R6.5, Interstate 880, 04-SCL-880 PM 7.5-10.5, 04-ALA-880 PM R0.0-26.4, EA 04- 3G920*	Outside
S-046399b	Kaijankoski, Philip, Jack Meyer, and Laura Leach-Palm	2015	*Extended Phase I Report for the MTC Express Lane Project, Alameda and Santa Clara Counties, California: State Route 84, 04-ALA-84 PM R3.0-R6.1, State Route 92, 04-ALA-92 PM R2.5-R6.5, Interstate 880, 04-SCL-880 PM 7.5-10.5, 04-ALA-880 PM R0.0-26.4, EA 04-3G920*	Outside
S-046399c	Leach-Palm, Laura	2015	*Environmentally Sensitive Area Action Plan for the Metropolitan Transportation Commission's Interstate 880 Express, Lane Phase I Project, Alameda and Santa Clara Counties, California: State Route 84, 04-ALA- 84 PM R3.0-R6.1, State Route 92, 04-ALA-92 PM R2.5-R6.5, Interstate 880, 04-SCL-880 PM 7.5-10.5, 04-ALA-880 PM R0.0-26.4, EA 04-3G920*	Outside
S-046399d	Miller, Chandra	2015	*Historic Resource Evaluation Report for the MTC Express Lanes I-880 Project, Alameda and Santa Clara Counties, California: 04-SCL-880 PM 7.38-10.5, 04-ALA-880 PM R0.0-26.66, 04-ALA-92 PM R2.29-6.73, 04-ALA-84 PM R2.7-6.22, Project EA: 04-3G920, EIF 041000110*	Outside
S-046399e	Whitaker, Adrian R.	2016	*Supplemental Archaeological Survey Report for the MTC Interstate 880 Express Lane Phase I Project, Alameda and Santa Clara Counties, California, Interstate 880, 04-SCL-880 PM 7.5-10.5, 04-ALA-880 P< R0.0-26.4, EA 04-3G920*	Outside
S-046599	Kaijankoski, Philip, Jack Meyer, and Laura Leach-Palm	2015	*Extended Phase I Investigation for the Alameda Interstate 880 Median Barrier Replacement Project, Alameda County, California; Interstate 880, 04-ALA-880, PM R2.9-27.6, EA 04-2J070, Project ID 040000425*	Outside
S-048937	Fernandez, Trish	2015	*Cultural Resources Inventory Report for 6000 NewPark Mall Newark, Alameda County, California*	Outside
S-048937a	Anonymous	2016	*Cultural Resources Inventory Report, 6000 NewPark Mall, City of Newark, Alameda County, California*	Outside
S-048937b	Costa, Holly N. and Julianne Polanco	2016	*Sec 106 Consultation for the Sywest Development 600 Newpark Mall Road Project, City of Newark, Alameda County, California (2016-00093S)*	Outside
S-050173	Melandry, Mara and Lee Onstott		*Historic Property Survey Report, 04-Ala-880- 5.7/6.7, Stevenson Boulevard Interchange*	Outside
S-050173a	Holman, Miley Paul	1988	*Archaeological Field Inspection of the Proposed Interchange Construction at Stevenson Blvd. and I-880, Newark, Alameda County, California (letter report)*	Outside

Report Number	Author	Year	Title	Relationship to Project Site
S-050173b	Melandry, Mara	1989	*Bridge Evaluation 04-Ala-880-5.7/6.7, Stevenson Boulevard Interchange*	Outside
S-050173c	Anonymous	No date	*Historical Architectural Survey Report 04-Ala-880-5.7/6.7, Stevenson Boulevard Interchange*	Outside

Source: Northwest Information Center 2021

Sacred Lands File Search

As part of the process of identifying cultural resources for this project, Rincon contacted the NAHC on January 12, 2021 and requested a SLF search of the project site. On January 26, 2021, Rincon received a response from the NAHC stating the SLF search results were negative for site-specific information. Attachment B provides documentation of communication with the NAHC.

Findings and Recommendations

As detailed above, the project would consist of the demolition of a one-story commercial building constructed sometime between 1982 and 1987 and redevelopment of the site with a new five-story hotel. It is anticipated that the project would be completed under a CEQA Categorical Exemption. Background research found that the extant one-story commercial building at most 39 years of age, and as such, does not meet the 50-year threshold typically necessary to qualify as a historical resource under CEQA. Further, the CHRIS records search and a SLF search failed to identify any cultural resources on or in close proximity to the project site. The proposed project, therefore, does not have the potential cause a substantial adverse change to the significance of a historical resource.

Please do not hesitate to contact Rincon with any questions regarding this archaeological study.

Sincerely,
Rincon Consultants, Inc.

James Williams, MA
Architectural Historian

Steven Treffers, MHP
Senior Architectural Historian

Figure

Project Location

Attachments

Attachment A CHRIS Records Search Results Summary

Attachment B SLF Search Results Summary

References

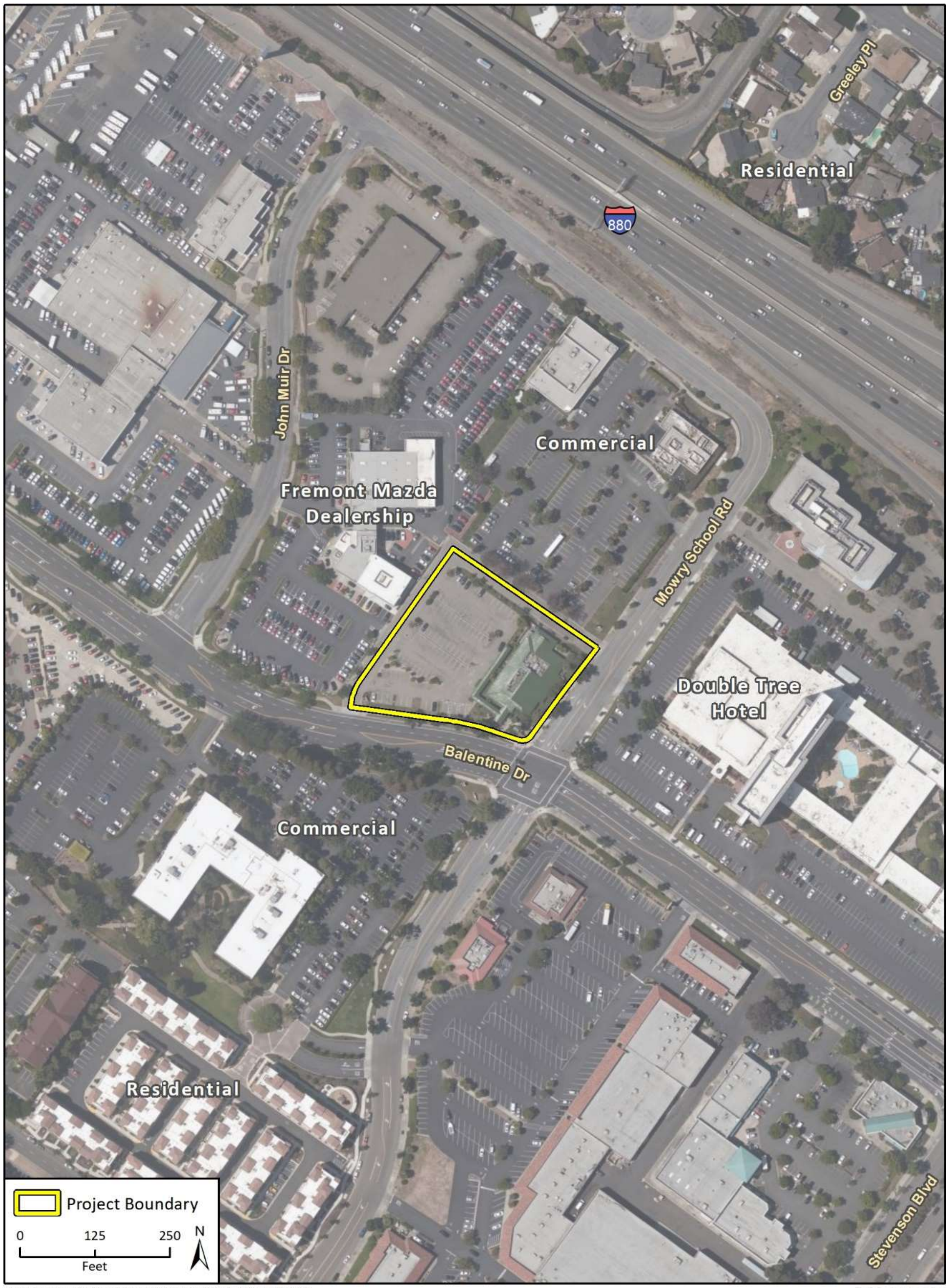
National Environmental Title Research (NETROnline)

Var. "Historic Aerials: Viewer," Historic aerial imagery of 39888 Balentine Drive and vicinity. https://www.historicaerials.com/viewer. Accessed January 8, 2021.

National Park System

1983 Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. Washington, DC. https://www.nps.gov/history/local-law/arch_stnds_0.htm , accessed March 21, 2019.

Figure: Project Location



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Attachment A

CHRIS Records Search Results

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLATA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
http://www.sonoma.edu/nwic

2/15/2021 NWIC File No.: 20-1320

James Williams
Rincon Consultants, Inc.
180 N. Ashwood Avenue
Ventura, CA 93003

Re: Hotel Project at 39888 Balentine Drive (Rincon Project #20-10103)

The Northwest Information Center received your record search request for the project area referenced above, located on the Niles, Newark USGS 7.5’ quad(s). The following reflects the results of the records search for the project area and a 0.5 mi. radius:

Resources within project area:	None listed
Resources within 0.5 mi. radius:	None listed
Reports within project area:	None listed
Reports within 0.5 mi. radius:	S-814, 10430, 11771, 29556, 46399, 46599, 48937, 50173

Resource Database Printout (list): ☐ enclosed ☐ not requested ☒ nothing listed

Resource Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Resource Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Report Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Report Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Report Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Resource Record Copies: ☐ enclosed ☐ not requested ☒ nothing listed

Report Copies: [Within] ☐ enclosed ☐ not requested ☒ nothing listed

OHP Built Environment Resources Directory: ☒ enclosed ☐ not requested ☐ nothing listed

Archaeological Determinations of Eligibility: ☐ enclosed ☐ not requested ☒ nothing listed

CA Inventory of Historic Resources (1976): ☐ enclosed ☐ not requested ☐ nothing listed

Historical Maps: ☐ enclosed ☐ not requested ☐ nothing listed

Local Inventories: ☐ enclosed ☐ not requested ☐ nothing listed

GLO and/or Rancho Plat Maps: ☐ enclosed ☐ not requested ☐ nothing listed

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Annette Neal

Researcher

Attachment B

SLF Search Results Summary

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

NATIVE AMERICAN HERITAGE COMMISSION

January 26, 2021

James Williams, MA, Architectural Historian
Rincon Consultants, Inc.

Via Email to: jwilliams@rinconconsultants.com

Re: Hotel at 39888 Balentine Drive (Rincon Project #20-10103) Project, Alameda County

Dear Mr. Williams:

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 negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. 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 me. 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: Sarah.Fonseca@nahc.ca.gov.

Sincerely,

Sarah Fonseca
Cultural Resources Analyst

Attachment